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EnterpriseOne JDE5
Server and Workstation Administration
PeopleBook

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Overview to Server and Workstation Administration

The guides that comprise the *Configuration Planning and Setup* suite are designed for use by Configurable Networking Computing (CNC) specialists, ERP 8.0 system administrators, and network/server administrators. The assumption throughout these guides is that the initial ERP 8.0 installation is complete and the standard data sources, path codes, and environments are defined. These guides tell you how to make changes or additions to the configuration setup after the initial installation.

The *Configuration Planning and Setup* suite consists of the following guides:

- *Configurable Network Computing Implementation*. This guide is geared primarily towards CNC specialists and contains the following topics:

  - Understanding middleware and verifying that you have specified the correct middleware for your servers

  - Understanding data sources and verifying that the necessary ones have been created

  - Understanding and creating path codes and environments

  - Working with the Object Configuration Manager

  - Understanding the different modes of processing

  - Understanding a typical ERP 8.0 customer configuration

- *System Administration*. This guide is written mainly for ERP 8.0 system administrators and contains the following topics:

  - Understanding and setting up data replication

  - Setting up printers

  - Using the Work with Servers program

  - Setting up user profiles

  - Setting up ERP 8.0 security

  - Understanding and working with data dictionary administration

  - Understanding vocabulary overrides

  - Understanding transaction processing

  - Working with media objects and imaging

  - Using the universal table browser

  - Understanding ERP 8.0 naming conventions

  - Understanding the jde.ini file

- *Package Management*. This guide is for ERP 8.0 system administrators and others who manage custom modifications to the ERP 8.0 environments. *Package Management* contains the following topics:

  - Package management planning and setup

  - ERP 8.0 modification rules

  - Object management

  - Building packages

- Deploying packages

- Server packages

- Multitier deployment

- *Server and Workstation Administration*. This guide is written primarily for ERP 8.0 network administrators and contains the following topics:

  - Understanding Snapshot (multiclient installer)

  - Server administration

  - Troubleshooting the workstation

  - Troubleshooting the server

Although every attempt has been made to organize the information in the *Configuration Planning and Setup* guides according to related tasks, a CNC specialist, ERP 8.0 administrator, or network administrator might find that the information needed to perform the duties of that position is described in more than one guide. For example, the person who is responsible for setting up path codes, environments, and data sources (described in the *Configurable Network Computing Implementation Guide*) might also be responsible for building and deploying packages (described in the *Package Management Guide*).

The *Configuration Planning and Setup* suite is the central location for all CNC-related tasks except:

- Initial installation of ERP 8.0. See the *ERP 8.0 Installation Guide.*

- ERP 8.0 upgrade and cumulative updates. See the *ERP 8.0 Upgrade Guide.*

- Network infrastructure and third-party software setup and maintenance. This information is provided by the applicable software or hardware vendor. J.D. Edwards does not provide documentation but does provide the following documents in the Knowledge Garden:

  - ERP 8.0 and Microsoft System Management Server Technology Considerations

  - ERP 8.0 and Tivoli TME 10 Technology Considerations

  - ERP 8.0 and BMC Software PATROL Technology Considerations

You do not need a complete understanding of the installation process to perform configuration planning and setup tasks. However, in order to use the *Configuration Planning and Setup* guides it is important that you understand what the installation accomplishes. This guide, *Configurable Network Computing Implementation*, contains a section that provides complete overview information of the installation process.

Understanding ERP 8.0 Roles

The ERP 8.0 implementation methodology defines specific roles:

- ❑ CNC consultant and CNC administrator

- ❑ Custom solution consultant and application developers

- ❑ Application consultants and application project leaders

- ❑ Hardware, network, and third-party software consultants and administrators

Each of these roles is performed by both a consultant and a customer. After implementation, the role of the consultant is diminished. Therefore, it is critical that the customer ensures that adequate training occurs for each of the roles to be assumed by his or her personnel.

Custom Solution Consultant and Application Developers

ERP 8.0 custom solution consultants resolve business issues by developing applications. Their primary responsibilities include designing the modifications with upgrades in mind and developing, testing, and introducing the customized software. While the CNC administrator performs the version control functions that build and deploy software, the customer solution consultant must help to develop the internal procedures for application development cycle for your business.

Application Consultants and Application Project Leaders

After ERP 8.0 is installed, configured, and rolled out, the application consultants will continue in their role as product experts. Although application consultants do not implement the CNC configurations, they must understand how ERP 8.0 handles distributed processing, data replication, environments, and so on, because these application issues influence the CNC decisions. In addition, application consultants must become very good at troubleshooting potential problems.

CNC Consultant and CNC Administrator

The CNC consultant and CNC administrator are involved with the installation of ERP 8.0 and the setup of environments, users, security, distributed processing, and data replication. They are also responsible for the setup of version control and testing of various CNC configurations. The CNC consultant and CNC administrator control the deployment of ERP 8.0 software throughout the company.

Hardware, Network, and Third-Party Software Consultants and Administrators

Implementing ERP 8.0 includes many tasks that are outside the scope of J.D. Edwards services. Third-party consultants provide these services as well as supplementing our staff as CNC consultants, network architects, custom modification consultants, and so on.

Understanding the Server and Workstation Administration Guide

Although this guide is aimed primarily at ERP 8.0 network administrators, those with other job functions may find the information useful or essential to their positions as well.

The *Server and Workstation Administration Guide* focuses primarily on how to:
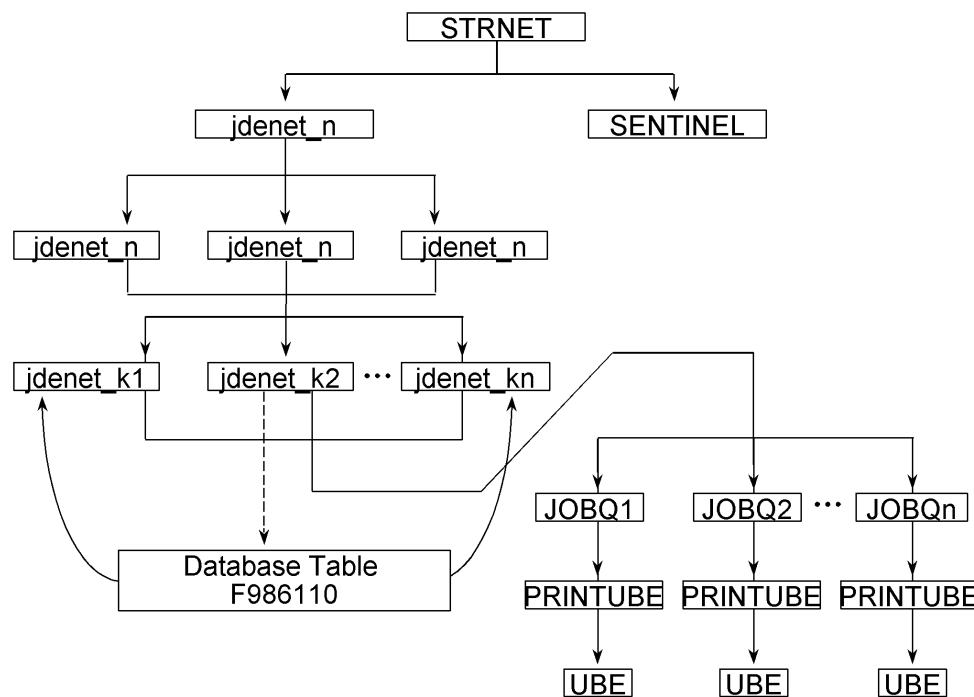
- Use the flexibility of the CNC architecture to optimize the ERP 8.0 installation to your enterprise.

- Extend an initial installation (CRP) to meet the practical requirements.

- Recognize, address, and solve the day-to-day issues that arise in a dynamic enterprise.

Server Administration – AS/400

J.D. Edwards supports ERP 8.0 enterprise servers on the AS/400 platform. The AS/400 enterprise server can operate in a coexistence, logic server, or database server environment. You need to perform certain administration procedures on your enterprise server to ensure that ERP 8.0 will run properly.

Understanding the ERP 8.0 AS/400 Architecture and Process Flow for AS/400

The following host server processes perform the indicated actions. They are shown in the following graphic.

All communications between the client and the host server take place using sockets. The communications between JDENET_N (network processes) and JDENET_K (kernel processes) occur with shared memory. JDENET_N and jdequeue communicate using the F986110 database table.

The process flow is explained below:

1. AS/400 JDENET job start-up.

- Executing the ERP 8.0 AS/400 STRNET command results in a single JDENET_N job starting and a SENTINEL job starting in a newly started subsystem. The JDENET_N job handles the communications requests. The SENTINEL job monitors the number of JDB_*x* programs that are available and in use. The JDB_*x* programs ensure commitment control is correctly scoped. There should always be a SENTINEL job running while ERP 8.0's JDENET is active.

- Each time a processing request (such as a UBE or business function) is submitted to the server, and all previosuly started NET processes are busy, ERP 8.0 starts another JDENET_N job in the same subsystem until the number of JDENET_N jobs equals the maxNetProcesses field value in the [JDENET] section of the .INI file.

- Each time a request to the server is submitted, a JDENET_N job may start another JDENET_K job until the number of JDENET_K jobs equals the maxKernelProcesses field value in the [JDENET] section of the .INI file.

2. When a user submits a batch application or a server package installation, JDENET_N (as part of the host server) communicates with the client and the following occurs:

   - The host server programs are B733SYS/JDENET_N.

   - The client environment is initialized.

   - The client tells the host server (using a socket) to initialize its environment.

   - The host server (JDENET_N) initializes its environment, and gets environment and user handles.

   - The host server passes the environment and user handles to the client (using a socket).

   - The client launches the batch application or deploys the server package installation. It then sends data to the host server (using a socket).

   - If the maximum number of kernel (JDENET_K; the "K" stands for "Kernel") jobs has not been met, JDENET_N may start a new JDENET_K job.

   - If the maximum number of JDENET_K jobs has been met, JDENET_N will put the message in a queue for each waiting JDENET_K job.

   - The client frees the user environment.

   - The client tells the host server (using a socket) to free the server's user environment.

   - The host server frees its user environment.

3. JDENET_K will perform the requested action.

4. Messages from JDENET_K can be passed back to the request ERP 8.0 client workstation or ERP 8.0 server via JDENET_N.

5. If a request to run a batch process is submitted, the following events occur:

   - JDENET_K adds a record to the F986110 database table with a status of "W" for waiting.

   - JDENET_K submits a job to the AS/400 queue. This job calls the ERP 8.0 program PRINTUBE on the AS/400 enterprise server.

   - The PRINTUBE process runs the batch application.

   - PRINTUBE changes the status in the F986110 table to "P" for processing.

   - If the batch application runs successfully, ERP 8.0 changes the status in the F986110 table to "D" for done.

   - If the batch application fails, ERP 8.0 changes the status in the F986110 table to "E" for error.

Understanding ERP 8.0 Initialization for AS/400

The following ERP 8.0 initialization occurs when starting ERP 8.0 programs (for example, PRINTUBE):

- The ONEWORLD environment name is passed as an argument to the program.

- This environment may be translated to a different environment based on the settings in the [SERVER ENVIRONMENT MAP] section of the .INI.

- The environment that is used must be a valid entry in the Environment Master (F0094) table. Likewise, it must have a valid corresponding path code in the Environment Path Code Tag (F00941) table.

- The Library .INI file setting in the [DB SYSTEM SETTINGS] section is used to determine where the ERP 8.0 server startup tables are located (for example, F98611, F986101, and so on).

- Using the above information, the server's F986101 (OCM) table in the specified database is opened.

- If an override for a given table, BSFN, and so on, or the current user exists, that data source (OMDATP column in the F986101 table) is used for the given object or user and environment. Otherwise, the data source where OMOBNM=DEFAULT for the given environment is used. Ignore any inactive records (that is, OMSTSO=NA). J.D. Edwards *highly* recommends that you do not have any default (OMOBNM=DEFAULT) records for reports (OMFUNO=UBE) or for BSFNs mapped to the server. These records might prevent report interconnections (one report calling another report) from starting correctly.

- Each unique data source in the F986101 table should correspond to one entry in the F98611 table.

- The corresponding information in the F98611 table must be correct. In particular, the OMDLLNAME field must show the correct SRVPGM (.DLL) for the database to which the data source points:

  - DBDR for files located on the AS/400 enterprise server

  - JDBNET for files not located on the AS/400 enterprise server

Starting the Enterprise Server for AS/400

You can start the ERP 8.0 enterprise server for the AS/400 either manually or automatically.

Before You Begin

- ❑ These procedures assume that ERP 8.0 has been properly installed as described in the *ERP 8.0 Installation Guide.* In that guide, you should have performed all steps up to the Installation Workbench.

- ❑ Run the clear CLRIPC command before you start the server to ensure that the server is clean. If you do not run this command prior to starting a server, the startup process will fail.

Understanding the AS/400 Library Structure for ERP 8.0

You can set up an initial program to create the library list. Also, you should add the following library to the top of your library list before you start ERP 8.0 on the enterprise server:

*release*SYS (or your system library name). The variable *release* is the ERP 8.0 release level (for example, B733SYS).

The *release*SYS library contains:

File Type	Description
INI	Identifies the jde.ini file used to initialize ERP 8.0 on the AS/400 enterprise server.
*PGM and *SRVPGM	The various programs and service programs required to run the ERP 8.0 AS/400 enterprise server.
*MODULE	The objects used to create ERP 8.0 database programs that ERP 8.0 uses to interface with DB2/400.
H (*FILE)	The file containing ERP 8.0 header file members required to build new objects on the ERP 8.0 AS/400 enterprise server.
JDE_HP4PS (*WSCST)	The workstation customization file used to transform the EBCDIC PostScript file to ASCII for auto-detecting PostScript printers.
CHGLIBOWN (*CMD)	A ERP 8.0 utility command used to change ownership of all objects contained in a library.
SHOW (*CMD)	A ERP 8.0 utility command used to show runtime output.
UPDLF (*CMD)	A ERP 8.0 utility command used to modify the maintenance attribute of logical files. This is applicable to coexistence environments.
DPSPSTMF (*CMD)	Display Stream File is used to display AS/400 Integrated File System (IFS) text stream files. The ERP 8.0 log files, JDE.LOG and JDEDEBUG.LOG, typically reside in a directory called JDE*release*, where *release* represents the ERP 8.0 release, for example, /JDEB733.
LINKBSFN (*CMD)	A command used to re-link business functions to their respective service programs (*SRVPGM). Typically, the system uses this command during an upgrade of the ERP 8.0 system library.
PID2JOB (*CMD)	The Convert Process ID to Job command returns the job information when the system passes a process ID to the command. The system writes the process ID in the JDE.LOG files. This command only returns job information while the job is still active.
PORTTEST (*CMD)	This command runs the ERP 8.0 test program PORTTEST.
RUNUBE (*CMD)	Use this command to interactively run a UBE. If you need to run a batch UBE, use the SBMJOB command to submit the RUNUBE command to batch.
SAW (*CMD)	Use this command to start the Server Administration Workbench.
QTXTSRV (*FILE)	The file containing the source for the workstation customization object for auto-detecting PostScript.
PRINTQUEUE (*FILE)	The file containing the UBE output. This output is stored as ASCII PDF members.
*PGM and *SRVPGM	The programs and server programs required to run the ERP 8.0 network.

JDENET (*JOBQ)	The job queue used by the ERP 8.0 AS/400 network jobs.
NETJOBD (*JOBD)	The job description used by ERP 8.0 AS/400 network jobs.
DBMONJOBD (*JOBD)	The job description used by the database to monitor jobs.
JDENET (*CLS)	The class used to create the routing entry for the JDENET subsystem.
ENDNET (*CMD)	The command to end the ERP 8.0 AS/400 network jobs and clean up the network runtime structures.
IPCS (*CMD)	The utility command used to determine the status of objects used by the ERP 8.0 AS/400 network jobs and as a backup method for cleaning up the IPCS objects.
STRNET (*CMD)	The command to start the ERP 8.0 AS/400 network jobs.
CLRIPC (*CMD)	The command used to clear IPC structures.
DSPIPC (*CMD)	The command used to display IPC structures.
JDE*release* (*SBSD)	The variable *release* is the ERP 8.0 release level (for example, JDEB733). This is the subsystem description under which the ERP 8.0 network jobs run.

Manually Starting the Enterprise Server for AS/400

You manually start the enterprise server for AS/400 by starting JDENet from the command line, and then starting the PORTTEST program, which verifies that the enterprise sever software was correctly installed. If it was, PORTTEST initializes and environment and user.

► **To manually start the enterprise server for AS/400**

1. Sign on to the AS/400 as ONEWORLD.

2. Start JDENet using the following command:

```
STRNET
```

3. Start the PORTTEST program using the following command to verify that the basic ERP 8.0 enterprise server software was correctly installed:

```
PORTTEST userID password environment
```

PORTTEST JDESVR JDESVR M733ASD2

where *userID* represents the ERP 8.0 AS/400 user ID, *password* represents the password, and *environment* represents the environment that you want to test.

The PORTTEST program initializes an environment and user, assuming that ERP 8.0 has been correctly installed and configured. This program opens a table (F0902) and displays up to 99 rows of data. You should see results similar to that shown below:

```
Running porttest for JDESVR on M733ASD2 with password JDESVR

Initializing Environment M733ASD2,...
Environment M733ASD2 was initialized successfully.

Initializing JDESVR/JDESVR (User/Password),...
JDESVR/JDESVR (User/Password) Initialized successfully.

Opening table F986110,...
Opened table F986110 successfully.

Closing table F986110,...
Closed table F986110 successfully.

Opening table F0902,...
Opened table F0902 successfully.

Performing select all on table F0902,...
Select all on F0902 succeeded.

Printing up to 99 records in the table F0902,...

f0902.gbaid f0902.gbawtd

------------ ------------

[98] 00009697 24060973

[97] 00009806 13540877

[96] 00010102 3140380

...

[1] 00068798 10000

[0] 00058798 250000

Total number of rows printed = 99

Calling DataDictionary Validation function,...
Data Dictionary Validation Succeed for "CO 00001".

Closing table F0902,...
Closed table F0902.

Freeing user JDESVR,...
Freed user JDESVR successfully.

Cleaning up environment M733ASD2,...
Cleaned up environment M733ASD2 successfully.

Congratulations! Porttest completed successfully.

All Done!
BYE!
```

If the F0902 table in the environment you specified is empty, the total number of rows printed will equal zero.

4. Enter the command:

```
WRKACTJOB SBS(JDErelease)
```

WRKACTJOB SBS(JDE*release*)

The variable *release* is your site's ERP 8.0 release level (for example, JDEB733).

Verify the entry NETWORK with function PGM-JDENET_N and status of SELW is running (until a "net request" is performed, the CPU will be 0).

The STRNET command also starts a second job called SENTINEL. SENTINEL monitors the number of JDB_*x* programs, where *x* is an integer, that exist and are available. These JDB_*x* programs connect to the AS/400 database (DB2) and monitor commitment control. Information regarding the number of these programs that are available and in use resides in a user space called JDE_PGMCTL (*USRSPC). When ERP 8.0 starts JDENET for the first time, the system creates these programs based on .INI file settings.

Automatically Starting the Enterprise Server for AS/400

► **To automatically start the enterprise server for AS/400**

1. Create a CL program. You will use this program to establish the appropriate ERP 8.0 library list and execute the command to start the ERP 8.0 AS/400 server job (JDENet).

```
The CL program should be similar to:

PGM

CHGLIBL LIBL(B733SYS QTEMP QGPL)

STRNET

ENDPGM
```

2. Identify and modify the program called during the AS/400 IPL to submit a job to call the program described above. The program name and location are set in the AS/400 system value, QSTRUPPGM.

3. Determine the QSTRUPPGM value by entering the command:

```
DSPSYSVAL SYSVAL(QSTRUPPGM)
```

4. Determine where the source of the program is located by executing the following command against the library/program (as set in the system value):

```
DSPPGM LIBRARY/PROGRAM NAME
```

5. Modify the source of the startup library/program by inserting a SBMJOB command calling the program created in Step 1.

6. Verify that the startup program is created correctly by re-creating it and ensuring that it is created in the library specified by the system value. Use CRTCLPGRM and prompt (using F4) for the appropriate parameters.

J.D. Edwards recommends that you separate the ERP 8.0 add library list entry (ADDLIBLE) and startup (STRNET) commands from the AS/400 startup program. Instead, you should create a separate ERP 8.0 startup program and call that program from the AS/400 startup program. This action ensures that commands subsequent to the ERP 8.0 add library list entry and startup are not associated with the modified library list. Following this recommendation

also ensures that your ERP 8.0 library list is set correctly prior to issuing the STRNET command. In addition, the separately called program provides you with a single location in which to locate and maintain ERP 8.0 startup commands on the AS/400.

Shutting Down the Enterprise Server for AS/400

You can manually shut down the enterprise server for the AS/400.

Before You Begin

❑ Ensure that your library is set correctly before performing this command. See *Understanding the AS/400 Library Structure for ERP 8.0*.

▶ To shut down the enterprise server for AS/400

From an AS/400 console, end JDENet using the following command:

```
ENDNET
```

This command is in the system library - for example, B733SYS - causes ERP 8.0 to end the JDENet jobs and clean up all JDENet runtime structures.

Using AS/400 Integrated File System Logging Support

To achieve better performance and to allow easier access to log files from the workstation, ERP 8.0 generates log files for the AS/400 in the Integrated File System (IFS) rather than the traditional file system on the AS/400.

With IFS, ERP 8.0 generates log files as stream files (STMF) in an IFS directory based on the AS/400 jde.ini file settings. The following examples provide possible jde.ini settings:

Example 1

```
[DEBUG]
DebugFile=jdedebug
JobFile=jde.log
```

ERP 8.0 generates log files in the IFS root directory.

Example 2

```
 [DEBUG]
DebugFile=/jdeb733_a/jdedebug
JobFile=/jdeb733_a/jde.log
ERP 8.0 generates log files in the IFS directory called
"/jdeb733_a."
```

Note:

The directory must exist with proper authority granted to the logging job.

From an AS/400 console, enter either of the following commands:

- WRKLNK to show directory and stream files in the IFS. Page up and down to locate the log files.

- DSPSTMF (shipped with ERP 8.0 in the SYSTEM library) to view the IFS stream file.

For example:

DSPSTMF STMF(`/jdeb733_a/jdedebug_248135.log')

Cleaning Up the Enterprise Server for AS/400

If ERP 8.0 ends abnormally, you might need to manually perform clean up tasks on the AS/400 enterprise server. It is possible that IPC (Inter-Process Communication) structures may not be cleaned up following an execution of ENDNET. This may cause further problems trying to start JDENet. If the IPC structures are not properly removed by ENDNET, you can manually remove them. IPC structures may become locked by an interactive job. For example, you may have to sign off and sign back on in order to perform a successful clean up.

The ERP 8.0 AS/400 server is shipped with the DSPIPC and CLRIPC commands, which allow you to display the IPC-related information and to remove IPC structures.

If tracing is turned on in addition to IPC, you should clear the jde.log and jdedebug files. This action keeps the files from becoming too large and clears out old messages.

Caution:

You should never clear IPC structures unless you are ready to restart the JDENet process.

Before You Begin

- ❑ You should ensure that your library list is correct before executing the following IPC commands. Each of the commands calls the IPCS command for all of the IPC types. Each command has two parameters: "from" and "to". Use these parameters to specify the starting and ending IPC addresses on which you want to operate. The default for the "from" parameter is *INI. This is the address specified in the .INI file. The default for the "to" parameter is *CALC. This means that the value is calculated based on the value of the "from" parameter. For example, you could specify 999 more than the "from" parameter.

Note:

IBM Opti-Connect and Opti-Mover products use the IPC shared memory address 9999. Avoid setting the jde.ini file setting IPCStartKey to a starting value using the range of 9000 to 9999.

► **To clean up the enterprise server for AS/400**

From an AS/400 command line, enter the following IPCS commands:

```
DSPIPC
```

```
CLRIPC
```

► **To clear the jde.log and jdedebug files for AS/400**

1. To clear the JDE.LOG stream files, enter the command:

```
DEL `/JDErelease/jde_*'
```
   where *release* is the ERP 8.0 release - for example, JDEB733.

2. To clear the JDEDEBUG log, enter the command:

```
DEL `/JDErelease/jdedebug_*'
```
   where *release* is the ERP 8.0 release - for example, JDEB733.

Setting Up a Printer for AS/400

For printing, ERP 8.0 AS/400 servers generate PostScript, PCL, or line printer reports. The line printer OUTQ configuration is similar to most typical AS/400 OUTQ configurations. This section provides the steps necessary to set up the Postscript and PCL OUTQ configurations.

Unless otherwise specified in the printer definition, the default OUTQ used for printing batch process reports is the same as the default OUTQ of the user submitting the job.

See Also

❑ *Working with the Printers Application* in the *System Administration Guide* for more information about setting up printers

► **To create the OUTQ**

Enter the following of commands:

```
CRTOUTQ OUTQ(QGPL/outqname) RMTSYS(*INTNETADR) RMTPRTQ(`')
CNNTYPE(*IP) DESTTYPE(*OTHER) TRANSFORM(*NO) INTNETADR(`IP Address of
your printer')
```

Note:

Some printers require that you set the parameter RMTPRTQ to something other than `'. See the instruction manual for your printer for additional information (for example, you must set this parameter to "PASS" for the IBM Network Printer 4317).

► **To start the OUTQ**

1. Enter the command:

```
STRRMTWTR outqname
```
   For example:

```
STRRMTWTR QGPL/JDE_HP4PSB
```

2. You might have to release the outqueue before using it. If so, enter the following command:

```
RLSOUTQ outqname
```
   For example:

```
DEL '/JDErelese
```
Where *release* is the ERP 8.0 release - for example, JDEB733.

Printing Multiple Copies to a Remote Printer

This task is necessary only if the output queue does not support printing multiple copies, and it applies to remote output queues only. Only system administrators can print multiple copies to a remote printer.

► To print multiple copies to a remote printer

1. End the remote writer to which the output queue is connected.

2. Use the Change Output Queue (CHGOUTQ) command to change the Display Options (DSPOPT) parameter so that it contains the value "XAIX".

3. Restart the remote writer.

4. Your output queue should now be able to send multiple copies of your documents to the remote printer.

Administrating Batch Processes for AS/400

Administrating batch processes involves knowing what processes run when ERP 8.0 starts, where files are placed before and after printing, and how to watch those processes.

Depending on how the software is installed, jobs run under several subsystems on the AS/400. The first subsystem, JDEB733, is created during the installation process, and is responsible for running the ERP 8.0 net and kernel processes. QBATCH is the default subsystem that jobs run in, but you can use other subsystems to distribute the workload.

Monitoring Batch Processes

► To monitor batch processes

1. Log on to the AS/400 enterprise server using an administrative account.

2. Enter the following command, substituting Subsystem with the appropriate subsystem name:

```
WRKACTJOB SBS(Subsystem)
```

For WRKACTJOB SBS(JDEB733), the output appears similar to the following example:

```
              Work with Active Jobs                    JDED
                                         02/22/97 08:40:21
CPU %:  41.6   Elapsed time:  00:09:10   Active jobs:  261
Type options, press Enter
2=Change  3=Hold  4=End  5=Work with  6=Release  7=Display message
8=Work with spooled files  13=Disconnect ...
Opt Subsystem/Job User     Type CPU % Function      Status
  JDEB733         QSYS     SBS     .0                DEQW
    NETWORK   ONEWORLD     BCH     .6 PGM-JDENET_N   SELW
    NETWORK   ONEWORLD     BCI     .4                DEQW
```

This output shows that two NETWORK processes are running.

When you send a batch process report to an AS/400 server for processing, the NETWORK jobs are responsible for accepting and queuing the request, while the QBATCH subsystem is responsible for the execution of the report. To monitor the batch requests, use the WRKACTJOB command, specifying QBATCH as the subsystem.

For WRKACTJOB SBS(QBATCH), the output appears similar to the following example:

```
               Work with Active Jobs                        JDED
                                             02/22/97 08:40:21
CPU %:   41.6    Elapsed time:  00:09:10   Active jobs:  261

Type options, press Enter.
 2=Change  3=Hold  4=End  5=Work with  6=Release  7=Display message
 8=Work with spooled files  13=Disconnect ...

Opt Subsystem/Job User       Type  CPU %  Function       Status
   QBATCH           QSYS      SBS     .0                  DEQW
     R0006P         ONEWORLD  BCH    1.4  PGM-PRINTUBE    RUN
```

The R0006P job is the actual report running at this time. The program PRINTUBE is the job responsible for running and printing the request. When the job is finished, it leaves the queue, and the print job is either printed and deleted, or saved in the B733SYS/PRINTQUEUE file.

Reviewing Batch Output Files

If users submit a batch report to run on the AS/400, a corresponding output file is created on the enterprise server. It can then be displayed on the user's workstation when the report is completed or printed on the server.

The default location for Portable Document Format (PDF) files is based on the library name for the system programs. This name is normally B733SYS, but the site installation can override the default setting.

The system library contains a PRINTQUEUE file. This file is the location for PDF report requests. Members are added to this file each time a PDF report is completed.

► **To review batch output files**

1. Sign on to the AS/400 enterprise server using an administrative account.
2. Enter the following command:

```
WRKMBRPDM B733SYS/PRINTQUEUE
```

Output for this command appears similar to the following example:

```
Work with Members Using PDM          JDED

 File . . . . . .  PRINTQUEUE
  Library . . . .   B733SYS        Position to . . . . .

 Type options, press Enter.
  3=Copy   4=Delete     5=Display  7=Rename   8=Display description
  9=Save  13=Change text  18=Change using DFU  25=Find string

 Opt Member     Date     Opt Member    Date     Opt Member    Date
    F22         02/18/97    F46        02/12/97     F61        02/12/97
    F30         02/18/97    F47        02/12/97
    F36         02/19/97    F48        02/12/97
    F41         02/12/97    F49        02/21/97
    F42         02/12/97    F50        02/21/97
    F43         02/19/97    F53        02/12/97
    F44         02/21/97    F58        02/12/97
    F45         02/21/97    F59        02/12/97

Bottom
 Parameters or command
 ===>
 F3=Exit       F4=Prompt          F5=Refresh        F6=Create
 F9=Retrieve   F10=Command entry  F23=More options  F24=More keys
```

The naming convention for each member is based upon the ERP 8.0 job number, which is a unique number assigned when the report is submitted. This number is a unique print request ID and is incremented each time that a report is submitted to the enterprise server, regardless of whether the job is successful or fails. It is not related to the process ID or job number that the AS/400 assigns the batch job.

If you submit a batch process report to a specific server, the OUTQ for printing is dependent on the jde.ini file settings for the workstation. You must make the following changes to the workstation and enterprise server jde.ini files:

- Change the default OUTQ specified in the jde.ini file of the enterprise server. This setting is under the [Network Queue Settings] section and is called DefaultPrinterOUTQ. This OUTQ is used if an OUTQ is not passed to the enterprise server from the workstation or if the OUTQ name that is passed to the enterprise server is Default.

  Two other settings, based upon the jde.ini file on the workstation, tell the server whether to print the report immediately upon completion, and whether to save the output from the report or delete it. Both of these settings are set in the following manner:

```
 [NETWORK QUEUE SETTINGS]

SaveOutput=TRUE

PrintImmediate=TRUE
```

  Setting SaveOutput to TRUE causes the enterprise server to save the PDF files in B733SYS/PRINTQUEUE until you explicitly delete them. Setting PrintImmediate to TRUE tells the enterprise server to print the job immediately after completion of the report.

  You should encourage workstation users to use the SaveOutput=FALSE entry in their jde.ini files. If users at workstations decide to save their output, you should encourage them to periodically delete the entries using the correct ERP 8.0 Job Master Search in the Submitted Reports application (P986116).

Note:

To display job numbers, end-user workstations can use the Submitted Reports application (P986116). Similarly, system administrators can use the Work With Servers application (P986116). While both applications perform similar functions, most sites generally use security to restrict access to the Work With Servers application to system administrators. Both applications use the Job Master Search form to display job numbers that correspond to member names. You can use either application to delete .PDF files by deleting appropriate entries.

Encoding the Passwords of Users Who Submit Batch Jobs

On the AS/400, when you want to encode user passwords for batch jobs, you need to change settings in the [SECURITY] section of the JDE.INI file.

▶ **To encode passwords of users who submit batch jobs**

Change the following setting in the JDE.INI file to FALSE to deactivate encoding:

```
[SECURITY]
ServerPswdFile=TRUE
```

Running Batch Process Reports from the Server Command Line

If you have the proper authority, you can run batch process reports from the server command line.

▶ **To run batch process reports from the server command line**

On the command line, enter the following command:

```
RUNUBE USER(USER) PASSWORD(PASSWORD) ENVIRON(ENVIRONMENT)
REPORT(REPORTNAME) VERSION(VERSION)
```

Example: Running Reports from the Command Line for AS/400

This example shows a command for executing R0006P batch process report:

```
RUNUBE USER(SF5488324) PASSWORD(PASSWORD) ENVIRON(PD7334)
REPORT(R0006P) VERSION(XJDE0001)
```

This command begins processing version XJDE0001 of the batch process report R0006P in the PD7334 environment. After completion, the PostScript spool file resides on the printer_1 OUTQ. The spool file leaves printer_1, and the .PDF file is not deleted.

Scheduling Reports from the Command Line for AS/400

You can schedule a report from the command line for processing on a future date. You do this with the SBMJOB (submit job) command. There are many options available for this command, but the general form will be similar to the following example:

```
SBMJOB CMD(RUNUBE USER(SF5488324) PASSWORD(PASSWORD) ENVIRON(PD7334)
REPORT(R0006P) VERSION(XJDE0001)) SCDDATE(*FRI) SCDTIME(0600)
```

This command schedules the XJDE0001 version of R0006P to run on the next Friday at 06:00am. This job is submitted in the default job queue for the user who submitted the job. You can specify overrides on the command line or by prompting (F4) for more information.

You can view reports that have been submitted in this method by using the WRKSBMJOB command. This command displays all jobs submitted by the current user for batch processing. Information displayed from this command includes the job name, the user who submitted the job, the type of job (BATCH), and the status. Using F11 also displays any scheduling information for jobs submitted, but not yet run.

Output from the WRKSBMJOB command looks similar to the following example:

```
                 Work with Submitted Jobs                JDED
                                              02/22/97 09:40:47
   Submitted from . . . . . . . . . :    *USER

   Type options, press Enter.
    2=Change   3=Hold   4=End   5=Work with   6=Release   7=Display message
    8=Work with spooled files

                                                  -----Schedule-----
   Opt Job         User        Type     -----Status----- Date    Time
       R0006P      KL5595218   BATCH    OUTQ
       R0006P      KL5595218   BATCH    OUTQ
       QDFTJOBD    KL5595218   BATCH    OUTQ
       QDFTJOBD    KL5595218   BATCH    OUTQ
       QDFTJOBD    KL5595218   BATCH    SCD               02/28/97 06:00:00
```

This output shows that a job, QDFTJOBD (the default job description) was submitted for batch processing by KL5595218. The status, SCD, means the process has been scheduled, but not yet run. The schedule date and time indicate when this job is started.

Running Multiple Instances of ERP 8.0 on the AS/400

There are several reasons you might want to run multiple instances of ERP 8.0 on an AS/400 server:

- To test a new service pack
- To upgrade to a new version of ERP 8.0

You can run multiple instances of ERP 8.0 on the same enterprise server by following a few simple guidelines:

Note:

You cannot use ERP 8.0 Planner to help set up data for multiple instances of ERP 8.0. Be prepared to manually copy data and to set up new Object Configuration Manager (OCM) mappings for each new instance.

Identifying a ERP 8.0 Instance on the AS/400

A ERP 8.0 instance on the AS/400 server is uniquely identified by the following:

- ERP 8.0 system directory (integrated file system, or IFS) and library (QSYS file system)

- Path codes (IFS and QSYS file systems)
- Use of selected INI file settings

INI settings you use to uniquely define a ERP 8.0 instance are summarized in the following table:

Section in server jde.ini file	Parameter	Purpose
[INSTALL]	DefaultSystem=	The name of the ERP 8.0 System library. This value must be unique for each ERP 8.0 instance.
[JDEIPC]	StartIPCKeyValue=	The value of the first interprocess communication (IPC) ID (of a range of keys, which JDEIPC uses for shared memory. This value, plus the value of the maxNumberofResources parameter, defines the range of IPC IDs that JDE will use for an instance of ERP 8.0.
[JDENET]	ServiceNameListen=	The TCP/Ip port number the server uses for receiving communications packets from workstations and/or other ERP 8.0 servers.
[JDENET]	ServiceNameConnect=	The TCP/IP port number the server ses for sending communications packets to workstations and/or other ERP 8.0 servers.
[DBSYSTEM SETTINGS]	Default Env=	The default environment for an instance of ERP 8.0.
[DB SYSTEM SETTINGS]	Default PathCode=	The data source for an instance of ERP 8.0.
[DB SYSTEM SETTINGS]	Library=	The database library that stores the system tables used by ERP 8.0 at startup.

Identifying a ERP 8.0 Instance for Applying Security on the AS/400

Additionally, to apply ERP 8.0 security over multiple instances, you use these items to uniquely identify an instance:

- OCM mappings
- Database
- ERP 8.0 User Profile (owner and default user ID under which ERP 8.0 jobs start)
- Selected INI settings

INI settings you use to uniquely define a ERP 8.0 instance when you are applying security over multiple instances are summarized in the following table:

Section in server jde.ini file	Parameter	Purpose
[DEBUG]	DebugFile	Specifies the location of the *jdedebug.log* file.
[DEBUG]	JobFile	Specifies the location of the *jde.log* file.
[DEBUG]	JDTSFile	Specifies the location of the lock manager trace file on the AS/400.

[DB SYSTEM SETTINGS]	Database	Specifies the name of the database where the system tables reside.
[SECURITY]	DataSource	Specifies the name of the ERP 8.0 data source that contains the security tables, used for user vaidation.

For more information on securing multiple instances of ERP 8.0, see *Setting Up AS/400 ERP 8.0 Database Security* in this section.

Creating an Instance of ERP 8.0 on the AS/400

To create an instance of ERP 8.0 on the AS/400, you

- Copy needed libraries and directories and modify the values of selected parameters in the INI library

- Apply security to multiple instances of ERP 8.0, if you desire to do so

- Create a new ERP 8.0 subsystem identification

- Start ERP 8.0 services

Before You Begin

- ❑ Check to see if there is enough space on the Direct Access Storage Device (DASD) to create a new instance of ERP 8.0.

- ❑ Assess data storage and backup requirements.

- ❑ Consider the procedure you will follow for updating the ERP 8.0 server with new versions of ERP 8.0.

- ❑ Determine the strategy for performing server package builds and updates. This might include, for example, setting up a second deployment server.

- ❑ Create a new environment for use with each new ERP 8.0 instance.

For information on creating a new environment, see the section *Working with an Environment* in the *Configurable Network Computing Implementation* guide.

Copying Libraries and Directories

To create an instance of ERP 8.0 on the AS/400, you copy the following:

- System library

- System directory

- Path code library

- Path code directory

► To copy libraries and directories

1. End ERP 8.0 services, if necessary.

2. Remove ERP 8.0 security, if necessary.

3. From the AS/400 main menu, copy the ERP 8.0 system library in the QSYS file system by typing the following command:

```
CPYLIB B7334SYS B734CST
```

where B734CST is the name for the system library in the new instance of ERP 8.0.

4. From the AS/400 main menu, copy the ERP 8.0 system directory in the IFS by first creating a temporary library with the following command:

```
CRTLIB TEMPLIB
```

5. Create a save file in the temporary library for the system directory by typing the following command:

```
CRTSAVF FILE (TEMPLIB/b734SYS)
```

6. Save the system directory into the save file by typing the following command:

```
SAVE DEV ('/QSYS.LIB/TEMPLIB/B734SYS.FILE') OBJ(('/B734)) USEOPTBLK(*NO)
DTACPR(*YES)
```

7. Restore the save file for the system directory to a directory with a new name by typing the following command:

```
RST DEV('/QSYS.LIB/TEMPLIB/B734SYS.FILE') OBJ(('/B734sys/*'
*INCLUDE/B734cst'))
```

where B734cst is the name of the new system directory.

Note:

Throughout the entire copying procedure, the name for the new directories and libraries must match.

8. From the AS/400 main menu, copy the path code library in the QSYS file system by typing the following command:

```
CPYLIB PRD734 CST734
```

where CST734 is the name for the path code library in the new instance of ERP 8.0. The name of the library for the new instance cannot exceed eight characters in length.

Note:

The path code directory for any environment that you intend to use for a new instance of ERP 8.0 must be copied to the new directory. You cannot share path code directories between two or more instances of ERP 8.0 as this could cause specification file corruption.

9. From the AS/400 main menu, copy the path code directory in the IFS by first creating a save file in the temporary library using the following command:

```
CRTSAVF FILE(TEMPLIB/PRD734)
```

Note:

You must follow the procedure for copying the path code directory for each path code you copy.

10. Save the path code directory into the save file by typing the following command:

```
SAV DEV('QSYS.LIB/TEMPLIB/PRD734.FILE') OBJ(('/prd734/*')) USEOPTBLK(*NO)
DTACPR(*YES)
```

11. Restore the save file for the path code directory to a directory with a new name by typing the following command:

```
RST DEV('QSYS.LIB/TEMPLIB/PRD734.FILE') OBJ(('/prd734/*' INCLUDE '/cst734'))
```
where cst734 is the name of the new path code directory.

12. From the AS/400 main menu, create a ERP 8.0 subsystem from the system library by typing the following command:

```
CRTOWSBS <subsystem name> <system library>
```
where <subsystem name> is the name you give to the ERP 8.0 subsystem for the new instance of ERP 8.0, and <system library> is the name of the ERP 8.0 system library in the QSYS file system for the new instance of ERP 8.0.

Note:

You can use the same subsystem for multiple instances of ERP 8.0. If you decide to create a separate subsystem for each instance of ERP 8.0 that you run, see *Creating ERP 8.0 Subsystem for Multiple Instances of ERP 8.0 on the AS/400* in this chapter.

13. Modify the following parameters in the INI library:

```
 [INSTALL]

DefaultSystem=<System Library>

[JDEIPC]

startIPCKeyValue=<Unused start key not within another instance's IPC range>

[JDENET]

serviceNameListen=<Available port>

serviceNameConnect=<Available port>

[DB SYSTEM SETTINGS]

Default Env=<New environment>

Default PathCode=<New path code>
```

Applying Security to Multiple Instances of ERP 8.0 on the AS/400

If you want to apply security to multiple instances of ERP 8.0, complete the next five steps. If you do not, you can follow the steps to create a ERP 8.0 subsystem and start ERP 8.0 service.

See *Setting Up AS/400 ERP 8.0 Database Security* in this section for more information on securing multiple instances of ERP 8.0.

► **To apply security to multiple instances of ERP 8.0 on the AS/400**

1. Copy the OCM library.
2. Copy the database libraries, such as SYSB7334, B7334MAP, and so on.

3. Create a new AS/400 user profile for each new instance of ERP 8.0.

4. From the AS/400 main menu, create a new log path in the IFS by typing the following command:

```
CRTDIR DIR('/B7334CSTLOG')
```
Where CSTLOG is the name of the new IFS log directory.

5. Modify the following parameters in the INI library:

```
DEBUG]

DebugFile=<new log path>/JDEDEBUG.LOG

JobFile=<new log path?/JDE.LOG

JDETSFile=<new log path>/JDETS.LOG

[DB SYSTEM SETTINGS]

Database=<new OCM library>

[SECURITY]

DataSource=<Location of new F98OWSEC library>
```

Note:

The parameter values in the [DEBUG] section must be uppercase.

Creating a ERP 8.0 Subsystem on the AS/400

On the AS/400 platform, a subsystem is a logical process that is used to run system jobs, whether they are ERP 8.0 or other application jobs. ERP 8.0 network and kernel jobs run under the AS/400 subsystem, which J.D. Edwards ships with a default description. For example, for OneWorld Xe, the default description is JDEB7334. You can use this description without modification if you are running a single instance of ERP 8.0 on the AS/400 server.

If you decide to run multiple instances of ERP 8.0, you need to create a new subsystem with a unique description for each instance of ERP 8.0 that you create. To create a new ERP 8.0 subsystem description, you use the CRTOWSBS command.

For more information on subsystems, see *Working ERP 8.0 Subsystems* in the *ERP 8.0 System Administration Guide*.

Before You Begin

❑ Stop ERP 8.0 services before you run the CRTOWSBS command.

▶ **To create a ERP 8.0 subsystem on the AS/400**

1. From the AS/400 main menu, type the following command, and then press Enter or press the F4 key:

```
CRTOWSBS
```

The CREATE New OneWorld Subsystem (CRTOWSBS) form appears.

2. In the CREATE OneWorld Subsystem form, enter character values for the following parameters and press Enter:

- SUBSYSTEM
- SYSLIB

> **Note:**
>
> The maximum number of characters allowed for the description of each parameter is 10.

> **Caution:**
>
> Be sure the name of the system library matches the name that you created when you copied the ERP 8.0 system library in the QSYS file system.

The CRTOWSBS command creates a new subsystem description in the ERP 8.0 system library and updates the STRNET and ENDNET programs with the new subsystem name as the default parameter.

3. To delete the old subsystem description from the system library, type the following command and then press Enter or press the F4 key:

```
WRKOBJ OBJ <SUBSYSTEM NAME>/<SYSTEM LIBRARY NAME>) OBJTYPE(*SBSD)
```

Where SUBSYSTEM NAME is the subsystem description you want to delete and SYSTEM LIBRARY NAME is the system library where the subsystem description is located.

4. In the Work with Objects form, type 4 for Delete and press Enter.

Starting ERP 8.0 Services on the AS/400

You start ERP 8.0 services by clearing IPC memory using CLRIPC command and then running the STRNET command.

► **To start ERP 8.0 services on the AS/400**

1. From the AS/400 main menu, clear IPC memory by typing the following command:

```
CLRIPC
```

2. From the AS/400 main menu, start ERP 8.0 AS/400 services by typing the following command:

```
STRNET
```

Setting Up AS/400 ERP 8.0 Database Security

You can secure profiles and objects for ERP 8.0 on the AS/400 with the Set Up OneWorld Authority (SETOWAUT) command. When you enter this command, a form appears that allows you to enter specific security information for your system. The authority is implemented only on the AS/400 machine where the command is executed.

The SETOWAUT command allows you to set up security for a single instance of ERP 8.0 or for multiple instances of ERP 8.0. If you run multiple instances of ERP 8.0, you can set up separate user profiles for each instance. The SETOWAUT command sets up the authorities for each ERP 8.0 instance, adds profile names to an authorization list, and sets object ownership for each ERP 8.0 instance.

Note that there are two separate authorization lists that maintain security. Values in two parameters of the SETOWAUT program specify the authorization lists.

The USRPRF parameter value specifies the ERP 8.0 user profile. When you run the SETOWAUT program, the program automatically creates a user profile authorization list with the same name. This list secures all ERP 8.0 objects with the exception of the SYSTEM library and the objects located within.

Note:

To secure all objects in a library, directory, or both when you are running a single instance of ERP 8.0, you must enter *ALLOBJ in the Secure Objects Coexistence parameter of the SETOWAUT form. If you are running multiple instances of ERP 8.0, and you want to secure all objects, you must enter Y in the Secure All Objects parameter of the SETOWAUT form. For more details see *Secure Objects for Coexistence* and *Secure All Objects* in this chapter.

The user profile authorization list also secures all database tables in a coexistence environment.

The USRAUTL parameter value specifies the administrative authorization list. When you run the SETOWAUT program, the program automatically creates an administrative authorization list that secures the SYSTEM library and all objects within it.

Any user who will perform basic ERP 8.0 administration (Start, End, Clear IPC, etc.) on the AS/400 must be added to this list. Note that CRTOWADPRF is a supplied command that will add administrative users to this list; RMVOWADPRF is a supplied command that will remove such users from the list.

Whether you want to set up security for one instance of ERP 8.0 or for multiple instances, the Setup OneWorld Authority (SETOWAUT) form appears when you run the SETOWAUT command. However, the parameter values that you enter and the parameter fields that appear in the form differ, depending on what you have decided to do.

For more information on each of the parameters that appear in the SETOWAUT form, see *Explanations of AS/400 Database Security Parameters* in this chapter.

These parameter differences are explained in the three following tables:

Parameters Present in SETOWAUT Form for Both Single and Multiple Instances of ERP 8.0	Meaning	Value to be Entered for a Single Instance of ERP 8.0	Value to be Entered for Multiple Instances of ERP 8.0
USRPRF	ERP 8.0 User Profile	ERP 8.0	Configurable - enter a new value for each instance of ERP 8.0.
USRAUTL	Admin. Authorization List	OWADMINL	Configurable - enter a new value for each instance of ERP 8.0.

Parameters Present in SETOWAUT Form for Single Instance of ERP 8.0 Only	Meaning	Value to be Entered for a Single Instance of ERP 8.0	Value to be Entered for Multiple Instances of ERP 8.0
OWPRF	Modify ONEWORLD Profile	Y is default.	Parameter is not present if you enter a value other than ONEWORLD for the USRPRF parameter.
JDEPRF	Modify JDE Profile	Y is default.	Parameter is not present if you enter a value other than ONEWORLD for the USRPRF parameter.
ALLOBJECTS	Secure Objects for Coexistence	*NONCOEXIST is default. *COEXIST is used if you have World Software installed. *ALLOBJECTS secures all objects contained in one or more directories.	Parameter is not present if you enter a value other than ONEWORLD for the USRPRF parameter.

Parameter Present in SETOWAUT Form for Multiple Instances of ERP 8.0 Only	Meaning	Value to be Entered for Multiple Instances of ERP 8.0	Value to be Entered for Single Instance of ERP 8.0
OBJOPT	Secure All Objects	N is default. Enter Y if you want to secure all objects contained in one or more directories. Entering Y is not recommended because it can degrade performance.	Parameter is not present if you enter ONEWORLD as the value for the USRPRF parameter.

The following information provides a summary of the security model when you run a single instance of ERP 8.0:

Library	Description of Security
Non-Coexistent, Non-System Library	The JDE user profile owns datapath libraries and the ONEWORLD user profile owns the object libraries. The libraries are secured by the ONEWORLD AUTL. All objects within these libraries remain unchanged, which means that either JDE or ONEWORLD owns the objects and *PUBLIC has *ALL authority to these objects. The library authority to create objects within the library is set to *ALL (*PUBLIC will have *ALL authority).
Coexistent, Non-System Library	All libraries are the same as in a non-coexistence environment, except an additional profile such as JDEGRP, that secures datapath libraries. This profile has *USE authority to the library. For WorldSoftware, the SBMJOB command requires *USE authority to all the libraries in the library list to function properly. The JDE user profile for table objects

owns all of these objects.

ERP 8.0 System Library	The ONEWORLD user profile owns the ERP 8.0 system library and the *PUBLIC authority is *AUTL, which is OWADMINL. All objects associated with ERP 8.0 server administration are secured with the *AUTL OWADMINL authorization list. All other objects are secured by the *AUTL ONEWORLD. Administrative programs, such as CLRIPC, STRNET, ENDNET, and PORTTEST (among others) are set to adopt the authority of the owner.

The following information provides a summary of the security model when you run multiple instances of ERP 8.0:

Library	Description of Security
Non-Coexistent, Non-System Library	The configurable ERP 8.0 user profile owns the datapath libraries and the object libraries for a particular instance of ERP 8.0. You specify the user profile name in the USRPRF parameter of the SETOWAUT program. The user profile authorization list has the same name as the configurable user profile (USRPRF parameter in the SETOWAUT program). All objects within these libraries are owned by the configurable user profile. These libraries are also owned by the configurable user profile and secured by the AUTL with the same name. The library authority to create objects within the library is set to *ALL (*PUBLIC will have *ALL authority).
Coexistent, Non-System Library	Configurable user profiling is not supported in a coexistence environment.
ERP 8.0 System Library	The configurable ERP 8.0 user profile owns the ERP 8.0 system library for a particular instance of ERP 8.0, and the *PUBLIC authority is *AUTL, which is the administrative authorization list that you specify in the USRAUTL parameter in the SETOWAUT command. All other objects are secured with the configurable user profile authorization list. Administrative programs, such as CLRIPC, STRNET, ENDNET, and PORTTEST (among others) are set to adopt the authority of the owner.

Setting Up AS/400 ERP 8.0 Database Security

You can set up security for a single instance of ERP 8.0, or you can set up security for separate ERP 8.0 instances. In the latter case, the SETOWAUT program creates a user profile and individual authorization lists for each instance, establishing object ownership.

Setting up AS/400 Database Security for a Single ERP 8.0 Instance

You can set up security for a single instance of ERP 8.0. To do so, you enter ONEWORLD as the USRPRF (user profile) parameter value and OWADMINL (admin. authorization list) parameter value.
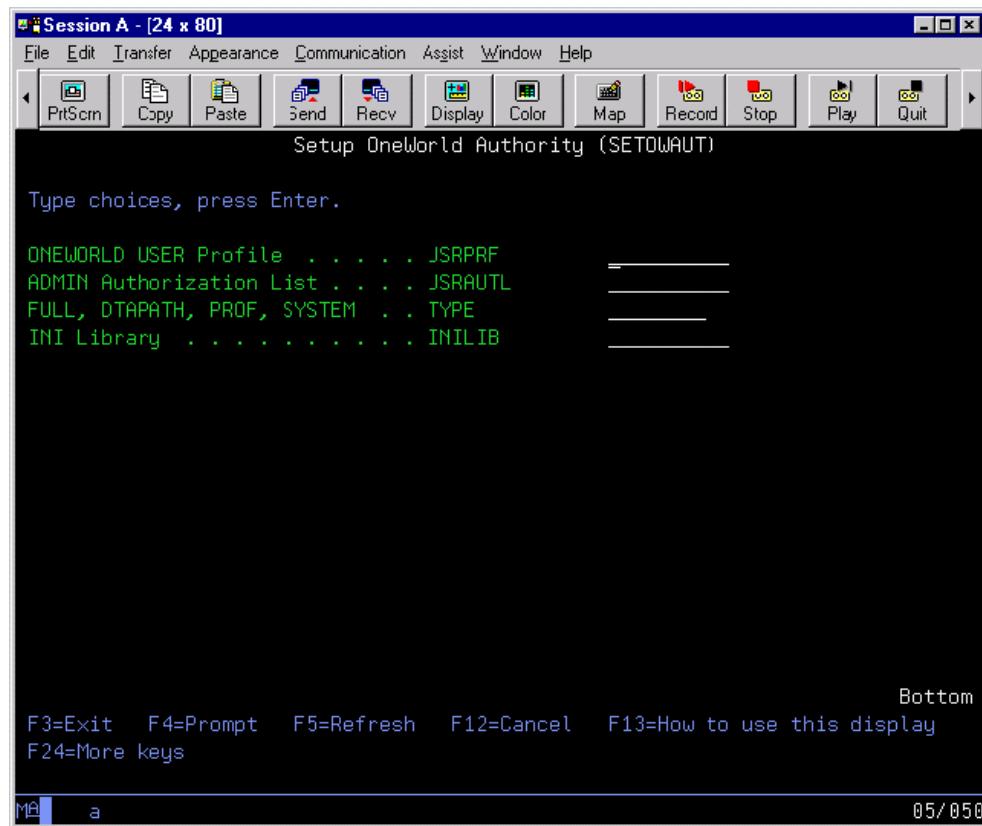
▶ **To set up AS/400 database security for a single ERP 8.0 instance**

1. In the SETOWAUT library, on the command line, type the following command and press F4 and F11:

```
SETOWAUT
```
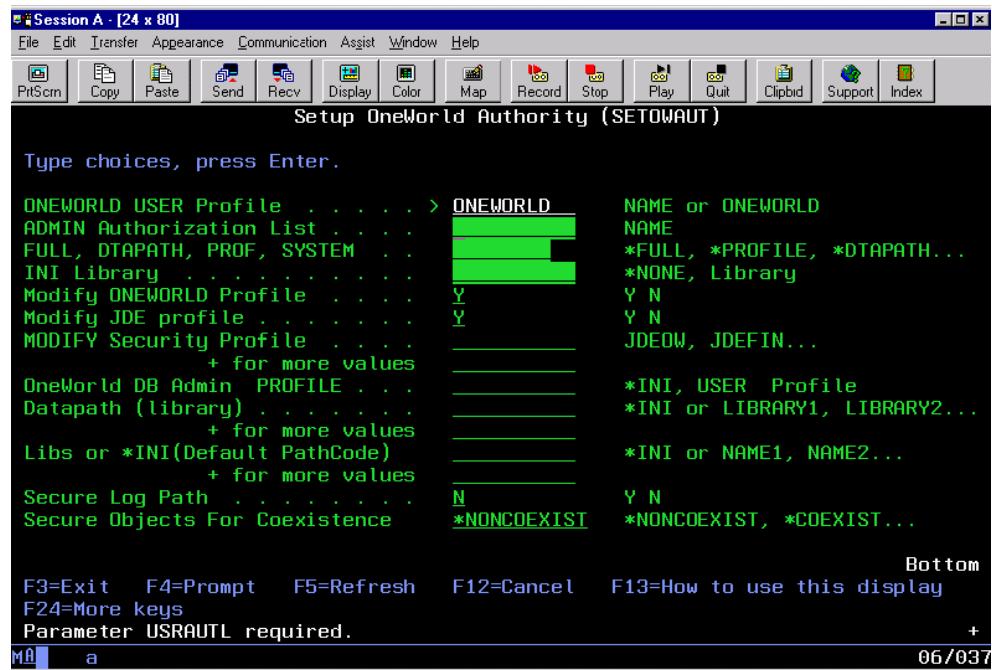
Note: Make sure the SETOWAUT library is in the library list. If it is not, run the ADDLIBLE command.

The Set Up OneWorld Authority (SETOWAUT) form appears.

```
Session A - [24 x 80]                                                    _ □ ✗
File  Edit  Transfer  Appearance  Communication  Assist  Window  Help

  PrtScrn   Copy   Paste   Send   Recv   Display   Color   Map   Record   Stop   Play   Quit

                     Setup OneWorld Authority (SETOWAUT)

  Type choices, press Enter.

  ONEWORLD USER Profile . . . . . . JSRPRF          _____
  ADMIN Authorization List . . . .  JSRAUTL         _____
  FULL, DTAPATH, PROF, SYSTEM . .   TYPE            _____
  INI Library . . . . . . . . . .   INILIB          _____




                                                                        Bottom
  F3=Exit    F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
  F24=More keys

MA   a                                                                  05/050
```

2. In the OneWorld User Profile field (USPRF), type OneWorld and press enter.

    The form expands to reveal additional security parameters. You can determine various security settings, including library access and whether the secured environment is coexistent.

3. Complete the following required fields and press Enter:

- USRAUTL (enter OWADMINL)
- TYPE (FULL, DTAPATH Only, PROF Only, SYSTEM Only)
- INILIB

4. Complete additional fields as necessary and press Enter.

Caution:

Use caution when you lock a library with ERP 8.0 security that contains third-party software. J.D. Edwards does not support AS/400 ERP 8.0 database security with third-party software.

Setting up AS/400 Database Security for Multiple ERP 8.0 Instances

You can set up security for separate instances of ERP 8.0. To do so, you enter a value other than ONEWORLD for the User Profile parameter and a value other than OWADMINL for the Admin. Authorization List parameter. You enter different values for these parameters for each instance of ERP 8.0 that you run.

Before You Begin

❑ Before you enter a value for the USRPRF and USRAUTL parameters, you should make sure that the name is not used for an authorization list for any other instance of ERP 8.0. To do so, run the DSPAUTL command. In the Display Authorization form, you can enter the name you intend to use to make sure that it is unique.

► **To set up AS/400 database security for multiple ERP 8.0 instances**
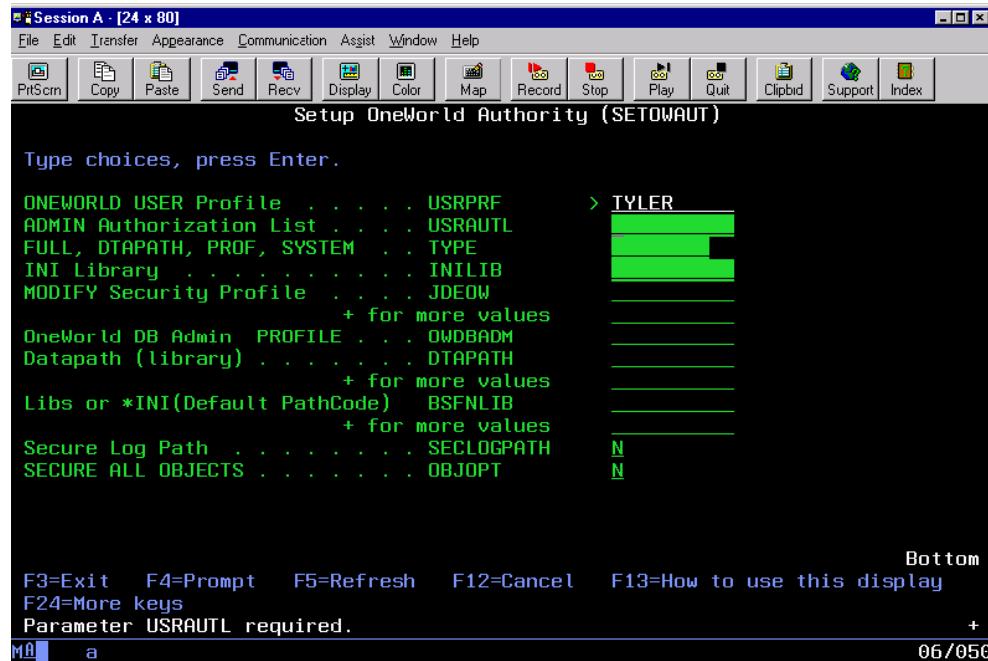
1. In the SETOWAUT library, on the command line, type the following command and press F4:

```
SETOWAUT
```

2. In the OneWorld User Profile field (USPRF), type in a user profile name and press enter.

   The SETOWAUT program uses this name when it creates a user profile authorization list.

   The form expands to reveal additional security parameters. The Modify OneWorld Profile (OWPRF) and Modify JDE Profile (JDEPRF) parameters, which appear when you enter OneWorld as the User Profile parameter value, do not appear when you enter a value other than OneWorld.

3. Complete the following required fields and press Enter:

- USRAUTL (enter a name that will identify the administrative authorization list).

- TYPE (FULL, DTAPATH Only, PROF Only, SYSTEM Only)

- INILIB

4. Complete additional fields as necessary and press Enter.

See *Explanations of AS/400 Database Security Parameters* in this chapter for details on the available options for each field.

Explanations of AS/400 Database Security Parameters

You use the AS/400 database security parameters to modify user and administrator profiles, to secure objects, and so on. These parameters appear in the Setup OneWorld Authority form (SETOWAUT).

Type

Depending on the value you enter in this field, you can implement a full security setup, modify only the security profiles, or modify only the datapaths authority. A full security setup includes the system library, datapath, pathcode, and user profiles.

When to use *FULL:

Use *FULL when you initially implement SETOWAUT. This will direct SETOWAUT to perform all the security routines.

When to use *DTAPATH:

Use *DTAPATH only if you need to secure one or more datapaths.

When to use *PROF:

Use *PROF to perform only the user profile routines. SETOWAUT will use the user profile settings in the command to direct the process.

When to use *SYSTEM:

Use *SYSTEM to perform the "System" library authority functions. *SYSTEM secures the library and all of the objects contained within it with the AUTL OWADMINL if you are running a single instance of ERP 8.0. If you are running multiple instances of ERP 8.0, *SYSTEM will secure the library and all the objects contained within it with the administrative authorization list created by the SETOWAUT program for each individual instance of ERP 8.0.

Additionally, all the *PGM objects with attributes of *CLP, *CLLE, or *CLE will have the program attributes modified for adopt authority. The system library is treated differently in order to allow administration of ERP 8.0.

You can use this parameter to lock other non-system libraries containing objects that you can use to administer ERP 8.0.

More PROFILE work SETOWAUT does using Types *FULL or *PROF

When you enter Type *FULL or *PROF, SETOWAUT:

- Creates the ONEWORLD and OWADMINL authorization lists (if they do not already exist) if you are running a single instance of ERP 8.0. If you are running multiple instances of ERP 8.0, SETOWAUT creates both authorization lists and uses the names you specified for each instance of ERP 8.0.

- Changes owner of both lists to ONEWORLD if you are running a single instance of ERP 8.0. If you are running multiple instances of ERP 8.0, SETOWAUT changes the owner of both lists to the user profile name you specified for each instance of ERP 8.0.

- Adds JDE to both lists if you are running a single instance of ERP 8.0.

- Changes *PUBLIC entry to *EXCLUDE in both lists.

INILIB - (INI Library)

This field identifies the library in which the jde.ini file resides to the security application. The *NONE value allows you to specify that the jde.ini file is either not needed or not available.

Caution:

You cannot use the parameter value *NONE if the Type parameter value is *FULL or *SYSTEM.

When to use a library name if the following are all true:

If there is a ERP 8.0 INI library located on the host system

If the control files (OCM) are located on the host system

If the jde.ini file references the OCM library

What it does:

If Type = *FULL or *SYSTEM, the library and all the objects will be secured with SYSTEM attributes. SETOWAUT will use the jde.ini file to perform all the INI retrievals.

When to use *NONE:

Use *NONE if any of the above requirements are false. This will require actual values in any parameter that allows the value *INI.

DTAPATH Datapath (library)

Note:

If you set the INI library field to *NONE, you must manually set datapaths in this field.

Type *INI in this field to use the datapaths set in the jde.ini file. You can also type specific datapaths in this field. You can type up to 10 datapaths at a time.

When to use *INI:

SETOWAUT will modify each library based upon the ALLOBJECTS parameter.

Use *INI when the INILIB parameter contains the library name where the jde.ini file is located (INILIB value is not *NONE). This parameter tells SETOWAUT to use the jde.ini file to retrieve the datapath libraries. SETOWAUT retrieves the library name from the jde.ini value in `[DB SYSTEM SETTINGS] Library' and uses this setting to access the OCM files (F986101 and F98611). SETOWAUT selects all the library names (F98611.OMLIB) that meet the following criteria: F986101.OMDATP = F98611.OMDATP, OMUGRP = *PUBLIC, OMSTSO = `AV', OMSRVR = *the host name*.

Modify ONEWORLD Profile

A value of Y or N is valid for this field.

Note

This field does not appear if you are setting up authorization for multiple instances of ERP 8.0 and you enter a value other than ONEWORLD in the USRPRF field.

When to use `Y':

Use to modify/create the ONEWORLD profile that has not yet been modified.

- GRPPRF set to *NONE
- SUPGRPPRF set to *NONE
- USRCLS set to *USER
- INLMNU set to *SIGNOFF
- INLPGM set to *NONE
- SPCAUT set to *JOBCTL

Grants authority to change profile ONEWORLD to *USE profile QSECOFR.

Revokes *ALL authority from *PUBLIC.

When to use `N':

Use only if the profile ONEWORLD has the correct attributes.

Modify JDE Profile

A value of Y or N is valid for this field.

Note:

This field does not appear if you are setting up authorization for multiple instances of ERP 8.0 and you enter a value other than ONEWORLD in the USRPRF field.

When to use `Y':

Use to modify/create the JDE profile that has not been modified.

- GRPPRF set to *NONE
- SUPGRPPRF set to *NONE
- USRCLS set to *USER
- INLPGM set to *NONE
- SPCAUT set to *JOBCTL *SAVSYS

Revokes *ALL authority from *PUBLIC.

When to use `N':

Use only if the profile JDE has the correct attributes.

Modify Security Profile

You can enter up to 10 security profiles at a time in this field to modify with the SETOWAUT program. If you enter a security profile that does not already exist, SETOWAUT creates the profile and modifies the profile accordingly.

When to use:

Use to create/modify the profile.

- USRCLS set to *USER
- INLMNU set to *SIGNOFF
- INLPGM set to *NONE
- SPCAUT set to *NONE
- GRPPRF set to ONEWORLD if you are running a single instance of ERP 8.0. If you are running multiple instances of ERP 8.0, GRPPRF is set to the ERP 8.0 User Profile name you entered in the USRPRF parameter field.
- SUPGRPPRF set to JDE if you are running single instance of ERP 8.0. If you are running multiple instances of ERP 8.0, SUPGRPPRF is set to the ERP 8.0 User Profile name you entered in the USRPRF parameter field.

Revokes *ALL authority from *PUBLIC.

Grants profile ONEWORLD *CHANGE authority to security profile.

Grants security profile *CHANGE authority to ONEWORLD.

ERP 8.0 DB Admin Profile

If you type *INI in this field, SETOWAUT retrieves the user and password values from the [SECURITY] section in the jde.ini file. If you type a value in this field that does not exist, SETOWAUT creates a profile with a password that is the same as the profile name. If the profile exists, SETOWAUT modifies the profile to be a ERP 8.0 database administrator.

When to use:

Enter a profile to be used as a database administrator. This profile will have all rights to all ERP 8.0 objects. These database administrator profiles are allowed to perform certain ERP 8.0 processes (RUNUBE and PORTTEST) that an administrator with normal privileges cannot perform.

If the profile does not exist, it creates the profile with a password that is the same name as the profile. Also, if the profile does not exist, set the password to expire (PWDEXP = *YES).

- If BV3C is in library list, SETOWAUT will place this program as the initial program (this program will list all the ERP 8.0 occurrences to allow the user to select one occurrence at signon).
- USRCLS set to *PGMR
- SPCAUT set to *NONE
- GRPPRF set to ONEWORLD if you are running a single instance of ERP 8.0. If you are running multiple instances of ERP 8.0, GRPPRF is set to the ERP 8.0 User Profile name you entered in the USRPRF parameter field.
- SUPGRPPRF set to JDE if you are running a single instance of ERP 8.0. If you are running multiple instances of ERP 8.0, SUPGRPPRF is set to the ERP 8.0 User Profile name you entered in the USRPRF parameter field.

> Revokes *ALL authority from *PUBLIC.

> Grants ONEWORLD *USE rights to DB ADMIN profile.

BSFNLIB (Libs or *INI (Default PathCode))

Important:

If you set the INI library field to *NONE, you must set pathcodes in this field.

Type *INI in this field to use the pathcode library and the associated specification file directory set in the jde.ini file. You can also type specific pathcode libraries in this field. You can type up to 10 pathcodes at a time.

When to use *INI:

Use *INI when the INILIB parameter contains the library name where the jde.ini file is located (INILIB does not contain *NONE). This parameter tells SETOWAUT to use the jde.ini file to retrieve the application pathcode libraries. SETOWAUT retrieves the library name from the jde.ini value in "[DB SYSTEM SETTINGS] Library" and uses this setting to access the OCM files (F986101 and F98611). SETOWAUT will select all the library names (F98611.OMLIB) that meet the following criteria: F986101.OMDATP = F98611.OMDATP, OMUGRP = *PUBLIC, OMSTSO = `AV', OMDBNM = F00942. SETOWAUT will retrieve EMPATHCD (pathcode) from each record in the F00942 for each library (F98611.OMLIB).

For each pathcode, SETOWAUT will modify the library and associated IFS directory (specifies path) accordingly.

Secure Log Path

A value of Y or N is valid for this field. The recommended value is N.

When to use `N':

Use if you do not want to secure JDE log paths.

When to use `Y':

Use `Y' only if there is a need to secure the log paths. One reason to secure JDE log paths might be if logs are being deleted without permission.

Only DB administrators have permission to access the logs in the log path.

Secure Objects for Coexistence

Use this field to secure all objects, coexistence objects, or non-coexistence objects. The parameter appears in the SETOWAUT form only when you set authority for a single instance of ERP 8.0 by entering ONEWORLD in the USRPRF field.

When to use *ALLOBJ:

Use this only if there is a need to secure all the objects contained in a library, directory, or both. If there is a chance of a user getting past the library authority, then it may be necessary to secure all the objects in the library. This option is not recommended due to performance considerations.

Not only will the libraries and root directories have restrictions, but all the objects contained in the libraries/directories will be restricted (*PUBLIC *EXCLUDE).

The LIBCRT attribute will be set to *AUTL.

Datapath libraries and all the objects contained within will have ownership of JDE.

When to use *COEXIST:

Use if you have WorldSoftware installed on the AS/400 and it is sharing datapath(s).

Not only will the datapath libraries have restrictions, but all the objects contained in the datapath libraries will be restricted (*PUBLIC *EXCLUDE).

The LIBCRT attribute will be set to *AUTL.

The datapath libraries and all the objects contained within will have ownership of JDE.

When to use *NONCOEXIST:

Use if you do not have WorldSoftware installed, or if it is installed but not sharing any ERP 8.0 libraries.

Only the libraries or root directories will have restrictions placed on *PUBLIC.

Objects contained in any ERP 8.0 library with the exception of the SYSTEM library will allow *PUBLIC *ALL. The LIBCRT attribute will be set to *ALL.

Datapath libraries will have ownership of JDE.

Pathcode libraries/directories will have ownership of ONEWORLD.

Secure All Objects

Use this field to secure objects in a noncoexistence environment when you are running multiple instances of ERP 8.0. The parameter appears in the SETOWAUT form only when you configure an instance of ERP 8.0 by entering a value other than ONEWORLD in the USRPRF field.

N is the default value for the Secure All Objects parameter, and J.D. Edwards recommends that you use this value. A value of N secures directories but not the files in the directories. Entering N is the equivalent of entering Noncoexist when you are running a single instance of ERP 8.0.

Entering Y secures the files as well as the directories. Entering Y can degrade performance because the system must check authority for every object the user wants to access. Entering Y is the equivalent of entering *ALLOBJECTS when you are running a single instance of ERP 8.0.

Adding Administrators

You can add administrators to the administrative authorization list by running the CRTOWADPRF command. The command also allows you to designate levels of authority to the administrators you are adding to the list.
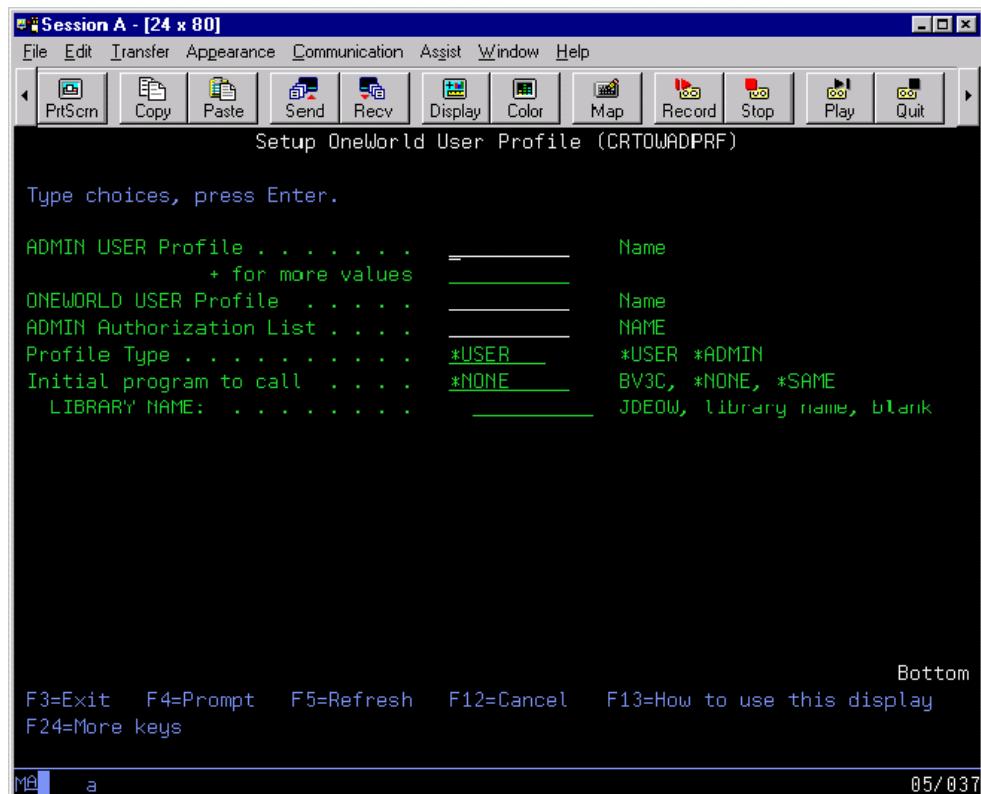
► **To add administrators**

1. On the command line, enter the following command and press F4:

CRTOWADPRF USRPRF

      CRTOWADPRF USRPRF

The Setup OneWorld User Profile (CRTOWADPRF) form appears.

2. Complete the following fields and press Enter:

- ADMIN USER Profile

  Type the name of an administrator you want to add to the administrative authorization list. You can add up to 10 administrators at a time.

- ONEWORLD USER Profile

  Your entry must match the ERP 8.0 user profile name that you entered during setup (USRPRF parameter).

- ADMIN Authorization List

  Your entry must match the Admin. Authorization List name that you entered during setup (USRAUTL parameter).

- Profile Type

  Type *USER to grant the profiles with basic administration capabilities, such as STRNET, ENDNET, CLRIPC, SAW, CLRLCK, DSPIPC, DSPSTMF, IPCS, LINKBSFN, and PID2JOB.

  Type *ADMIN if the profiles need rights to PORTTEST and RUNUBE as well as the basic administration capabilities.

- Initial program to call

  Type BV3C if you want the system to display a list of environments when the administrators sign on to ERP 8.0, *SAME to use the current initial program setting, or *NONE to remove the initial program setting.

  Note:

  The initial program to call is BV3C by default for ERP 8.0. This program sets the AS/400 to provide a choice of environments at signon. A user with an administrator profile who signs on to an environment can then perform ERP 8.0 commands on the AS/400 server.

Removing Administrative Authority from User Profiles

To remove a user's administrative authority, you run the RMVOWADPRF command and complete the Remove OW Profile Authority form.

► **To remove administrative authority from user profiles**
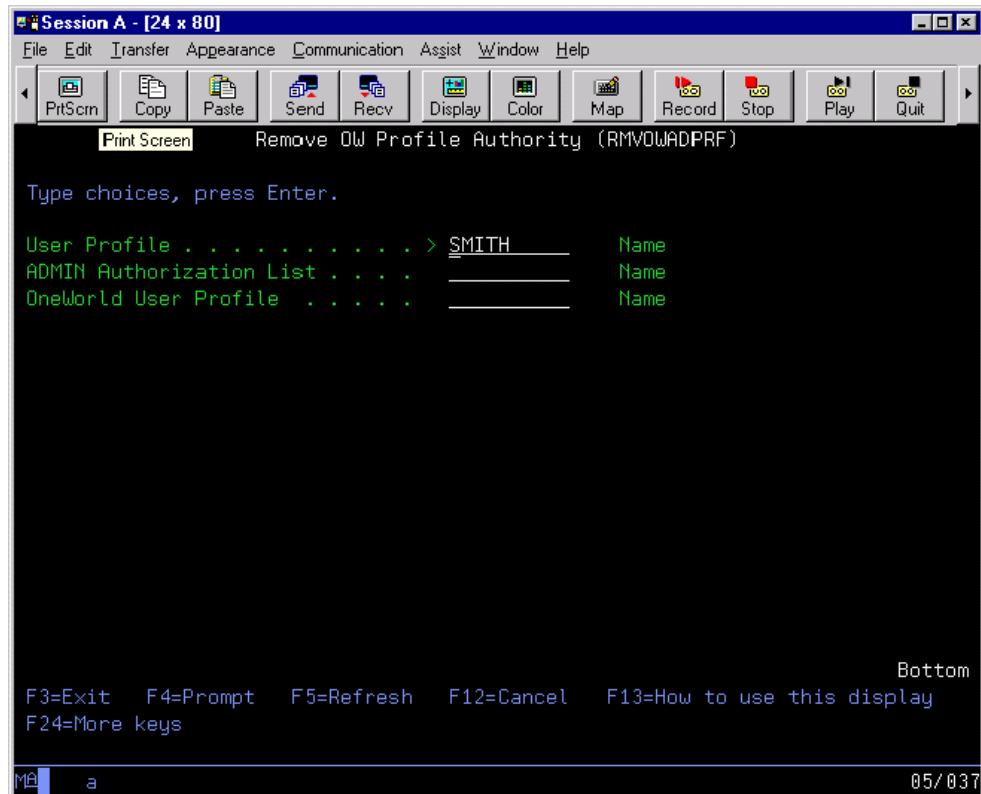
Note:

Submit this command to a batch subsystem.

1. On the command line, enter the following command and press F4:

```
RMVOWADPRF
```

The Remove OW Profile Authority (RMVOWADPRF) form appears.

2. Complete the following fields and press Enter:

- User Profile

  Enter the name of the user from whom you want to remove authority.

- Admin. Authorization List

  Your entry must match the Admin. Authorization List name that you entered during setup (USRAUTL parameter).

- ERP 8.0 User Profile

  Your entry must match the ERP 8.0 user profile name that you entered during setup (USRPRF parameter).

Sample Results for SETOWAUT (Non-Coexistence)

You can expect the following examples for each of the various commands. Using Client Access, sign onto the AS/400, type each command on the command line, and press F4. For libraries (data sources and pathcodes), the required parameters are object type (*LIB) and the name of the library.

Note that if you set up multiple instances of ERP 8.0, the owner for each instance is the ERP 8.0 user profile you entered in the ERP 8.0 User Profile parameter during the authority setup. If you set up a single instance of ERP 8.0, the owner is JDE or ONEWORLD.

Similarly, if you set up multiple instances of ERP 8.0 and you display object authority, the value displayed is the name of the user profile for all objects except the SYSTEM library. The

object authority for the SYSTEM library when you run multiple instances of ERP 8.0 is the name of the Admin. Authorization List. If you set up a single instance of ERP 8.0, all objects are secured by the ONEWORLD authorization list, except the SYSTEM library, which is secured by the OWADMINL authorization list.

Data source DSPOBJAUT:

```
Session A - [24 x 80]
File  Edit  Transfer  Appearance  Communication  Assist  Window  Help

 PrtScrn   Copy   Paste   Send   Recv   Display   Color   Map   Record   Stop   Play   Quit

                            Display Object Authority

Object . . . . . . . :   DEMO73          Owner  . . . . . . . :   RAFIK
  Library  . . . . . :     QSYS          Primary group  . . . :   *NONE
Object type  . . . . :   *LIB

Object secured by authorization list  . . . . . . . . . . . :   RAFIK


                          Object
User        Group       Authority
*PUBLIC                  *AUTL




                                                               Bottom
Press Enter to continue.

F3=Exit   F11=Display detail object authorities   F12=Cancel
F14=Display authorization list   F17=Top          F18=Bottom

MA     a                                                      01/001
```

Pathcode DSPOBJAUT:

42

Data source DSPLIBD:

```
Session A - [24 x 80]
File  Edit  Transfer  Appearance  Communication  Assist  Window  Help

PrtScrn  Copy  Paste  Send  Recv  Display  Color  Map  Record  Stop  Play  Quit

                         Display Library Description

Library  . . . . . . . . . . . . . . . . . :   DEMO73

Type . . . . . . . . . . . . . . . . . . . :   PROD
ASP of library . . . . . . . . . . . . . . :   1
Create authority . . . . . . . . . . . . . :   RAFIK
Create object auditing . . . . . . . . . . :   *SYSVAL
Text description . . . . . . . . . . . . . :   Work library for data conversion




                                                                     Bottom
Press Enter to continue.

F3=Exit    F12=Cancel
(C) COPYRIGHT IBM CORP. 1980, 1999.
MA       a                                                           01/001
```

Pathcode DISLIBD:

```
Session A - [24 x 80]                                    _□×
File  Edit  Transfer  Appearance  Communication  Assist  Window  Help
┌──────┬──────┬──────┬──────┬──────┬──────┬──────┬──────┬──────┬──────┬──────┬──────┐
│PrtScrn│ Copy │Paste │ Send │ Recv │Display│Color │ Map  │Record│ Stop │ Play │ Quit │
└──────┴──────┴──────┴──────┴──────┴──────┴──────┴──────┴──────┴──────┴──────┴──────┘
                       Display Library Description

  Library  . . . . . . . . . . . . . . . . . . . :   APPL_PGF_T

  Type . . . . . . . . . . . . . . . . . . . . :   PROD
  ASP of library . . . . . . . . . . . . . . :   1
  Create authority . . . . . . . . . . . . . :   RAFIK
  Create object auditing . . . . . . . . . . :   *SYSVAL
  Text description . . . . . . . . . . . . . :




                                                              Bottom
  Press Enter to continue.


  F3=Exit   F12=Cancel
  (C) COPYRIGHT IBM CORP. 1980, 1999.
MA      a              MW                               01/001
```

Note:

Authority for objects in data sources and pathcodes should remain the same after you run SETOWAUT. You can see this by displaying the authority for an object in each library before and after you run SETOWAUT. The forms should be identical. The required parameters are object name, object type (*FILE or *PGM), and the library name where the object resides.

The following illustration is an example. Your test results might not look exactly the same.

Note:

Remember that owner, object security, and authority creation will differ depending on whether you are running a single instance of ERP 8.0 or multiple instances.

```
Display Object Authority

Object . . . . . . . :  F9202          Owner . . . . . . . :  ONEWORLD
Library . . . . . :    DEMO73OCM    Primary group . . . :  *NONE
Object type . . . . :  *FILE

Object secured by authorization list . . . . . . . . . . . :  *NONE

                    Object
User      Group     Authority
ONEWORLD            *ALL
*PUBLIC             *ALL
```

SETOWAUT changes the authority on system libraries. You can view this for both DSPOBJAUT and DSPLIBD on system libraries. The shaded information in the following illustrations should correspond to the information that appears on your form. The required parameters are the object name, object type (*PGM), and the name of the library where these objects reside.

System library DSPOBJAUT:

```
Display Object Authority

Object . . . . . . . :   B733SYS          Owner . . . . . . . . :   ONEWORLD
  Library . . . . . :     QSYS           Primary group . . . :   *NONE
Object type . . . . :   *LIB

Object secured by authorization list  . . . . . . . . . . . . :  OWADMINL

                         Object
User          Group      Authority
*PUBLIC                  *AUTL
```

System library DSPLIBD:

```
Display Library Description

Library . . . . . . . . . . . . . . . . :    B733SYS

Type . . . . . . . . . . . . . . . . . . :    PROD
ASP of library . . . . . . . . . . . . . :    1
Create authority . . . . . . . . . . . . :    ONEWORLD
Create object auditing . . . . . . . . . :    *SYSVAL
Text description . . . . . . . . . . . . :
```

The authority will change for objects within system libraries that either contain the attributes CLLE or CLP or that share the same name. You can view the authority on these objects using the following commands. The required parameters are object name, object type (*PGM or *CMD), and the name of the library where these objects reside.

Sample Results for SETOWAUT (Coexistence)

When you run SETOWAUT for a coexistence environment, the authorities will be different. You need to verify these authorities.

The shaded information in the following illustrations represents the information you need to verify for authority. The required parameters are object name and object type (*LIB).

Note:

Remember that you cannot run multiple instances of ERP 8.0 in a coexistence environment.

Data source DSPOBJAUT:

```
Display Object Authority

 Object . . . . . . . :    DEMO73         Owner  . . . . . . . :    JDE
   Library  . . . . . :     QSYS          Primary group . . . :    *NONE
 Object type  . . . . :    *LIB

 Object secured by authorization list  . . . . . . . . . . . . :   ONEWORLD


                             Object
 User           Group       Authority
 JDEGRP                     *USE    ( Note: Only present in a Co-Existent Environment.)
 *PUBLIC                    *AUTL
```

Data source DSPLIBD:

```
Display Library Description

 Library . . . . . . . . . . . . . . . :    DEMO73

 Type . . . . . . . . . . . . . . . . . :    PROD
 ASP of library . . . . . . . . . . . . :  1
 Create authority . . . . . . . . . . . :    *AUTL
 Create object auditing . . . . . . . . :  *SYSVAL
 Text description . . . . . . . . . . . :
```

Pathcodes DSPOBJAUT:

```
Display Object Authority

 Object . . . . . . . :    APPL_PGF_1       Owner  . . . . . . . :    ONEWORLD
   Library  . . . . . :     QSYS            Primary group . . . :    *NONE
 Object type  . . . . :    *LIB

 Object secured by authorization list  . . . . . . . . . . . . :  ONEWORLD


                             Object
 User           Group       Authority
 *PUBLIC                    *AUTL
```

Pathcodes DSPLIBD:

```
Display Library Description

Library . . . . . . . . . . . . . . . . :      APPL_PGF_1

Type . . . . . . . . . . . . . . . . . . . :      PROD
ASP of library . . . . . . . . . . . . . . :  1
Create authority . . . . . . . . . . . . . :  *ONEWORLD
Create object auditing . . . . . . . . . . :  *SYSVAL
Text description . . . . . . . . . . . . . :
```

When you run SETOWAUT on a coexistence environment, the system modifies the authority for objects in data sources and pathcodes. You can view this by displaying the authority for an object in each library before and after you run SETOWAUT. The required parameters are object name, object type (*FILE, *PGM, or *CMD), and the library name where the objects reside.

Note:

The owners for data source objects differ from the owners for pathcode objects.

The following illustrations provide examples of these modifications.

DSPOBJAUT (objects in data sources):

```
Display Object Authority

Object . . . . . . . :  F9202           Owner . . . . . . . :  JDE
Library . . . . . :   DEMO73OCM    Primary group . . . :  *NONE
Object type . . . . :  *FILE

Object secured by authorization list . . . . . . . . . . . . :  ONEWORLD

              Object
User          Group      Authority
*PUBLIC                  *USER
```

DSPOBJAUT (objects in pathcodes):

```
Display Object Authority

Object . . . . . . . :  F9202           Owner . . . . . . :  ONEWORLD
Library . . . . . :   DEMO73OCM    Primary group . . . :  *NONE
Object type . . . . :  *FILE

Object secured by authorization list . . . . . . . . . . . . :  ONEWORLD

              Object
User          Group      Authority
 *PUBLIC                 *AUTL
```

Use the following commands to display the authority on system libraries. The required parameters are object name and object type (*LIB).

System library DSPOBJAUT:

```
Display Object Authority

 Object . . . . . . . :   B733SYS          Owner  . . . . . . . :    ONEWORLD
   Library  . . . . . :    QSYS            Primary group  . . . :    *NONE
 Object type  . . . . :   *LIB

 Object secured by authorization list  . . . . . . . . . . . . : OWADMINL


                         Object
 User        Group      Authority
 *PUBLIC                *AUTL
```

System library DSPLIBD:

```
Display Library Description

 Library . . . . . . . . . . . . . . . . . :    B733SYS

 Type . . . . . . . . . . . . . . . . . . . :    PROD
 ASP of library . . . . . . . . . . . . . . :    1
 Create authority . . . . . . . . . . . . . :    ONEWORLD
 Create object auditing . . . . . . . . . . :    *SYSVAL
 Text description . . . . . . . . . . . . . :
```

The authority for objects in system libraries will be different. You need to verify the authority of objects that contain the CLLE or CLP attributes and objects that share the same name for the program and the command. You need to move these programs and commands to an outfile.

Use the following commands to view the authority on these objects. The required parameters are object name, object type (*FILE, *PGM, or *CMD), and the name of the library where the objects reside.

DSPOBJAUT:

```
Display Object Authority

 Object . . . . . . . : UNPAK        Owner . . . . . . . : ONEWORLD
   Library . . . . . : B733SYS        Primary group . . . : *NONE
 Object type . . . . : *PGM

 Object secured by authorization list . . . . . . . . . . . . : OWADMINL


             Object
 User        Group          Authority

 *PUBLIC                    *AUTL
```

DSPPGM:

```
Program  . . . . . . . . :     object          Library  . . . . . . . . :    B733SYS_1
Owner  . . . . . . . . . :     ONEWORLD
Program attribute  . . . :     CLP

Program creation information:
  Program creation date/time . . . . . . . . . . . :     04.29.99  16:00:53
  Type of program  . . . . . . . . . . . . . . . . :     OPM
  Source file  . . . . . . . . . . . . . . . . . . :     QCLSRC
    Library  . . . . . . . . . . . . . . . . . . . :       OWB733_1
  Source member  . . . . . . . . . . . . . . . . . :     object
  Source file change date/time . . . . . . . . . . :     04.29.99  14:16:01
  Observable information . . . . . . . . . . . . . :     *ALL
  User profile . . . . . . . . . . . . . . . . . . :     *OWNER
  Use adopted authority  . . . . . . . . . . . . . :     *YES
  Log commands (CL program)  . . . . . . . . . . . :     *JOB
  Allow RTVCLSRC (CL program)  . . . . . . . . . . :     *YES
  Fix decimal data . . . . . . . . . . . . . . . . :     *NO
```

Displaying User Profile Information

After you run SETOWAUT, you can view the following user profiles and authorization lists to verify that the information is correct. Compare the shaded information in the following illustrations for accuracy.

► **To display user profile information**

1. On the command line, enter the following command:

```
DSPUSRPRF
```

The Display User Profile (DSPUSRPRF) form appears.

2. Type the name of a user profile in the User Profile field and press Enter.

Information similar to the following appears:

```
User profile . . . . . . . . . . . . . . . . . :      ONEWORLD

  Previous sign-on . . . . . . . . . . . . . :      02.18.99  15:47:28
  Sign-on attempts not valid . . . . . . . . :      0
  Status . . . . . . . . . . . . . . . . . . :      *ENABLED
  Date password last changed . . . . . . . . :      02.18.99
  Password expiration interval . . . . . . . :      *NOMAX
  Set password to expired  . . . . . . . . . :      *NO
  User class . . . . . . . . . . . . . . . . :      *USER
  Special authority  . . . . . . . . . . . . :      *JOBCTL
  Group profile  . . . . . . . . . . . . . . :      *NONE
  Owner  . . . . . . . . . . . . . . . . . . :      *USRPRF
  Group authority  . . . . . . . . . . . . . :      *NONE
  Group authority type . . . . . . . . . . . :      *PRIVATE
  Supplemental groups  . . . . . . . . . . . :      *NONE
  Assistance level . . . . . . . . . . . . . :      *SYSVAL
  Current library  . . . . . . . . . . . . . :      *CRTDFT
  Initial program  . . . . . . . . . . . . . :      *NONE
    Library  . . . . . . . . . . . . . . . . :
  Initial menu . . . . . . . . . . . . . . . :      *SIGNOFF
    Library  . . . . . . . . . . . . . . . . :
  Limit capabilities . . . . . . . . . . . . :      *NO
  Text . . . . . . . . . . . . . . . . . . . :
  Display sign-on information . . . . . . . . :      *SYSVAL
  Limit device sessions  . . . . . . . . . . :      *SYSVAL
  Keyboard buffering . . . . . . . . . . . . :      *SYSVAL
  Maximum storage allowed  . . . . . . . . . :      *NOMAX
    Storage used . . . . . . . . . . . . . . :        6948244
  Highest scheduling priority  . . . . . . . :      3
  Job description  . . . . . . . . . . . . . :      ONEWORLD
    Library  . . . . . . . . . . . . . . . . :        QGPL
  Accounting code  . . . . . . . . . . . . . :
  Message queue  . . . . . . . . . . . . . . :      ONEWORLD
    Library  . . . . . . . . . . . . . . . . :        QUSRSYS
  Message queue delivery . . . . . . . . . . :      *NOTIFY
  Message queue severity . . . . . . . . . . :      00
  Output queue . . . . . . . . . . . . . . . :      *WRKSTN
    Library  . . . . . . . . . . . . . . . . :
  Printer device . . . . . . . . . . . . . . :      *WRKSTN
  Special environment  . . . . . . . . . . . :      *SYSVAL
  Attention program  . . . . . . . . . . . . :      *SYSVAL
    Library  . . . . . . . . . . . . . . . . :
  Sort sequence  . . . . . . . . . . . . . . :      *SYSVAL
    Library  . . . . . . . . . . . . . . . . :
  Language identifier  . . . . . . . . . . . :      *SYSVAL
  Country identifier . . . . . . . . . . . . :      *SYSVAL
  Coded character set identifier . . . . . . :      *SYSVAL
  Character identifier control . . . . . . . :      *SYSVAL
  Locale job attributes  . . . . . . . . . . :      *SYSVAL
-----------------------------------------------------------------------------------------
```

```
User profile . . . . . . . . . . . . . . . :    JDE

Previous sign-on . . . . . . . . . . . . . :    05.11.99  16:07:08
Sign-on attempts not valid . . . . . . . . :    0
Status . . . . . . . . . . . . . . . . . . :    *ENABLED
Date password last changed . . . . . . . . :    03.23.98
Password expiration interval . . . . . . . :    *NOMAX
Set password to expired  . . . . . . . . . :    *NO
User class . . . . . . . . . . . . . . . . :    *USER
Special authority  . . . . . . . . . . . . :    *JOBCTL
                                                *SAVSYS
Group profile  . . . . . . . . . . . . . . :    *NONE
Owner  . . . . . . . . . . . . . . . . . . :    *USRPRF
Group authority  . . . . . . . . . . . . . :    *NONE
Group authority type . . . . . . . . . . . :    *PRIVATE
Supplemental groups  . . . . . . . . . . . :    *NONE
Assistance level . . . . . . . . . . . . . :    *SYSVAL
Current library  . . . . . . . . . . . . . :    *CRTDFT
Initial program  . . . . . . . . . . . . . :    J98INIT
   Library . . . . . . . . . . . . . . . . :      JDFOBJ7R2
Initial menu . . . . . . . . . . . . . . . :    MAIN
   Library . . . . . . . . . . . . . . . . :      *LIBL
Limit capabilities . . . . . . . . . . . . :    *NO
Text . . . . . . . . . . . . . . . . . . . :    J.D. Edwards System Profile
Display sign-on information  . . . . . . . :    *SYSVAL
Limit device sessions  . . . . . . . . . . :    *SYSVAL
Keyboard buffering . . . . . . . . . . . . :    *SYSVAL
Maximum storage allowed  . . . . . . . . . :    *NOMAX
   Storage used . . . . . . . . . . . . . . :      16019440
Highest scheduling priority  . . . . . . . :    3
Job description  . . . . . . . . . . . . . :    JDE
   Library . . . . . . . . . . . . . . . . :      QGPL
Accounting code  . . . . . . . . . . . . . :
Message queue  . . . . . . . . . . . . . . -    JDE
   Library . . . . . . . . . . . . . . . . :      QUSRSYS
Message queue delivery . . . . . . . . . . :    *NOTIFY
Message queue severity . . . . . . . . . . :    00
Output queue . . . . . . . . . . . . . . . :    *DEV
   Library . . . . . . . . . . . . . . . . :
Printer device . . . . . . . . . . . . . . :    *WRKSTN
Special environment  . . . . . . . . . . . :    *SYSVAL
Attention program  . . . . . . . . . . . . :    *SYSVAL
   Library . . . . . . . . . . . . . . . . :
Sort sequence  . . . . . . . . . . . . . . :    *SYSVAL
   Library . . . . . . . . . . . . . . . . :
Language identifier  . . . . . . . . . . . :    *SYSVAL
Country identifier . . . . . . . . . . . . :    *SYSVAL
Coded character set identifier . . . . . . :    *SYSVAL
Character identifier control . . . . . . . :    *SYSVAL
Locale job attributes  . . . . . . . . . . :    *SYSVAL
-------------------------------------------------------------------------------
```

```
User profile  . . . . . . . . . . . . . . . . :      JDEOW

Previous sign-on . . . . . . . . . . . . . :      05.11.99   16:05:11
Sign-on attempts not valid . . . . . . . . :      0
Status . . . . . . . . . . . . . . . . . . :      *ENABLED
Date password last changed . . . . . . . . :      01.11.99
Password expiration interval . . . . . . . :      *NOMAX
Set password to expired  . . . . . . . . . :      *NO
User class . . . . . . . . . . . . . . . . :      *USER
Special authority  . . . . . . . . . . . . :      *NONE
Group profile  . . . . . . . . . . . . . . :      ONEWORLD
Owner  . . . . . . . . . . . . . . . . . . :      *GRPPRF
Group authority  . . . . . . . . . . . . . :      *NONE
Group authority type . . . . . . . . . . . :      *PRIVATE
Supplemental groups  . . . . . . . . . . . :      JDE
Assistance level . . . . . . . . . . . . . :      *SYSVAL
Current library  . . . . . . . . . . . . . :      *CRTDFT
Initial program  . . . . . . . . . . . . . :      *NONE
  Library  . . . . . . . . . . . . . . . . :
Initial menu . . . . . . . . . . . . . . . :      *SIGNOFF
  Library  . . . . . . . . . . . . . . . . :
Limit capabilities . . . . . . . . . . . . :      *NO
Text . . . . . . . . . . . . . . . . . . . :      OneWorld
Display sign-on information  . . . . . . . :      *SYSVAL
Limit device sessions  . . . . . . . . . . :      *SYSVAL
Keyboard buffering . . . . . . . . . . . . :      *SYSVAL
Maximum storage allowed  . . . . . . . . . :      *NOMAX
  Storage used . . . . . . . . . . . . . . :      2896
Highest scheduling priority  . . . . . . . :      3
Job description  . . . . . . . . . . . . . :      QDFTJOBD
  Library  . . . . . . . . . . . . . . . . :        QGPL
Accounting code  . . . . . . . . . . . . . :
Message queue  . . . . . . . . . . . . . . :      JDEOW
  Library  . . . . . . . . . . . . . . . . :        QUSRSYS
Message queue delivery . . . . . . . . . . :      *NOTIFY
Message queue severity . . . . . . . . . . :      00
Output queue . . . . . . . . . . . . . . . :      *WRKSTN
  Library  . . . . . . . . . . . . . . . . :
Printer device . . . . . . . . . . . . . . :      *WRKSTN
Special environment  . . . . . . . . . . . :      *SYSVAL
Attention program  . . . . . . . . . . . . :      *SYSVAL
  Library  . . . . . . . . . . . . . . . . :
Sort sequence  . . . . . . . . . . . . . . :      *SYSVAL
  Library  . . . . . . . . . . . . . . . . :
Language identifier  . . . . . . . . . . . :      *SYSVAL
Country identifier . . . . . . . . . . . . :      *SYSVAL
Coded character set identifier . . . . . . :      *SYSVAL
Character identifier control . . . . . . . :      *SYSVAL
Locale job attributes  . . . . . . . . . . :      *SYSVAL
-------------------------------------------------------------------------------
```

```
User profile . . . . . . . . . . . . . . . :   OWDBADM

Previous sign-on . . . . . . . . . . . . . :   05.11.99  11:58:08
Sign-on attempts not valid . . . . . . . . :   0
Status . . . . . . . . . . . . . . . . . . :   *ENABLED
Date password last changed . . . . . . . . :   05.11.99
Password expiration interval . . . . . . . :   *SYSVAL
   Date password expires  . . . . . . . . . :     07.10.99
Set password to expired  . . . . . . . . . :   *NO
User class . . . . . . . . . . . . . . . . :   *PGMR
Special authority . . . . . . . . . . . . :   *NONE
Group profile . . . . . . . . . . . . . . :   ONEWORLD
Owner  . . . . . . . . . . . . . . . . . . :   *GRPPRF
Group authority . . . . . . . . . . . . . :   *NONE
Group authority type . . . . . . . . . . . :   *PRIVATE
Supplemental groups  . . . . . . . . . . . :   JDE
Assistance level . . . . . . . . . . . . . :   *SYSVAL
Current library  . . . . . . . . . . . . . :   *CRTDFT
Initial program  . . . . . . . . . . . . . :   *NONE
   Library . . . . . . . . . . . . . . . . :
Initial menu . . . . . . . . . . . . . . . :   MAIN
   Library . . . . . . . . . . . . . . . . :     *LIBL
Limit capabilities . . . . . . . . . . . . :   *NO
Text . . . . . . . . . . . . . . . . . . . :

Display sign-on information  . . . . . . . :   *SYSVAL
Limit device sessions  . . . . . . . . . . :   *SYSVAL
Keyboard buffering . . . . . . . . . . . . :   *SYSVAL
Maximum storage allowed  . . . . . . . . . :   *NOMAX
   Storage used . . . . . . . . . . . . . . :   0
Highest scheduling priority  . . . . . . . :   3
Job description  . . . . . . . . . . . . . :   QDFTJOBD
   Library . . . . . . . . . . . . . . . . :     QGPL
Accounting code                            :
Message queue  . . . . . . . . . . . . . . :   OWDBADM
   Library . . . . . . . . . . . . . . . . :     QUSRSYS
Message queue delivery . . . . . . . . . . :   *NOTIFY
Message queue severity . . . . . . . . . . :   00
Output queue . . . . . . . . . . . . . . . :   *WRKSTN
   Library . . . . . . . . . . . . . . . . :
Printer device . . . . . . . . . . . . . . :   *WRKSTN
Special environment  . . . . . . . . . . . :   *SYSVAL
Attention program  . . . . . . . . . . . . :   *SYSVAL
   Library . . . . . . . . . . . . . . . . :
Sort sequence  . . . . . . . . . . . . . . :   *SYSVAL
   Library . . . . . . . . . . . . . . . . :
Language identifier  . . . . . . . . . . . :   *SYSVAL
Country identifier . . . . . . . . . . . . :   *SYSVAL
Coded character set identifier . . . . . . :   *SYSVAL
Character identifier control . . . . . . . :   *SYSVAL
Locale job attributes  . . . . . . . . . . :   *SYSVAL
```

Sample Results for Authorization Lists

Use the following commands to view the authorization list authorities. The name of the list is the only necessary parameter.

DSPAUTL

```
Object . . . . . . . :   ONEWORLD      Owner  . . . . . . . . :   ONEWORLD
   Library  . . . . . :   QSYS         Primary group  . . . :   *NONE


             Object    List
User         Authority Mgt
ONEWORLD     *ALL      X
JDE          *ALL
*PUBLIC      *EXCLUDE
```

```
Object . . . . . . . :    OWADMINL      Owner . . . . . . . . :    ONEWORLD
   Library . . . . . :      QSYS          Primary group . . . :   *NONE

              Object    List
 User        Authority  Mgt
 ONEWORLD    *ALL       X
 OWDBADM     *USE
 *PUBLIC     *EXCLUDE
```

IFS directories (specification files)

WRKLNK - option 9 Work with authority

```
Object . . . . . . . . . . . . . :    /APPL_PGF_1
Owner . . . . . . . . . . . . . :    ONEWORLD
Primary group . . . . . . . . . :    *NONE
Authorization list . . . . . . . :    ONEWORLD

Data     --Object Authorities--
Opt  User         Authority  Exist   Mgt   Alter   Ref

     *PUBLIC      *AUTL
     ONEWORLD     *RWX           X     X      X      X
-------------------------------------------------------------------------------------
If secure all objects = 'Y'

Object . . . . . . . . . . . . . :    /APPL_PGF_1/asvrdt1.ddb
Owner . . . . . . . . . . . . . :    ONEWORLD
Primary group . . . . . . . . . :    *NONE
Authorization list . . . . . . . :    ONEWORLD

Data     --Object Authorities--
Opt  User         Authority  Exist   Mgt   Alter   Ref

     *PUBLIC      *AUTL
     ONEWORLD     *RW            X     X      X      X
```

Important:

This folder should be inaccessible through Windows Explorer.

Server Administration - UNIX

J.D. Edwards supports ERP 8.0 enterprise servers for UNIX operating systems on the Hewlett-Packard HP 9000 (HP-UX), the IBM RS/6000 (AIX), and the Sun Microsystems Solaris platforms. You can operate the enterprise server for UNIX in a logic or database server environment. You need to perform certain administration procedures on your enterprise server to ensure that ERP 8.0 will run properly.
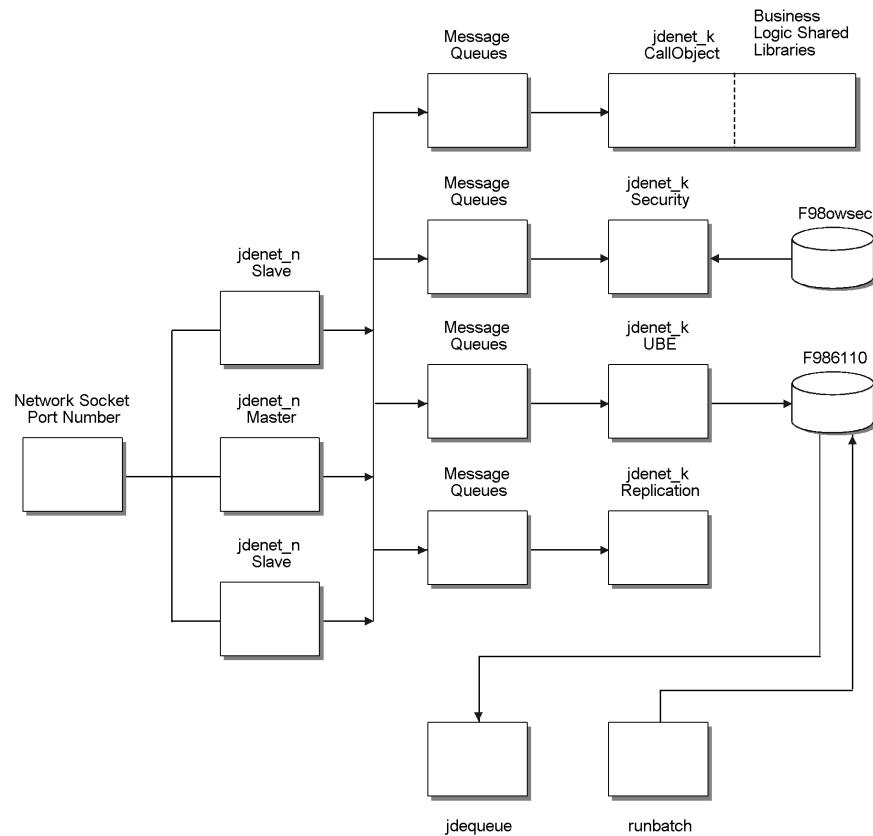
ERP 8.0 Directory Structure for UNIX

The following is a list of directories that are shipped on the UNIX ERP 8.0 Server Installation CD. They should be installed under the ERP 8.0 base directory (for example, /u01/jdedwardsoneworld/b7334). Indented names indicate subdirectories of the unindented directories.

Directory Name	Description
pathcode	This is the main directory for the business function shared libraries, C header files, object files, source files, and specification ("spec" or "TAM") files. Upon installation, this directory will be copied to the proper path codes (for example, PRODB7334 and DEVB7334). bin32 - Business function shared libraries. spec - Specification files. These binary data files are in a J.D. Edwards proprietary format.
system	This is the main directory for the system-level executables, shared libraries, C header files, libraries, and localization files. - bin32 - System-level executables and shared libraries. - include - System-level C header files. - includev - System-level C header files provided by third-party vendors (for example, Vertex). - lib - System-level shared libraries and export files. - libv32 - System-level shared libraries provided by third-party vendors.
ini	The JDE.INI is located here.
PrintQueue	All .PDF file outputs for reports are written here.
log	The jde_xxx.log and jdedbug_xxx.log files are written here.
packages	This is the server package installation base directory. Directories exist here only if a package has been installed. Under the package directory are subdirectories named for each package that has been installed. Located under each package are the following directories: - bin32 - Business function shared libraries. - include - Business function header files. - obj - Business function object files. These are divided among lower level subdirectories that correspond to each shared library in the bin32 directory. - source - Business function source files. These are divided among lower level subdirectories that correspond to each shared library in the bin32 directory. - spec - Specification files. These binary data files are in a J.D. Edwards proprietary format.

ERP 8.0 Architecture and Process Flow for UNIX

The following host server processes perform the indicated actions.

The process flow is explained below:

6. The master jdenet_n process spawns the slave jdenet_n and jdenet_k processes at startup, or as they are needed. The definitions for the number of processes to start and what type to start are stored in the JDE.INI file.

7. The jdequeue process spawns the runbatch process whenever a relevant UBE job request has been placed in the F986110 table. The runbatch lives long enough to complete the job and update the F986110 table. Then runbatch quits. The jdequeue process stays running until stopped by the system administrator.

8. Although not shown in the graphic above, nearly all jdenet_k processes access various other database tables as needed. The runbatch process, for instance, will access and modify any database table relevant to the particular UBE it is running.

9. The Message Queues are UNIX IPC resources. They are allocated by the jdenet_n processes by calls to the UNIX operating system. While ERP 8.0 is running, operating system information concerning the message queues can be obtained by using the UNIX command ipcs.

When message packets are routed to the jdenet_n job from a client or another server, the jdenet_n process places them in the appropriate message queue according to the type of packet (for example, UBE, CallObject, security, and so on).

Each message queue has a UNIX identifier (IPC key) so that multiple processes can access them. The identifiers are determined by ERP 8.0 using the key startIPCKeyValue in the JDE.INI file.

jdenet_n Operation

The jdenet_n process is usually started by running the supplied ERP 8.0 startup script, RunOneWorld.sh. It is then responsible for starting up all other processes shown except for jdequeue processes.

The jdenet_n process listens to the socket as specified in the JDE.INI file by the keywords ServiceNameListen and ServiceNameConnect. These two keywords should be set to the same number. This number should be set the same for every client who wishes to connect to the ERP 8.0 server.

The definitions for the particular jdenet_k processes to start are also given in the JDE.INI file. They are listed in the sections headed by [JDENET_KERNEL_DEF*x*]. Each of these entries lists the type of jdenet_k processes to start and maximum number of jdenet_k processes to start of this type.

The number of slave jdenet_n processes to start is listed in the JDE.INI file under the keyword maxNetProcesses. The purposes of these slave processes is to provide parallel processing for the job of listening to the socket and putting the associated messages on the message queues for the jdenet_k processes to finish.

jdenet_k Operation

jdenet_k processes are referred to as "kernel" processes. They do the actual work on the enterprise server. When a jdenet_k process starts, it can be any type of kernel process. It is the jdenet_n process which instructs each kernel process to be a certain type.

The jdenet_k process which becomes a CallObject kernel has the job of calling business function logic on the server. Business function logic is written in C code and compiled into UNIX shared libraries. The shared libraries are loaded onto the jdenet_k processes and then called directly through a C function call.

The jdenet_k process which becomes a UBE kernel waits for requests to run UBE jobs from the client. These UBE jobs are then placed in the F986110 table. The jobs are then picked up by the jdequeue processes that launch runbatch processes as required.

Many other types of jdenet_k processes exist. See your JDE.INI file for a complete list.

Understanding ERP 8.0 Initialization for UNIX

The following ERP 8.0 initialization occurs when starting ERP 8.0 programs (for example, jdequeue, runbatch, and so on).

- The ERP 8.0 environment name is passed as a command line argument to the program (for example, porttest, jdequeue in system/runque.sh).

- This environment may be translated to a different environment based on the settings in the [SERVER ENVIRONMENT MAP] section of the JDE.INI.

- The environment that is used must be a valid entry in the Environment Master (F0094) table. Likewise, it must have a valid corresponding pathcode in the Environment Path Code Tag (F00941) table.

- The following JDE.INI settings in the [DB SYSTEM SETTINGS] section are used to determine where the ERP 8.0 server startup tables are located (for example, F98611 and F986101:

  - Base Datasource

  - Object Owner

  - Server

  - Database

  - Load Library

  - Type

- Using the above information, the server's F986101 (OCM) table in the specified database is opened.

- If an override for a given table or the current user exists, that data source (OMDATP column in the F986101 table) is used for the given object or user and environment. Otherwise, the data source where OMOBNM=DEFAULT for the given environment is used. Ignore any inactive records (that is, OMSTSO=NA).

  J.D. Edwards highly recommends that you do not have any default (OMOBNM=DEFAULT) records for reports (OMFUNO=UBE) on the server. These records might prevent report interconnections (that is, one report calling another report) from starting correctly.

- Each unique data source in the F986101 table should correspond to one entry in the F98611 table.

- The corresponding information in the F98611 table must be correct. In particular, the OMDLLNAME field must show the correct library for the database to which the data source points. See *Database Driver Files* in this guide for specific information about the driver files required for HP-UX and AIX.

- For an Oracle database, the OMDATB field from the F98611 table maps to an entry in the tnsnames.ora file. This tnsnames.ora file must be set up correctly (check with an Oracle database administrator).

- For a SQL Server, Access, or Client Access database, the OMDATB field from the F98611 table maps to a data source specified in the ODBC Data Source Administrator applet in the Windows NT Control Panel. This data source must be set up correctly. If multiple users are going to log on to this Windows NT platform and run ERP 8.0 or PORTTEST, the data sources must be defined on the "System DSN" tab. Otherwise, "User Data Sources" can be used.

Starting the Enterprise Server for UNIX

You can start the enterprise servers either manually at the command line or automatically when the server boots. The manual process is the same for HP-UX, AIX, and Solaris, but the automatic process varies slightly by platform.

Note:

If you are running ERP 8.0 on the same server as your Oracle database, you must make sure Oracle is running before you start ERP 8.0. In particular, if you are starting ERP 8.0 at system boot time, you must make sure the Oracle startup processes are completed first.

RunOneWorld.sh

This is the script that starts the ERP 8.0 system on the enterprise server. This script completes the following functions:

- Starts jdenet_n. This is the ERP 8.0 network listener that receives requests from ERP 8.0 workstations.

- Starts one specification installation queue.

- Starts at least one jdequeue process using runque.sh for batch processes. This is the job queue that controls the processing of batch jobs submitted to the server.

- Starts one jdequeue process using runque.sh for Object Packages. Object Packages are groups of objects (for example, tables, business functions, and reports) that are being installed on a server.

   See *Package Build* in the *ERP 8.0 Package Management Guide* for more information about Object Packages.

The RunOneWorld.sh script runs runque.sh, which, in turn, runs jdequeue. The runque.sh script has the following parameters:

Parameter	Description
UID	Identifies a valid ERP 8.0 user ID.
PWD	Identifies the password of a valid ERP 8.0 user ID (UID).
ENV	Identifies a ERP 8.0 environment.
BATCH	Identifies the batch name being used. The default batch name is QBATCH. This corresponds to the workstation jde.ini UBEQueue setting in the [NETWORK QUEUE SETTINGS] section.
TYPE	Identifies the queue type. This is either 001 for specification installation queues, UBE for report queues, or PKG for Object Package Queues.
SLEEP	Identifies the number of seconds between polling for new UBEs or PKGs to process. Typically, this value is 5 seconds.

► **To manually start the enterprise server for UNIX**

This procedure is the same for HP-UX, AIX, and Solaris operating systems.

1. Sign on to the machine using the appropriate user ID as set up during the installation process.

   If you used the J.D. Edwards recommended user ID as described in the *ERP 8.0 Installation Manual*, the user ID is jde.

2. Enter the following commands:

```
cd log_directory
rm -f jde*log*
```

60

```
RunOneWorld.sh
```

- cd *log_directory*

  This command moves the user's current directory to the log directory. The administrator determines the name of this directory.

- rm -f jde*log*

  This command deletes the log files in the directory.

Caution:

Use extreme care when you enter this command. A syntax error in this command can cause severe problems on your system.

- RunOneWorld.sh

  This script starts the ERP 8.0 system. See *RunOneWorld.sh* at the beginning of this section for details about this script.

3. Sign off.

► **To automatically start the enterprise server for HP-UX**

1. Create a script named oneworld in /sbin/init.d with all necessary permissions for execution.

   The script should contain only the following:

```
#! /sbin/sh

/bi n/su - oneworld -c `$SYSTEM/bin32/RunOneWorld.sh'
```
The value *oneworld* is the name of the user who owns the shell script $SYSTEM/bin32/RunOneWorld.sh. Make sure that RunOneWorld.sh has all necessary permissions for execution.

2. Using the following command, create a soft link named S995oneworld to the oneworld script in the directory named /sbin/rc2.d.

```
ln -s /sbin/init.d/oneworld /sbin/rc2.d/S995oneworld
```

3. Verify that the following line is present in the .profile of the user who owns RunOneWorld.sh.

```
/usr/local/bin/oraenv
```
Before you execute oraenv, ensure that the Oracle environment variables of ORACLE_BASE, ORACLE_HOME, ORACLE_SID, ORACLE_TERM and ORAENV_ASK are properly assigned and exported. Also, you must add $ORACLE_HOME/bin to the PATH environment variable.

4. Set ORACLE_TERM to hp.

5. Set ORAENV_ASK to NO.

6. If the following command is in the .profile, you must delete it.

```
unset ORAENV_ASK
```

► **To automatically start the enterprise server for AIX and Solaris**

1. Create a script named rc.oneworld in /etc with all necessary permissions for execution.

    The script should contain only the following:

```
#! /bin/sh

/bin/su - oneworld -c `$SYSTEM/bin32/RunOneWorld.sh'
```

    The value *oneworld* is the name of the user who owns the shell script $SYSTEM/bin32/RunOneWorld.sh. Make sure that RunOneWorld.sh has all the necessary permissions for execution.

2. Add the following line at the very end of the text file named inittab in /etc:

```
oneworld:2:wait:/etc/rc.oneworld
```

3. Verify the following line is present in the .profile of the user who owns RunOneWorld.sh.

```
. /usr/bin/oraenv
```

    Before you execute oraenv, ensure that the Oracle environment variables of ORACLE_BASE, ORACLE_HOME, ORACLE_SID, ORACLE_TERM and ORAENV_ASK are properly assigned and exported. Also, you must add $ORACLE_HOME/bin to the PATH environment variable.

4. Set ORACLE_TERM to hp.

5. Set ORAENV_ASK to NO.

    To see a list of valid values for ORACLE_SID, look at the oratab text file in /etc.

6. If the following command is in the .profile, you must delete it:

```
unset ORAENV_ASK
```

► **To verify the ERP 8.0 installation**

After you start ERP 8.0, execute the following commands:

```
cd $SYSTEM/bin32

porttest userID password environment
```

The PORTTEST program initializes an environment, initializes a user, opens a table (F0902), and displays up to 99 rows of data.

Note:

The parameters for *userID, password*, and *environment* should be the same ones you used in RunOneWorld.sh when runque.sh is executed. However, these parameters can be any valid ERP 8.0 user ID, password, or environment.

Database Settings

The default database parameters for UNIX might not fully support multiple users. You might reach the maxprocess limit for the database. The initial settings are for a small database. You should change these parameters to a medium setting to avoid database problems. These settings reside in the init.ora file. The following path is an example of where you might typically find this file:

/u01/app/oracle/product/8.0.5/dbs/init.ora

Shutting Down the Enterprise Server for UNIX

The shut-down process is identical for HP-UX, AIX, and Solaris systems.

EndOneWorld.sh

This is the script that stops the ERP 8.0 system on the enterprise server. This script completes the following functions:

- Shuts down the specification installation queue

- Shuts down the job queue that was started by RunOneWorld.sh

- Shuts down the Object Package queue that was started by RunOneWorld.sh

- Shuts down jdenet_n and jdenet_k processes

The EndOneWorld.sh shell runs a script, killque.sh, for each queue type and name combination. It also runs a program called endnet. The following parameters apply to killque.sh:

Parameter	Description
UID	Identifies a valid ERP 8.0 user ID.
PWD	Identifies the password of a valid ERP 8.0 user ID (UID).
ENV	Identifies a ERP 8.0 environment.
BATCH	Identifies the batch name being used. The default batch name is QBATCH. This corresponds to the workstation jde.ini UBEQueue setting in the [NETWORK QUEUE SETTINGS] section.
TYPE	Identifies the queue type. This is either 001 for specification installation queues, UBE for report queues, or PKG for Object Package Queues.

► To shut down the enterprise server for UNIX

1. Sign on under the appropriate user ID as set up during the installation process.

2. Execute the following commands:

```
cd $SYSTEM/bin32
EndOneWorld.sh
```

Setting Up a Printer for UNIX

HP-UX, AIX, and Solaris systems use different processes for setting up printers. HP-UX uses a tool called SAM to help in setting up a printer, AIX uses a tool called SMIT, and Solaris uses a tool called Admintool. Each of the processes requires a privileged account to access the specific setup tasks. If possible, use the root **account of the system. For more information about printer setup, see the appropriate HP-UX, AIX, or Solaris documentation.**

See Also

❑ *Printing ERP 8.0 Reports* in the *System Administration Guide* for information specific to ERP 8.0 printer setup

Administrating Batch Processes for UNIX

Administrating batch processes involves knowing what processes run when ERP 8.0 starts, where files are placed before and after printing, and how to watch those processes.

Processes running for ERP 8.0 are owned by the userID that started the ERP 8.0 software. Generally this user ID is oneworld or jde, but this is site dependent. When ERP 8.0 starts, a number of processes start and run under the environment and security of the user that started them. These processes are:

Process	Description
jdenet_n	This is the network listener that listens for connection requests.
jdenet_k	The jdenet_n process starts the jdenet_k processes, which control ERP 8.0 components such as the security server, the transaction monitor, and data replication.
jdequeue	This is the queue job that searches the database queue and starts report processing. The runque.sh shell script starts jdequeue.

Monitoring Batch Processes

▶ **To monitor batch processes**

From the operating system prompt, enter the following command, substituting *oneworld* with the user ID that started ERP 8.0:

jdejobs

jdejobs is a script in the ERP 8.0 $SYSTEM/bin32 directory that uses the UNIX "ps" command to display job information.

Output from this command looks similar to the following:

```
jdeb7333 (OneWorld administrative user):
Semaphores: 1 Shmem Segs: 5 Msg.Queues: 18
Jobs on sundev1:
380 pts/24 0:03 jdenet_k
6024 pts/24 0:02 jdenet_k
11429 pts/24 0:03 runbatch
26118 pts/24 0:01 jdenet_n
26297 pts/24 0:02 jdequeue
26298 pts/24 0:02 jdequeue
26299 pts/24 0:02 jdequeue
26311 pts/24 0:02 jdequeue
26318 pts/24 0:03 jdenet_k
26530 pts/24 0:02 jdenet_k
27444 pts/24 0:01 jdenet_n
29476 pts/24 0:01 jdenet_n
```

From the output above, there are three jdenet_n jobs listening for requests, five jdenet_k jobs handling various ERP 8.0 "kernel" functions, and four queues waiting for requests to process. A runbatch job is processing a report.

The first column of the output displays the UNIX process ID that is associated with each process. To get more information about a particular process, you can look for the files in the log directory that have the same process ID as part of the file name.

Listing Batch Output Files

All output from each report, regardless of whether it is a preview, is placed in the PrintQueue directory under the installation directory of OneWorld before printing. Depending on the jde.ini settings for the workstation, the job might not be deleted after printing.

Jobs are printed to the location specified in the jde.ini file, unless overridden through the ERP 8.0 application. Use the Printers application to specify default printers. See Printing ERP 8.0 Reports in the System Administration Guide for more information about printers.

Two settings in the jde.ini file for the workstation tell the server whether to print the report immediately upon completion, and whether to save the output from the report or delete it. These settings are as follows:

```
 [NETWORK QUEUE SETTINGS]

SaveOutput=TRUE

PrintImmediate=TRUE
```

Setting SaveOutput to TRUE causes the jde.ini to hold the jobs within the PrintQueue directory, until the user explicitly deletes them. Setting PrintImmediate to TRUE tells the jde.ini to print the job immediately after completion of the report.

► **To list batch output files**

1. From the operating system prompt, enter the following command:

```
cd PrintQueue
```
This command changes the directory to the PrintQueue directory.

2. Enter the following command to list the files:

```
ls -al
```
Output looks similar to the following:

```
-rw-rw-r-- 1 OneWorld oneworld  1479 Feb 21 14:29
R31415_XJDE0001_UBE_1914_PS
-rw-rw-r-- 1 OneWorld oneworld  1479 Feb 21 14:27
R3270_XJDE0001_UBE_1912_PS
-rw-rw-r-- 1 OneWorld oneworld  1479 Feb 21 14:28
R3270_XJDE0001_UBE_1913_PS
-rw-rw-r-- 1 OneWorld oneworld  20090 Feb 18 14:03
R41560_XJDE0001_UBE_1870_PS
-rw-rw-r-- 1 OneWorld oneworld  20090 Feb 18 16:02
R41560_XJDE0001_UBE_1878_PS
-rw-rw-r-- 1 OneWorld oneworld  55830 Feb 21 09:46
S_R0006P_XJDE0001_UBE_1896_PDF
-rw-rw-r-- 1 OneWorld oneworld  55830 Feb 21 09:46
S_R0006P_XJDE0001_UBE_1898_PDF
-rw-rw-r-- 1 OneWorld oneworld  75209 Feb 21 17:25
S_R0006P_XJDE0001_UBE_1923_PS
-rw-rw-r-- 1 OneWorld oneworld  75209 Feb 21 17:25
S_R0006P_XJDE0001_UBE_1925_PS
```

These file names are the actual reports that were generated when the job was executed. The file names follow these conventions:

File Name	Description
R31515	The report name
XJDE00001	The report version executed
UBE	The type of request
1914	The request number assigned by ERP 8.0
PS	A PostScript file
PDF	A PDF file, meant for viewing on the workstation

You should encourage workstation users to use the SaveOutput=FALSE entry in their jde.ini file. If users at workstation decide to save their output, you should encourage them to periodically delete the entries through ERP 8.0. When you delete .PDF files from the operating system, this does not delete the corresponding ERP 8.0 print job entries in the Job Control Status Master (F986110) table. You must manually delete these entries from ERP 8.0 using the Work with Servers application.

Running Reports from the Command Line for UNIX

You can initiate batch process reports from the server command line by issuing the following command (you must have the proper authority and path equal to the description in the installation instructions):

```
runube UserName Password Environment ReportName VersionName JobQueue
Interactive|Batch Print|Hold Save|Delete [OutQ]
```

For the command parameters, only the first character of the parameter name is required. The vertical bar symbol "|" indicates that you must specify one of the parameters on either side of

the vertical bar. The bracket symbols "[" and "]" indicate an optional parameter. The following options apply to the runube command:

Value	Description
Interactive	The system holds the current terminal session until the entire report has been processed.
Batch	The runube command starts a runbatch job and returns control of the terminal to the user.
Print	The batch process report is spooled to the PrintQueue directory and then printed on the specified printer (OutQ). If you do not specify a printer, the system uses the default printer you have specified for the enterprise server in the Printers application.
Hold	The system places the the spool file in the PrintQueue directory for later printing at the user's request.
Save	The system saves the file after printing. If you specify Delete, the system will remove the file from the PrintQueue directory after it is printed.
Delete	The system removes the file from the PrintQueue directory after the report prints.

Example: Running Reports from the Command Line for UNIX

This example shows a command for executing a batch process report:

```
runube KL5595218 KL5595218 PROD R0006P XJDE0001 QBATCH Interactive
Print Delete printer_1
```

Scheduling Reports from the Command Line for UNIX

You can schedule a report from the command line for processing on a future date, daily, or even a recurring day of the week. This task can be accomplished by using the operating system utilities "at", "batch," and "cron". The "batch" and "at" utilities are used to schedule single occurrence jobs while "cron" can be used to schedule recurring jobs.

► To schedule a single occurrence report

Use the "at" command or the "batch" command to schedule a report at a later time. The command line structure of these commands is identical, but you use them differently.

The "batch" command is intended to run a job immediately in the background, providing the system load is low enough to handle the request. If the system load is not low enough, the job is held until system activity is low enough to handle the new request load.

The "at" command also runs jobs in the background but allows you to schedule the job to run at a future time. You can use this utility to run the batch job during off-peak hours.

The command format for the "batch" command is as follows:

```
batch command
```

The command format for the "at" command is as follows:

```
at -t CCYYMMDDHHMMSS command
```

The -t switch is used to schedule the time. The following table describes the *CCYYMMDDHHMMSS* variable:

Value	Description
CC	Century (first two digits of the year)
YY	Year (last two digits of the year)
MM	Two digit value of the month (for example, 02 for February)
DD	The day of the month (01 - 31)
HH	The hour to start the job (00 - 23)
MM	The minute to start the job (00 - 59)
SS	The second to start the job (00 - 59)
command	The command to run at the specified time. To schedule a report, use the runube command.

Example: Scheduling Single-Occurrence Reports from the Command Line for UNIX

This example shows a command line used to schedule a report to run at 06:00 on February 26, 2000. See *Running Reports from the Command Line for UNIX* in this guide for information about how to construct the runube command.

```
at -t20000226060000 runube KL5595218 KL5595218 PROD R0006P XJDE0001
QBATCH Interactive Print Delete printer_1
```

► To schedule a recurring report

You can use the "cron" UNIX utility to run jobs at a scheduled time. You can specify variable times, such as once a year or once every hour. The operation of this utility is controlled by a table of events based upon each user.

Enter the following command to modify the cron schedule and edit the cron table for the current user:

```
crontab -e
```

The format of the cron table is as follows:

```
mm HH DD MM W command
```

The following table describes the variables for this command:

Value	Description
MM	The minute to run the job (00 - 59, or * for any minute)
HH	The hour to run the job (00 - 23, or * for any hour)
DD	The day of the month to run the job (0 - 31, or * for any day)
MM	The month to run the job (1 - 12, or * for any month)
W	The day of the week to run the job (0 - 6, with 0 being Sunday)
command	The command to run at the specified time

After exiting the editor, the operating system should respond with a message stating the crontab has been modified.

Example: Scheduling Recurring Reports from the Command Line for UNIX

This example shows a command line used to schedule a report to run at 06:00, any Sunday in the month of February (by use of * for the day of the month and 0 for the day of the week).

```
00 06 * 02 0 runube KL5595218 KL5595218 PROD R0006P XJDE0001 QBATCH
Interactive Print Delete printer_1
```

Maintaining File Security for UNIX

Overall, only two accounts ever need operating system access to the ERP 8.0 environment files and version executables: the account that starts and stops ERP 8.0, and the account that builds the environment SPEC and BSFN files. These accounts are normally the same.

Setting Specification File Security

Specification (SPEC) files are the first part of the environment files. You access these files by the ERP 8.0 kernel processes. These files should never be accessed directly by an operating system user. Because of this, security on these files should be read/write for the user and group. They are not executables, so there is no need to set the executable option for any user, group, or other.

▶ **To set specification file security**

Enter the following command:

```
chmod 660 *db
```

The security for your SPEC files should look similar to the following example:

```
-rw-rw---- oneworld oneworld jdeblc.xdb

-rw-rw oneworld oneworld jdeblc.ddb
```

This command modifies only the .ddb and .xdb files in the current directory.

Setting Business Function File Security

You should keep business functions secure. In an environment where development takes place, you must have a strict form of version control on these source and object files. If the business function (BSFN) files change without the knowledge of the ERP 8.0 administrators, rebuilding them could have unknown or undesired results. A developer could be working to correct a problem, but the possibility always exists that the problem could become worse.

▶ **To set business function file security**

1. Enter the following command in the BSFN Source directory:

```
chmod 600 *.c
```

2. Enter the following command in the BSFN Include directory:

```
chmod 600 *.h
```

The security for your BSFN files should look similar to the following example:

```
-rw------ oneworld oneworld b4200100.c
-rw------ oneworld oneworld b4200100.h
```

Setting ERP 8.0 Executables Security

You should prevent access to the ERP 8.0 executable files to prevent other users from attempting to start up ERP 8.0. Running the same version of ERP 8.0 on the same system and using the same jde.ini settings can cause unpredictable results. In most cases, the second startup will fail, but giving users access to the shutdown procedures allows them to shutdown ERP 8.0.

► **To set ERP 8.0 executables security**

Enter the following command:

```
chmod 540 *..sh
```

The security for your ERP 8.0 executables should look similar to the following example:

```
-r-xr----- oneworld oneworld RunOneWorld.sh
-r-xr----- oneworld oneworld EndOneWorld.sh
```

The access granted by this command allows all users in the ERP 8.0 group read-only permission to the files, but does not grant them execute privilege. You can omit read access if desired.

Setting jde.ini File Security

You must keep the jde.ini file as secure as possible. This file contains a database user name and password that enables ERP 8.0 security to function. This database account is given read authority to the F98OWSEC table, which controls ERP 8.0 access.

Access to the F98OWSEC table, which contains privileged database user names and passwords, could give a user the ability to manipulate any data in the database, regardless of its sensitivity or security. Because of this, you should keep access to the jde.ini file as restricted as possible.

► **To set jde.ini file security**

Enter the following command:

```
chmod 600 JDE.INI
```

This command sets maximum security for the jde.ini file.

Note:

The file name is case-sensitive.

The security for your jde.ini file should look similar to the following:

```
-rw------- oneworld oneworld jde.ini
```

Denying write access to the user "oneworld" is not entirely necessary, but prevents accidental modification of jde.ini settings, which could adversely affect the operation of ERP 8.0.

If you want to deny write access, enter the following command:

```
chmod 400 JDE.INI
```

Because it is so important to keep access to the jde.ini file as secure as possible, you should also limit the amount of access to the user "oneworld" (or the user that starts and stops ERP 8.0) to a minimum. Users with access to this account could obtain the F98OWSEC user names and passwords, and, thus, gain privileged access to the database.

Setting Up Enhanced UNIX Security in the jde.ini File

You can provide a higher level of security in UNIX environments by running enhanced versions of ERP 8.0 processes. By using enhanced security you prevent other UNIX system users from obtaining password and security-related values by viewing certain processes using the ps -ef command.

ERP 8.0 automatically invokes these processes when you enable enhanced UNIX security in the jde.ini file and also when you omit certain command line arguments from certain shell scripts. The following lists provide these command line arguments and the shell scripts from which to remove them:

Command Line Arguments

- user_id
- password
- environment

Shell Scripts

- RunOneWorld.sh
- EndOneWorld.sh
- runqueue.sh
- killqueue.sh

The following ERP 8.0 processes support enhanced UNIX security:

- jdequeue
- killqueue
- runbatch

These processes look first to the jde.ini to determine if enhanced UNIX security is enabled. If the server password file flag is set in the jde.ini and you omit all three security-related parameters from the shell script command line, the enhanced security processes use a system of pointers to obtain the values for the user ID, password, and environment.

These pointers are created by the applicable processes. The processes read values obtained from temporary password files, which they create on an as-needed basis. Each temporary file

contains values for all three security-related parameters (user ID, password, and environment).

The temporary password files are uniquely created by three security-related parameters (user ID, password, and environment) and are associated with the process ID of each currently-running jdequeue, killqueue, and runbatch process. ERP 8.0 maintains a set of pointers that associates these files with the appropriate process and parameters, which are passed from values that you specify in the jde.ini file.

► **To set up enhanced UNIX security in the jde.ini file**

1. Locate the enterprise server jde.ini file. You can locate the jde.ini file by examining the UNIX environment variable $JDE_BASE (the variable name is case-sensitive). For example, you might enter the command:

```
echo $JDE_BASE
```

Generally, this file is located in a directory called "ini" in the directory tree under the base installation directory - for example, /u04/jdedwardsoneworld/b733. In this case, the directory with the file is JDE_BASE=/u04/jdedwardsoneworld/b733/ini.

Note:

The file name is case-sensitive.

2. In the [SECURITY] section, verify or change your settings for the server password file parameter:

```
 [SECURITY]
ServerPswdFile=TRUE/FALSE
```

Setting	Description
ServerPswdFile=*TRUE/FALSE*	Specifies whether the jdequeue process will pass the password to the jdequeue, killqueue, and runbatch enhanced security processes. When you set the value of TRUE, you activate encoding for enhanced security.
	The parameter values TRUE and FALSE are case-sensitive. You must specify the values in all upper case.

3. In the [NETWORK QUEUE SETTINGS] section, verify or change your settings for the security-related parameters:

```
 [NETWORK QUEUE SETTINGS]
QUSER=user_ID
QPassword=password
QEnv=environment
```

Setting	Description
QUSER=*user_ID*	Identifies a valid ERP 8.0 user ID. The value you specify here functions identically to the user ID parameter you would have specified in the command line argument.
QPassword=*password*	Identifies the password of a valid ERP 8.0 user ID. The value you specify here functions identically to the PWD parameter you would have specified in the command line argument.

QEnv=*environment*	Identifies a ERP 8.0 environment. The value you specify here is functionally identical to the ENV parameter you would have specified in the command line argument.

4. Save the changes and close the jde.ini file.

5. Modify the RunOneWorld.sh and EndOneWorld.sh scripts so that the user ID, password, and environment parameters do not pass from these scripts to the runque.sh and killque.sh scripts. This modification prevents the output from the ps command from displaying these parameters.

Understanding HP-UX and Solaris Kernel Parameter Settings for ERP 8.0

The kernels for HP-UX and Solaris comprise a long list of kernel parameters. These parameters control the quantity of various resources available within the HP-UX and Solaris kernels. Also, the ERP 8.0 server software, specifically the inter-process communication (IPC) facilities, are sensitive to numerous kernel parameters for operation. These parameters differ across the various vendor implementations of UNIX and do not follow POSIX standards. To change the values of kernel parameters for HP-UX, you must shut down the UNIX system in question and recompile the operating system kernel using the modified set of kernel parameters. For Solaris, you must reboot the system after you modify kernel parameters. The proper values of these parameters depend on various criteria, such as number of users on the system, active applications, and the resource requirements for the active applications.

In most cases for HP-UX, you set kernel parameters with the System Administration Management (SAM) tool. For Solaris, open the /etc/system file with the editor of your choice to modify these parameters. You can set any given parameter to either a simple numerical value or an expression based on the values of other parameters. The system administrator must set the kernel parameters. UNIX security refers to users with access to administrative functions as superusers.

When you first setup an HP-UX or a Solaris machine for ERP 8.0, you should run SAM for HP-UX or an editor for Solaris, and change the kernel parameters. On an HP-UX system, you can see the current values of kernel parameters by viewing the /stand/system file, or by running SAM. On a Solaris system, type the command sysdef -i to see the current kernel settings.

Note for Solaris:

Some machines might require an additional parameter in the /etc/system file to activate messaging and semaphore processing. After you enter the sysdef -i command, if some parameters appear with 0 (zero) values, you might need to add one or more of the following parameters to the /etc/system file:

- forceload: sys/msgsys
- forceload: sys/semsys
- forceload: sys/shmsys

ERP 8.0 is not the only software to use the resources that the kernel parameters control. Therefore, for each parameter, the requirements for ERP 8.0 are either the minimum defaults provided with HP-UX and Solaris, in addition to the defaults provided with HP-UX and Solaris, or the requirements of other software installed on the system.

The following list provides the definitions of terms essential to the understanding of HP-UX and Solaris kernel parameters:

Parameter	Description
jdenet_n	The maximum number of jdenet_n (net) processes that can be created for an instance ERP 8.0 server software running on the system. This is controlled by the maxNetProcesses parameter in the JDENET section of the jde.ini file for each instance of ERP 8.0.
jdenet_k	The maximum number of jdenet_k (kernel) processes that can be created for an instance of ERP 8.0 server software running on the system. This is controlled by the maxKernelProcesses parameter in the JDENET section of the jde.ini file for each instance of ERP 8.0. Note that the maxNumberOfProcesses parameters in the JDENET_Kernel_Def sections do not matter here.
Jdequeue	The maximum number of jdequeue processes that can be created, including across all instances of ERP 8.0 server software running on the system. The number of invocations of runque.sh in the RunOneWorld.sh scripts controls this.

Note:

The number of ERP 8.0 users that a machine serves, the number of instances of ERP 8.0 server software running on a machine, and the size of any databases on the machine are primary factors that affect the settings for HP-UX and Solaris kernel parameters. The number of jdenet_n, jdenet_k, and jdequeue processes running should reflect this information.

The following illustration provides an example of a Solaris editor that displays information for shared memory segments. The parameter name appears at the end of each line in the editor (for example, shmmax at the end of the following line):

```
set shmys shminfo_shmmax=4294967295
```

Message Queues

Generally, the system clears queues quickly, but if a problem arises, you can revise values for the following parameters to rectify the situation:

Parameter **Description**

mesg
This value must be 1. System-V style message queues are valid.

msgmni
The value of msgmni represents the number of message queue identifiers. These identifiers determine the number of message queues that can exist throughout the system. In addition to the system default value and the requirements of other software, add 64 for a typical ERP 8.0 installation (per ERP 8.0 instance). If you are modifying the maxKernelProcesses parameter, you can use the following equation to estimate the number of message queues necessary for ERP 8.0:

$$1 + jdenet\_n + 2 \times jdenet\_k + 2 \times jdequeue$$

msgtql
The value of msgtql represents the number of message headers. This number determines the total number of messages that can be in all the message queues at the same time. In addition to the requirements of other software, allow a value equal to 10 x msgmni for the requirements of ERP 8.0 (640 for a typical installation).

msgmap
The value for msgmap represents the number of entries in the map of free message segments. The default value of msgtql + 2 should suffice (642 for a typical installation). If the value of msgmap is less than the value of msgtql + 2, attempts to create a message queue or to send a message might fail. Unfortunately, you cannot effectively quantify what ERP 8.0 requires as the value for msgmap.

msgmnb
The value of msgmnb represents the maximum number of bytes that can reside on a single message queue at the same time. You should set the value for msgmnb at only a fraction of msgseg x msgssz. For ERP 8.0, a value of 32768 is reasonable. You can set a larger value as long as the product of msgseg x msgssz is large enough. The minimum value is 8192. Additional requirements of this parameter might increase the value of msgmnb.

msgmax
The value of msgmax represents the maximum size, in bytes, of a single message. Do not set msgmax with a larger value than the value of msgmnb. The recommended setting is msgmax = msgmnb. The minimum value is 1024. Additional requirements of this parameter might increase the value of msgmax.

Inside the HP-UX and Solaris kernels, messages in message queues reside in message segments. The following parameters determine the size and number of segments available throughout the system:

Parameter **Description**

msgssz
The value of msgssz represents the size of each message segment in bytes. For ERP 8.0, a value of 64 is adequate in most situations.

msgseg
The value of msgseg represents the number of message segments throughout the system. In addition to the requirements of other software, allow a value equal to 50 x the msgmni requirement for ERP 8.0, or approximately 4096 per ERP 8.0 instance.

Semaphores

Parameter	Description
sema	This value must
semmni	The value of semmni represents the maximum number of semaphore identifiers that can exist throughout the system. For ERP 8.0, two identifiers exist for each instance of ERP 8.0, so the default value suppled with the HP-UX and Solaris systems should suffice.
semmap	The value of semmap represents the number of entries in the map of free semaphores. The default value of semmni + 2 should suffice. If you decrease the value of semmap, attempts to create a semaphore set, which occurs during JDEIPC initialization, might fail. Unfortunately, you cannot effectively quantify what ERP 8.0 requires as the value for semmap.
semmns	The value of semmns represents the maximum number of semaphores that can exist throughout the system. Each instance of ERP 8.0 allocates 200 semaphores by default. However, you can customize this value in the jde.ini file. In the [JDEIPC] section, modify the parameter maxNumberOfSemaphores to customize the number of semaphores that an instance of ERP 8.0 allocates. For all releases of ERP 8.0, the ERP 8.0 requirement is in addition to the requirements of other software. A good starting point for a typical ERP 8.0 installation (single instance) with Oracle should be 500.
semmnu	The value of semmnu represents the maximum number of semaphore undo structures across the entire system. Effectively, this value is the maximum number of semaphores that the system can lock at the same time. For ERP 8.0, allow one for each ERP 8.0 process that can exist across all installations of ERP 8.0 on the system. Use the following equation to determine this value: 1 + jdenet_n + jdenet_k + 2 x jdequeue + maximum number of jdeprint processes + maximum number of runube processes

Note:

This equation is similar to the equation used to calculate the value for msgmni. A good estimate for a typical ERP 8.0 installation would be 128 (per ERP 8.0 instance), but if you will be running a large number of UBE queues or print jobs, you might need to increase the value of this parameter.

The number of outstanding print requests at a given time, whether printing or waiting for a printer, determines the number of jdeprint processes. A reasonable estimate for the upper limit of this value is 10. However, this estimate is application dependent. For example, a large warehouse where pick slips constantly print might have more requests.

The number of UBEs (batch jobs) that run directly on the server, not from a client, determine the number of runube processes. This value depends on the use of the system. Theoretically, this value has no limit.

The jdequeue parameter is double because each jdequeue process might create a runbatch process. The requirement for ERP 8.0 is in addition to the system default value and the requirements of other software.

---

semume   The value of semume represents the maximum number of semaphore undo structures per process. Effectively, this value is the maximum number of semaphores that a given process can lock at the same time. ERP 8.0 requires a minimum value of 4 for semume. This minimum value is not in addition to the system default and the requirements of other software. This value is a simple minimum. The default value provided with the system should suffice.

semmsl   (Solaris only) The value for semmsl represents the maximum number of semaphores per unique identifier. For ERP 8.0, this must be set equal to or higher than the maxNumberOfSemaphores setting in the jde.ini file. For the default installation, you should set this parameter to 200.

semaem   The value for semaem represents the maximum "adjust on exit" value for any semaphore. This value must be at least 1024. (The default value is greater than 1024.)

semvmx   The value of semvmx represents the maximum value for any semaphore. This value must be at least 1024. (The default value is greater than 1024.)

Shared Memory

Parameter **Description**

shmem   This value must be 1 to enable shared memory.

shmmax   The value of shmmax represents the maximum size, in bytes, of a single shared memory segment. The default value provided with the system should suffice. It is possible that other software packages such as Oracle might require an increase to this value.

shmmni   The value of shmmni represents the maximum number of shared memory segments throughout the system. For ERP 8.0, allow 20 per instance of the ERP 8.0 server software running on the system. This requirement is in addition to the system default and the requirements of other software.

shmseg   The value of shmseg represents the maximum number of shared memory segments to which any one process can attach at a given moment. The default value provided with the system should suffice.

File Descriptors

Parameter   **Description**

nfile   The value of nfile represents the maximum number of open files, or sockets, throughout the system. The default value should be enough to handle most ERP 8.0 needs. However, you must make explicit allowance for the maximum number of sockets that jdenet_n processes can create to communicate with clients. This number is the sum of all sockets across all

instances of ERP 8.0 server software running on the system. The maxNetConnections parameter in the [JDENET] section of each jde.ini file indicates this sum. This requirement is in addition to the system default and the requirements of other software.

maxfiles   The value of maxfiles represents the default soft limit on the number of file descriptors any given process can have. A system call can raise the soft limit of a process as high as maxfiles_lim. For ERP 8.0, the minimum value for maxfiles should equal at least the largest of all the maxNetConnections values in all the jde.ini files in use + 10. This requirement is a minimum value not in addition to the system default and the requirements of other software.

> Note:
>
> If this parameter is too small, ERP 8.0 might not open the log file to generate an error message.

maxfiles_lim   The value of maxfiles_lim represents the hard limit of file descriptors any given process can have. For ERP 8.0, the minimum value for maxfiles should equal at least the largest of all the maxNetConnections values in all the jde.ini files in use + 10. This requirement is a minimum value not in addition to the system default and the requirements of other software.

Processes

Parameter Description

maxuprc   The value of maxuprc represents the maximum number of processes that can run under a single user ID. This number is of particular concern on systems with either a very large ERP 8.0 installation or multiple instances of ERP 8.0 running under the same user ID. For ERP 8.0, allow 2 x jdenet_n + jdenet_k + 2 x jdequeue. Figure this value across all instances of ERP 8.0 software running on the system. The doubling allows ample capacity for all the ancillary processes, such as runube and runprint.

Understanding AIX Kernel Parameter Settings for ERP 8.0

AIX contains a set of kernel parameters (system parameters) that determine functionality and a separate set of performance parameters (tune parameters) that determine performance.

See Also

❑ Appropriate Oracle and IBM documentation for more information on AIX performance tuning

System Parameters

Setting the kernel parameters requires you to run the system management tool (SMIT). AIX has very few configurable parameters that influence ERP 8.0 software. Of the parameters that influence ERP 8.0, just one can cause ERP 8.0 to become inoperable. This parameter is maxuproc.

The ERP 8.0 requirements for maxuproc are as follows:

Parameter Description

maxuproc This parameter controls the number of processes a single user can run simultaneously. The value of maxuproc should be 400.

► To set the value of maxuproc

1. Log on as the root user.

2. On the command line, enter the following command:

```
smit
```

3. In SMIT, choose the System Environments item and then choose the Change/Show Characteristics of Operating System item.

4. Change the value of Maximum number of processes allowed per user to 400.

All other system parameters can remain at default values. The following list provides these system parameters for general reference:

Parameter Description

maxbuf max pages in block I/O buffer cache

maxmbu max real memory for MBUFS

autorestart auto reboot after crash

iostat continuously maintain disk I/O history

maxpout high water mark for pending write I/O per file

minpout low water mark for pending write I/O per file

keylock state of system keylock at boot time

fullcore enable full core dump

pre43core use pre-430 style core dump (AIX 4.3 only)

logfilesize error log file size

memscrub enable memory scrubbing

dcache size of data cache in bytes

icache size of instruction cache in bytes

realmem size of usable physical memory

primary primary dump device

conslogin system console login

► **To view the system parameters**

Enter the following command:

```
lsattr-E-lsys0
```

   lsattr-E-lsys0

To change a system parameter, you must navigate to the correct SMIT menu option.

Tune Parameters

Setting the tune parameters requires you to run the following commands:

- For network parameters:

```
no
```

- For device parameters:

```
chdev
```

- For nfs parameters:

```
chnfs
```

- For general tuning parameters:

```
vmtune
```

Tune parameters can also be kept at their defaults. Changes to tune parameters are generally needed only for performance reasons. Proper settings for optimal performance may vary with changes in the underlying database, hardware configuration, and ERP 8.0 configuration.

Performance tuning for AIX running ERP 8.0 or Oracle involves the setting of parameters which control virtual memory for paging, Raid, disk system types, and CPU scheduling. The following brief example explains how you can tune AIX performance:

Example: Disk Striping

Disk striping is the technique of spreading sequential data across multiple disk drives so data can be accessed in parallel from several drives at once. If striping is used, then the following tune parameters are set:

Parameter	Description
stripe size	64KB
max_coalesce	64KB
minpgahead	2
maxpgahead	16 x number of disk drives
maxfree	minfree + maxpgahead

For AIX machines with multiple processors, it is possible to bind a particular process to a particular processor in the machine. Doing so provides higher priority to those processes and can be used to evenly distribute the load across the machine.

Running Multiple Instances of the ERP 8.0 Enterprise Server

There are several reasons you may want to run multiple instances of the ERP 8.0 enterprise server. Common reasons are testing a new service pack or upgrading to a new version of ERP 8.0. You can run multiple instances of the ERP 8.0 server on the same machine by following a few simple guidelines.

Note:

These steps do not create a new database or any new database tables. Therefore, you will be using the same data tables that are used by the original instance of ERP 8.0 that was installed. If you want to create a completely separate set of database tables, follow the instructions on setting up a new environment in the *Configuration Network Computing Implementation Guide*.

Before You Begin

- Make sure you have enough disk space to create copies of your current ERP 8.0 system directory and at least one path code directory.

► **To run multiple instances of the ERP 8.0 enterprise server**

1. The system administrator should create a new UNIX user ID that owns the new ERP 8.0 instance. Create the ID using the appropriate administration tool, such as smit, sam, or admintool.

   Note:

   Although it is possible to run multiple instances of the ERP 8.0 server using the same UNIX user ID, this is not recommended. ERP 8.0 depends on certain UNIX environment variables to function correctly, and these variables are easier to manage under different UNIX user IDs.

2. Using the new UNIX user ID, sign onto your original ERP 8.0 instance.

3. Copy the .profile and .oneworld files from the original user ID's home directory to the new user ID's home directory.

4. Change the .profile file for the new user ID as appropriate.

5. Change the new user ID's .oneworld file to reference the new directory path where you will create your new ERP 8.0 instance. For example:

   Original .oneworld file:

```
export EVRHOME=/u01/jdedwardsoneworld/b7332
```
   New .oneworld file:

```
export EVRHOME=/u02/jdedwardsoneworld/b7332
```

6. Create the directory where your new ERP 8.0 instance will reside. For example:

```
mkdir -P /u02/jdedwardsoneworld/b7332
```

7. Copy the system directory, the ini directory, and at least one path code directory from the original instance of ERP 8.0 to the new directory path. The following sample commands would accomplish this:

```
cp -R /u01/jdedwardsoneworld/b7332/system
/u02/jdedwardsoneworld/b7332

cp -R /u01/jdedwardsoneworld/b7332/ini /u02/jdedwardsoneworld/b7332

cp -R /u01/jdedwardsoneworld/b7332/DEVB7332
/u02/jdedwardsoneworld/b7332
```

Note:

The path code directories for any environments that you intend to use for this second instance of ERP 8.0 must be copied to the new directory. You cannot share path code directories between two or more instances of ERP 8.0 as this could cause specification file corruption.

8. Create an empty log directory under the new path, using a command such as the one below:

```
mkdir -P /u02/jdedwardsoneworld/b7332/log
```

9. In the new jde.ini file, change all references to the original directory name to the new directory name. This includes the [INSTALL], [DEBUG], and [BSFN BUILD] sections. For example:

```
[DEBUG]

DebugFile=/u02/jdedwardsoneworld/b7332/log/ jdedebug.log

JobFile=/u02/jdedwardsoneworld/b7332/log/jde.log

[INSTALL]

B733=/u02/jdedwardsoneworld/b7332
```

```
[BSFN BUILD]

BuildArea=/u02/jdedwardsoneworld/b7332/packages
```

10. Change the new jde.ini file to reference a port number and starting IPC key that are different from the original ERP 8.0 instance. These are defined by the following parameters, the numbers shown are examples only:

```
[JDENET]

serviceNameListen=6009

serviceNameConnect=6009
```

```
[JDEIPC]

startIPCKeyValue=9000
```

11. From the client workstation jde.ini file, change the serviceName parameters to match those of the server jde.ini file.

Once you have made all of the changes described in this chapter, you can start and stop the new ERP 8.0 instance independent of the original ERP 8.0 instance.

All existing ERP 8.0 environments will be valid for the new ERP 8.0 instance, provided that you have copied the corresponding path code directory for a given environment. All current logical data sources and OCM mappings will be recognized by the new instance.

```
smit

lsattr-E-lsys0

no

chdev

chnfs

vmtune

bindprocessor 1234 0
```

Server Administration - NT

J.D. Edwards supports ERP 8.0 enterprise servers running the Microsoft Windows NT Server. The server can use either an Intel Pentium processor or the Compaq AlphaServer processor. You can operate the enterprise server for Windows NT in a logic or database server environment. You need to perform certain administration procedures on your enterprise server to ensure that ERP 8.0 will run properly.
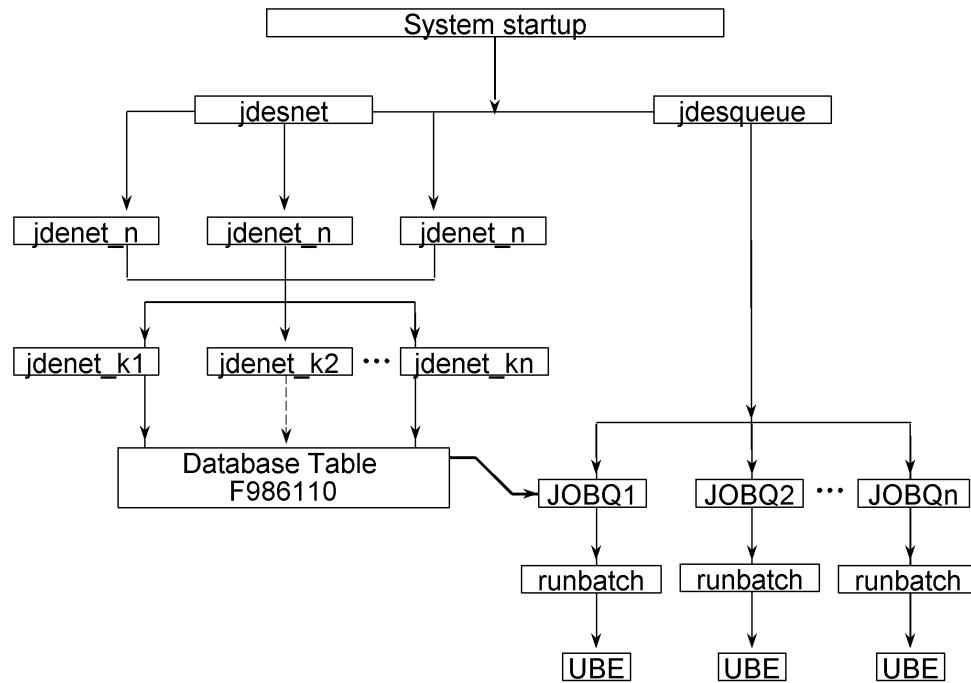
Understanding the ERP 8.0 Directory Structure for Windows NT

The following is a list of directories that are copied to the Windows NT enterprise server when ERP 8.0 is installed. They should be installed under the ERP 8.0 base directory (for example, z:\jdedwardsoneworld\b733\ddp). Indented names indicate subdirectories of the unindented directories.

Directory Name	Description
pathcode	This is the main directory for the business function shared libraries, C header files, object files, source files, and specification ("spec" or "TAM") files. Upon installation, this directory will be copied to the proper path codes (for example, PRODB733 and DEVB733). • bin32 - Business function shared libraries. • spec - Specification files. These binary data files are in a J.D. Edwards proprietary format.
system	This is the main directory for the system-level executables, shared libraries, C header files, libraries, and localization files. • bin32 - System-level executables and shared libraries. • include - System-level C header files. • includev - System-level C header files provided by third-party vendors (for example, Vertex). • lib - System-level shared libraries and export files. • libv32 - System-level shared libraries provided by third-party vendors.
PrintQueue	All .PDF file outputs for reports are written here.
log	The jde_xxx.log and jdedbug_xxx.log files are written here.
packages	This is the server package installation base directory. Directories exist here only if a package has been installed. Under the package directory are subdirectories named for each package that has been installed. Located under each package are the following directories: • bin32 - Business function shared libraries. • include - Business function header files. • obj - Business function object files. These are divided among lower level subdirectories that correspond to each DLL in the bin32 directory. • source - Business function source files. These are divided among lower level subdirectories that correspond to each DLL in the bin32 directory. • spec - Specification files. These binary data files are in a J.D. Edwards proprietary format.

Understanding ERP 8.0 Architecture and Process Flow for Windows NT

The following host server processes perform the indicated actions.

```
                    ┌─────────────────────────────┐
                    │       System startup        │
                    └─────────────────────────────┘
                                   │
        ┌──────────────────────────┼─────────────────────────┐
   ┌─────────┐                     │              ┌─────────────┐
   │ jdesnet │                     │              │  jdesqueue  │
   └─────────┘                     │              └─────────────┘
     │       │        │                                 │
     ▼       ▼        ▼                                 │
┌──────────┐ ┌──────────┐ ┌──────────┐                  │
│ jdenet_n │ │ jdenet_n │ │ jdenet_n │                  │
└──────────┘ └──────────┘ └──────────┘                  │
      │           │            │                        │
      ▼           ▼            ▼                         │
┌───────────┐ ┌───────────┐ ┌───────────┐               │
│ jdenet_k1 │ │ jdenet_k2 │…│ jdenet_kn │               │
└───────────┘ └───────────┘ └───────────┘               │
      │           │            │                        │
      ▼           ▼            ▼                         │
┌──────────────────────────────┐    ┌────────┐ ┌────────┐ ┌────────┐
│      Database Table          │───▶│ JOBQ1  │ │ JOBQ2  │…│ JOBQn  │
│        F986110               │    └────────┘ └────────┘ └────────┘
└──────────────────────────────┘        │          │          │
                                         ▼          ▼          ▼
                                   ┌──────────┐┌──────────┐┌──────────┐
                                   │ runbatch ││ runbatch ││ runbatch │
                                   └──────────┘└──────────┘└──────────┘
                                         │          │          │
                                         ▼          ▼          ▼
                                     ┌──────┐   ┌──────┐   ┌──────┐
                                     │ UBE  │   │ UBE  │   │ UBE  │
                                     └──────┘   └──────┘   └──────┘
```

All communications between the client and the host server take place using sockets. The communications between jdenet_n and jdenet_k occur with shared memory. jdenet_n and jdequeue communicate using the F986110 database table.

The following text explains the process flow:

1. At Windows NT system startup, the following occurs:

   • Automatically runs jdesnet if it is installed to start automatically. Otherwise, it must be started manually.

   • Automatically runs jdesque if it is installed to start automatically. Otherwise, it must be started manually.

2. The following facts apply to the JDE network service:

   • The program is system\bin32\jdesnet.exe.

   • Each time a new server or workstation connects to this server, jdesnet may start another jdenet_n until the number of jdesnet and jdenet_n jobs equals the maxNetProcesses field value in the [JDENET] section of the JDE.INI file.

   • Each time a new request, such as a batch application or CallObj, is submitted, jdesnet (and any jdenet_n processes) may start another jdenet_k process until the number of jdenet_k jobs equals the maxKernelProcesses field value in the [JDENET] section of the JDE.INI file.

   • Jdenet_n may be run manually by running system\bin32\jdenet_n.

3. The following facts apply to the JDE queue service:

- The program is system\bin32\jdesque.exe.

- Runs the number of instances of jdequeue specified in the UBEQueues, PackageQueues, and SpecInstallQueues fields in the [NETWORK QUEUE SETTINGS] section of the JDE.INI.

- Jdequeue may be run manually by running system\bin32\jdequeue followed by the required parameters: user name, password, environment/data source (for example, PD7334), queue name (for example, QBATCH), the string "UBE", and the time interval in seconds between fetches of the next record in the database table F986110.

4. When a user submits a batch application, jdesnet or jdenet_n (as part of the host server) communicates with the client:

- The host server programs are system\bin32\jdesnet.exe and system\bin32\jdenet_n.exe.

- The client environment is initialized.

- The client tells the host server (using a socket) to initialize its environment.

- The host server (for example jdenet_n) initializes its environment, and gets environment and user handles.

- The host server passes the environment and user handles to the client (using a socket).

- The client launches the batch application. He then sends data to the host server (using a socket).

- If the maximum number of kernel (for example, jdenet_k; the "k" stands for "kernel") processes has not been met, jdesnet or jdenet_n may start a new jdenet_k process.

- If the maximum number of jdenet_k processes has been met, jdesnet or jdenet_n puts the message ina queue for a jdenet_k process..

- The client frees the user environment.

- The client tells the host server (using a socket) to free the user environment for the server.

- The host server frees its user environment.

- The client tells the host server (using a socket) to free the environment for the server.

- The host server frees its environment.

5. When the UBE Jdenet_k (the kernel) writes to the database (batch application only), the following occurs:

- The program is system\bin32\jdenet_k.exe.

- Jdenet_k adds a record in the F986110 database table. The record has a status of "W" (Waiting).

6. Jdequeue periodically checks contents of the F986110 database table and runs a runbatch process (batch application only):

- The program is system\bin32\jdequeue.exe.

- Initializes the environment. This includes the batch name (for example, "QBATCH"), machine name, and status.

- At a specified interval, fetches the next record in the database table F986110.

- If a fetch is successful, changes the status in F986110 to "S" (Submitted) and runs runbatch.

- If a fetch was not successful, waits for a predetermined amount of time and then tries another fetch.

7. When runbatch processes the batch application, the following occurs:

- The program is system\bin32\runbatch.exe.

- Changes the status stored in database table F986110 to "P" (Processing).

- Starts the batch application.

- If the batch application completes successfully, it changes the status in F986110 to "D" (Done).

- If the batch application, it changes the status in F986110 to "E" (Error).

8. As opposed to the many processes that execute when a batch application is submitted, jdenet_k performs the processing when a user submits a CallObject.

   Could not start the *service name* service on *enterprise server name*.

   Error 1069: The service did not start due to a signon failure.

Understanding ERP 8.0 Initialization for Windows NT

The following ERP 8.0 initialization occurs when starting ERP 8.0 programs (jdequeue, runbatch, and so on).

- The environment is passed as a command line argument to the program (for example, porttest, jdequeue) or retrieved from the "QEnv" key in the [NETWORK QUEUE SETTINGS] section of the jde.ini by jdesque.

- This environment may be translated to a different environment based on the settings in the [SERVER ENVIRONMENT MAP] section of the jde.ini.

- The environment that is used must be a valid entry in the Environment master (F0094) table and must have a valid corresponding path code in the Environment Path Code Tag (F00941) table.

- The following jde.ini settings in the [DB SYSTEM SETTINGS] section are used to determine where the ERP 8.0 server startup tables are located (for example, F98611 and F986101):

  - Base Datasource

  - Object Owner

  - Server

  - Database

  - Load Library

  - Type

- Using the above information, the server's F986101 (OCM) table in the specified database is opened.

- If an override for a given table, BSFN, and so on, or the current user exists, that data source (OMDATP column in the F986101 table) is used for the given object or user and environment. Otherwise, the data source where OMOBNM=DEFAULT for the

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given environment is used. Ignore any inactive records (that is, OMSTSO=NA). J.D. Edwards *highly* recommends that you do not have any default (OMOBNM=DEFAULT) records for batch applications (OMFUNO=UBE). These records might prevent report interconnections (for example, one report calling another report) from starting correctly.

- Each unique data source in the F986101 table should correspond to one entry in the F98611 table.

- The corresponding information in the F98611 table must be correct. In particular, the OMDLLNAME field must show the correct DLL for the database to which the data source points. See *Database Driver Files* in this guide for more information about which driver files to use.

- For an Oracle database, the OMDATB field from the F98611 table maps to an entry in the tnsnames.ora file. This tnsnames.ora file must be set up correctly (check with an Oracle database administrator).

- For a Microsoft SQL Server, Microsoft Access, or Client Access database, the OMDATB field from the F98611 table maps to a data source specified in the ODBC Data Source Administrator applet in the Windows NT Control Panel. This data source must be set up correctly. If multiple users are going to log on to this Windows NT platform and run ERP 8.0 or PORTTEST, the data sources must be defined on the System DSN tab. Otherwise, User Data Sources can be used.

  If you are using Microsoft Windows 2000, to open the ODBC Data Source Administrator, go to the Start menu, then Programs, the Administrative Tools, then Data Sources (ODBC) .

- Here are some particulars for the setup of different types of ODBC drivers (using the ODBC Data Source Administrator applet):

  SQL Server:

    1) The Data Source Name must match the name found in the F98611 table.

    2) The Description can be anything that you want.

    3) The Server is the name of the database server.

    4) The Network Address includes the database server name, a comma, and a port where the database user listens.

    5) Network Library should be set to Default.

    6) Click the Options button for more settings.

    7) The Database Name is usually set to JDE. It could be set to Default.

    8) The Language Name should be set to Default.

    9) Generate Stored Procedure for Prepared Statement should be off.

    10) Use ANSI Quoted Identifiers should be on.

    11) Use ANSI Nulls, Padding and Warnings should be on.

    12) Convert OEM to ANSI characters should be off.

Client Access:

1) The General tab:

The Data Source Name must match the name found in the F98611 table.

The System is the name of the database server.

2) The Server tab:

The Default libraries should be the AS/400 library to use.

The Commit mode should be "Commit immediate (*NONE)."

3) The Format tab:

The Naming convention should be "System naming convention (*SYS)."

4) The Other tab:

If the data that you are transferring using this data source contains a BLOB (Binary Large Object), Translation should be set to "Do not translate CCSID 65535."

If the data that you are transferring using this data source does not contain a BLOB, Translation should be set to "Translate CCSID 65535."

Setting Up a Printer for Windows NT

Setting up a printer for a Windows NT enterprise server involves setting up accounts under which ERP 8.0 runs, establishing printer ownership, and defining the printer. The default printer used for printing reports will be the system default printer.

Understanding Windows NT Services, Accounts, and Permissions

Before you can successfully set up a printer for Windows NT, you should understand ERP 8.0's relationship to Windows NT services, accounts, and permissions. This involves:

- Assigning permissions to the accounts under which ERP 8.0 services run
- Making printers accessible from the service programs
- Assigning ownership for accounts to enable access to printers

As shown in the following table, there are two types of service accounts and printer ownerships that you must define for the two types of printers:

Printer Type	Description
Local	The service account type can be local or network. The printer owner account can be local or network.
Network	The service account type must be network. The printer owner account must be network.

Windows NT services allow programs to run on a Windows NT platform even when there is no user logged onto the machine. For the ERP 8.0 enterprise server, you must have two ERP 8.0 service programs running:

- Network. This provides the network connection between the ERP 8.0 workstation and the ERP 8.0 enterprise server.

- Queue. This starts jobs (either batch reports or server package installations) on the enterprise server.

The accounts under which Windows NT services run must have permissions to start and stop services on the local machine. You must specify permissions for:

- Individual users (for example, administrator and guest accounts), or

- Groups of users (for example, administrators (note that this is the plural and different from an individual administrator) and everyone groups)

The accounts that automatically have permissions to start and stop services include:

- The Administrator user

- Users specifically designated by the Administrator user

- Users that belong to the group Administrators (note this is the plural, and different from an individual administrator)

- Users that belong to the group Power Users

Caution:

J.D. Edwards *highly* recommends that you use a user that belongs to the local Administrators group.

Adding a Printer

You must add a printer in Windows NT before you can use it in ERP 8.0.

► To add a printer

1. Click the Windows NT Start button.

2. Choose Settings, then choose Printers.

3. Choose Add Printer.

   The system displays the Add Printer Wizard to guide you through the remaining steps. For a local printer, these steps include selecting the port where the printer is attached, what kind of printer is being installed, the name for the printer, and where the drivers are located, if needed. For a network printer, these steps involve selecting a print server and printer, and whether the printer is the default printer for the enterprise server.

   Note: When you are defining a printer, do not use a space character in the name. If you do, ERP 8.0 will not be able to correctly read or access the physical printer.

Determining or Changing Printer Ownership

Every Windows NT printer is associated with one network account called the printer's owner. When ERP 8.0 runs a batch report, service programs must be able to access a printer. You

can define this printer to be locally accessible only by the enterprise server or remotely accessible by other network resources (for example, attached to a print server). You can specify a printer that is connected directly to a ERP 8.0 enterprise server as a local or network printer, depending on how you added the printer through the Control Panel.

The type of account that is used to run ERP 8.0 services depends on how you set up the printer:

- Local printer. Only local accounts can access the printer.

- Network printer. Only network accounts, (that is, accounts that do not belong to the local domain) can access the printer. For example, the printer name is in the form *print_server**printer_name*.

▶ **To determine or change printer ownership**

1. From Control Panel, start Printers.

2. Choose a printer and click the right mouse button.

3. Choose Properties.

4. Choose the Security tab.

5. Click the Ownership button. The Owner dialog box displays the current owner of the printer.

6. To have the account you are currently logged onto be the owner of the printer, from the Owner dialog box, choose Take Ownership.
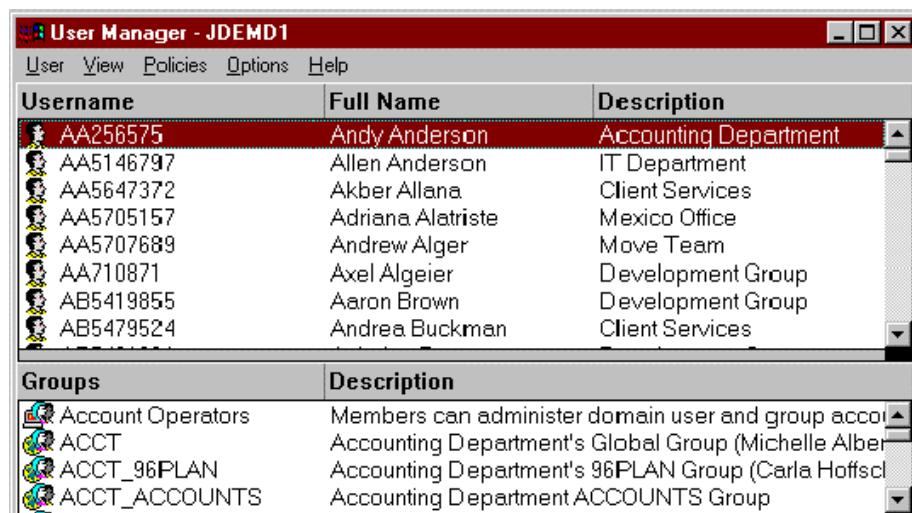
Setting Up User Accounts on an Enterprise Server

You can use these procedures to create local user accounts and to add local and network accounts to groups.

▶ **To set up user accounts on an enterprise server**

1. On the enterprise server, under Windows NT, from the Start button, choose Programs and then Administrative Tools.

2. Choose User Manager for Domains.
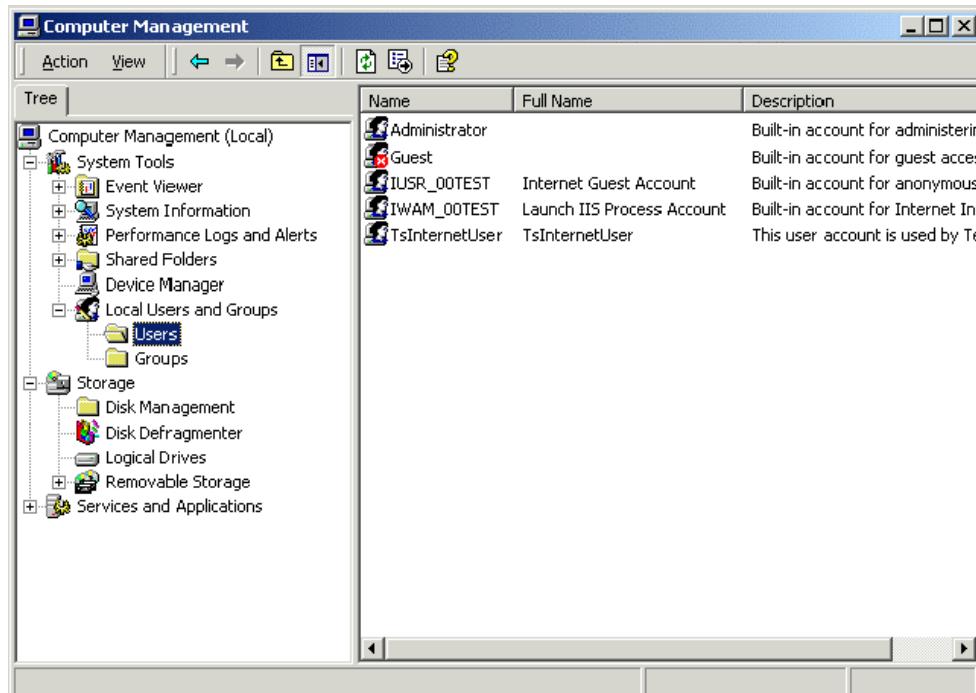
The main User Manager window shows the domain (listed in the title bar) and all the users (in the top half of the window) in that domain. In this example, the JDEMD1 domain is a network domain. If you display a local domain, the name of the local machine is displayed in the title bar.

▶ **To set up user accounts on an enterprise server (Windows 2000 users only)**

1. On the enterprise server, under Windows NT, from the Start button, choose Programs and then Administrative Tools, then Computer Management.

2. On the Tree tab, choose Local Users and Groups, then click on the Users folder.

Changing the Domain

When you create a Windows NT user account, you must associate that account with one of two domains:

- Local. This domain is associated with a particular Windows NT machine. For example, each Windows NT machine has a local "administrator" account. Local accounts cannot access network resources, such as network printers. Any account names that do not begin with a domain name are considered to belong to the local domain.

- Network. This domain is spread across a Windows NT network. Users in the network domain can access network resources, such as printers and disk drives on other servers. Account names assigned to the network domain must begin with a domain name. For example, domain1\john_doe.
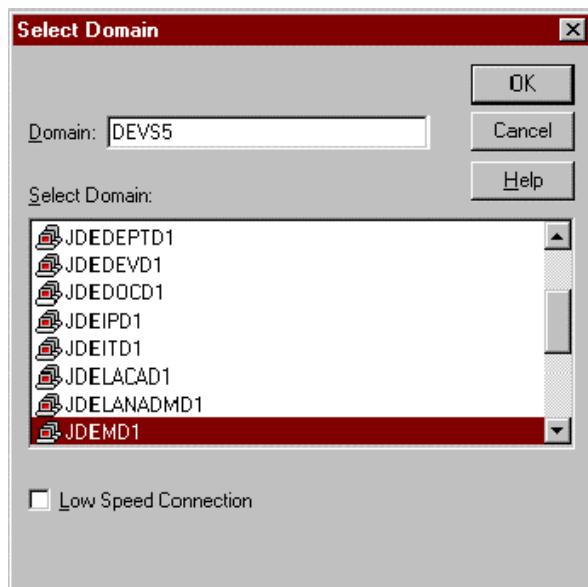
► **To change the domain**

1. From User Manager, on the main menu, choose User.

2. Choose User Domain.
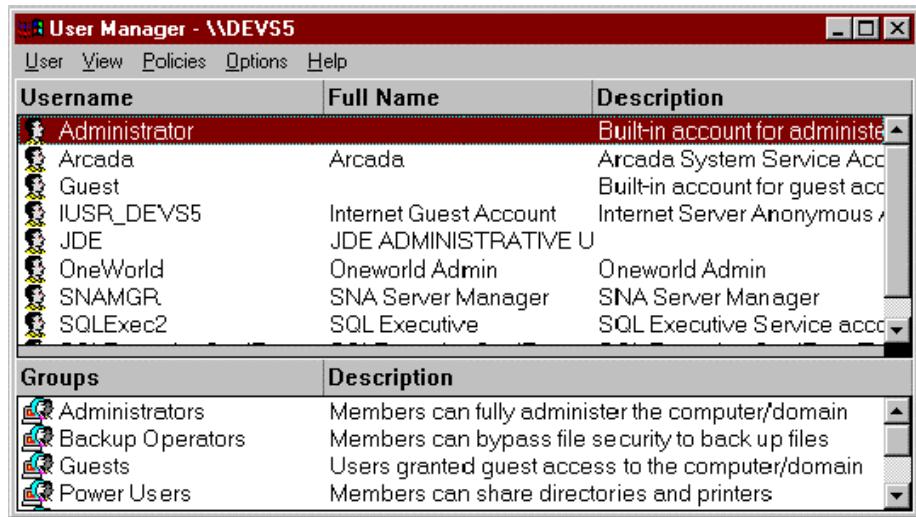
   The Select Domain window will show all domains. The local domain is named the same as the enterprise server and will not be displayed in the list. However, you can still type the name of the enterprise server in the Domain field.

   In this example, the name of the local machine is the same as the domain: DEVS5. That name is displayed in the title bar as \\DEVS5. Although that syntax might typically indicate a network machine, in this case it represents a local machine name because the name of the machine and the domain are the same.

3. Click OK.

   The User Manager window displays all the accounts for the domain you chose. If you choose a network domain, all listed names represent network accounts. Likewise, if you choose the local domain, all listed names represent local accounts.

Adding a Local Account

If you are using a local printer, you can use either a local or network account to run the ERP 8.0 services. This task shows you how to create a local account.

▶ **To add a local account**

1. Log onto Windows NT as a user with administrative privileges in the local domain.

2. Run User Manager for Domains.

3. Choose the local domain. The local machine name should be displayed in the title bar of the User Manager window.

4. From the User Manager main window, select User.

5. Choose New User.

6. Complete the following fields:

   - Username

   - Full Name

   - Description

   - Password

   - Confirm Password

7. Complete the following options as appropriate for your installation:

   - User Must Change Password at Next Logon

   - User Cannot Change Password

   - Password Never Expires

   - Account Disabled

8. Click Add.

9. Click Cancel.

1. Log onto Windows NT as a user with administrative privileges in the local domain.

2. Go to Computer Management, then System Tools, then Local User and Groups.

3. From the Action menu, choose New User.

   The New User form appears.

4. Complete the following fields:

   - User name

   - Full Name

   - Description

   - Password

   - Confirm Password

5. Complete the following options as appropriate for your installation:

   - User must change password at next logon

   - User cannot change password

   - Password never expires

   - Account disabled

6. Click Create.

7. Click Cancel.
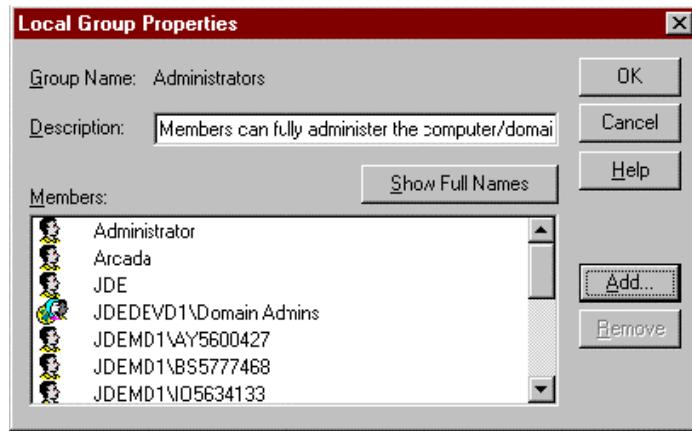
Adding a User to the Administrators Group

This procedure outlines the steps required to add an existing account (either local or network) to the Administrators group. This procedure assumes you are using the local domain.
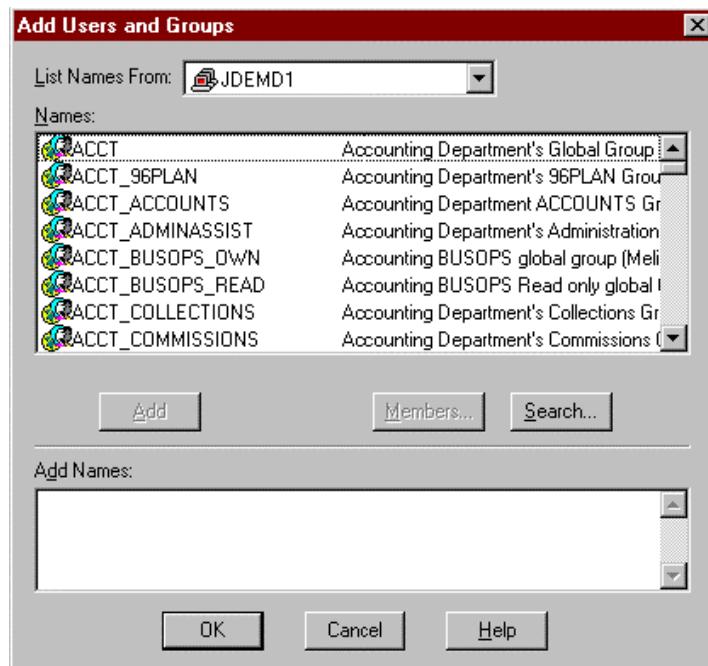
► **To add a user to the Administrators group**

1. From the User Manager main window, double-click on the Administrators group.

   The user "Administrator" belongs to the Administrators group. Local accounts are not preceded by a domain name, and network accounts are preceded by a domain name. For example, the domain member with a name JDE is a local account, and a member with the name JDEMD1\AY5600427 is a network account.

2. Click Add. In the top half of the window, a list is displayed of all users in the selected domain.

3. Choose the domain of the user you want to add to the Administrators group.

4. Choose the user whom you want to add to the Administrators group.

5. Click Add to add the user to the group and then click OK.

Working with ERP 8.0 Network and Queue Services

ERP 8.0 uses the Network and Queue services on the enterprise server. As described in the *ERP 8.0 Installation Guide (Windows NT Systems)*, these services are installed during the installation process using the following programs from the system\bin32 directory:

- jdesnet -i

- jdesque -i

When you install these services, the system adds entries to the Windows NT registry including:

- The names of the services that are displayed in the Services dialog (used when controlling the services)

- The location of the ERP 8.0 executable files

After the initial installation, you will need to reinstall the Network and Queue services only when they have been uninstalled. You will need to uninstall these services only in cases where the ERP 8.0 directory tree is renamed, moved, or deleted.

Assuming that the Network and Queue services are installed, you must set up the services under a network account (if you are using a network printer) or a local account (if you are using a local printer). If a network account is used, it must be in either the "Administrators" or "Power Users" group.

Caution:

J.D. Edwards *highly* recommends that you use a user that belongs to the local "Administrators" group.

Setting Up the Network and Queue Services
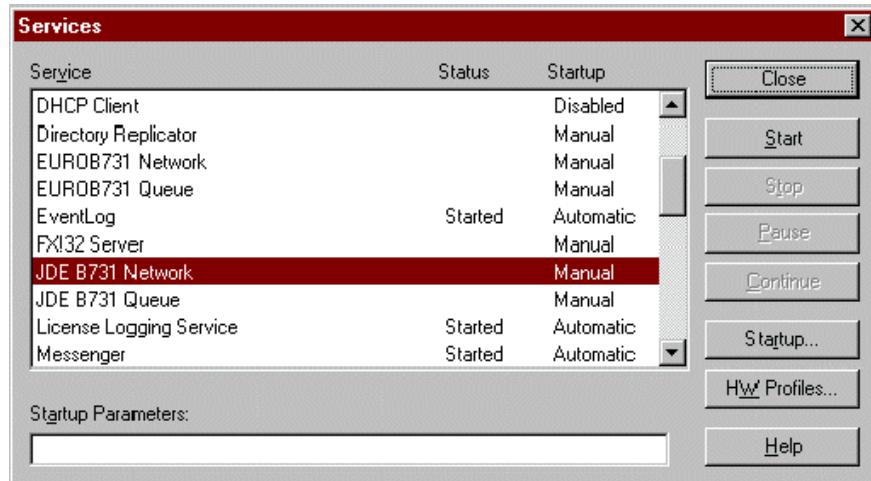
This task assumes that the Network and Queue services are installed. Set up the services under a network account (if you are using a network printer) or a local account (if you are using a local printer). Whether a network or a local account is used, it must be in either the "Administrators" or "Power Users" group.
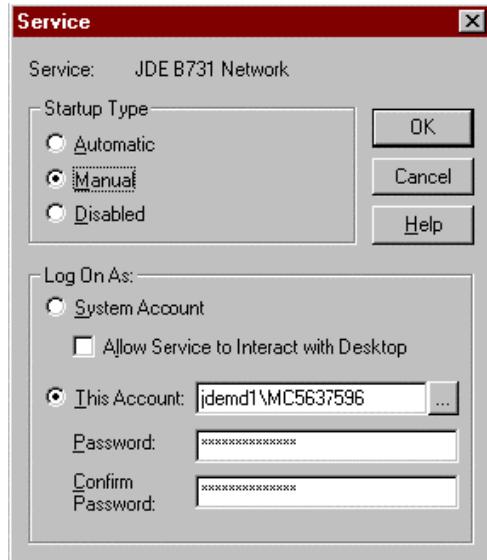
► **To set up the Network and Queue services**
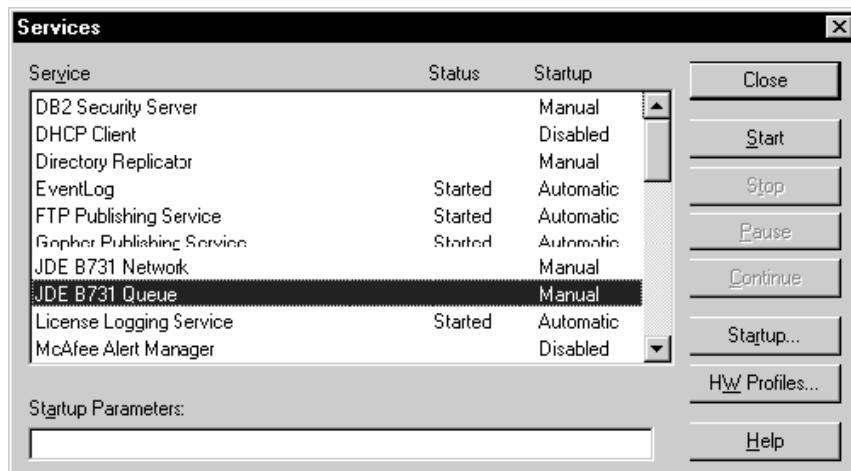
1. From Control Panel, choose Services.
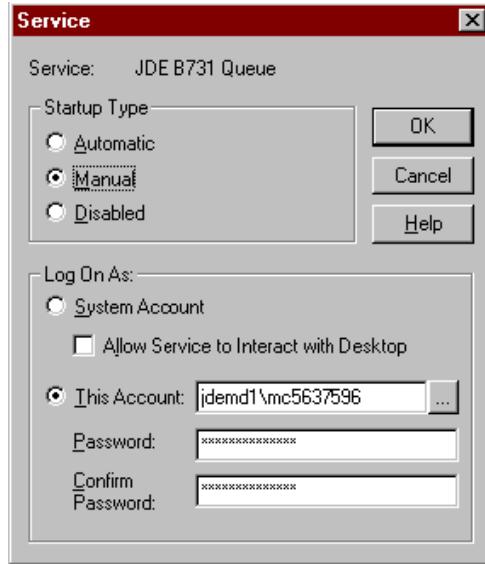
2. Choose the ERP 8.0 Network service. The name of the service is in the form "JDE *release* Network" where *release* is the current ERP 8.0 release. For example, the Network service's name for Release B73.3 is JDE B733 Network.

3. Click the Startup button.

4. Click the This Account option.

5. Enter the account name under which the ERP 8.0 Network service will run.

6. If you want ERP 8.0 to start automatically when the enterprise server boots, click the Automatic option under Startup Type.

7. Enter the password for the account and a confirmation of the password.

8. Click OK.

9. From the Services window, choose the ERP 8.0 Queue service. The name of the service is in the form JDE *release* Queue where *release* is the current ERP 8.0 release. For example, the Queue service's name for Release B73.3 is JDE B733 Queue.

10. Click the Startup button.
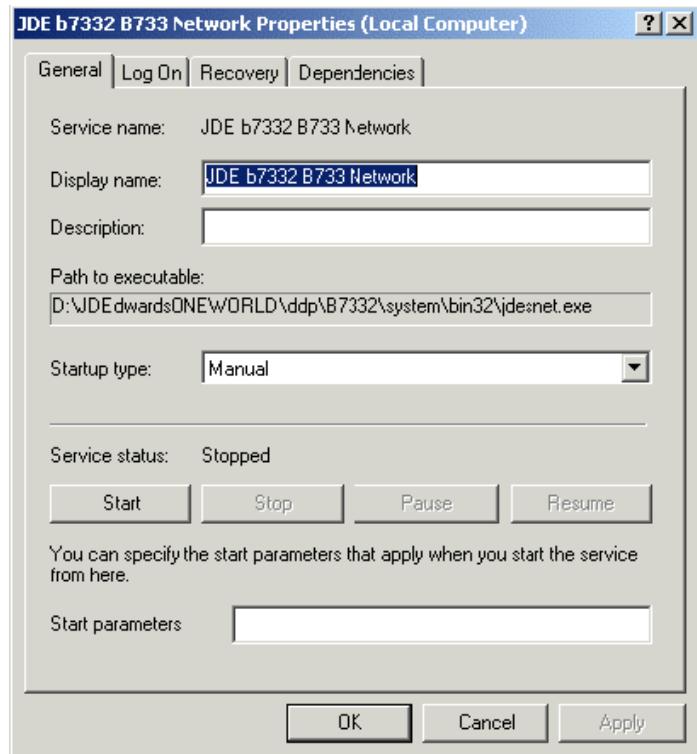
11. Click the This Account option.

12. Enter the account name under which the ERP 8.0 Queue service will run.

13. If you want ERP 8.0 to start automatically when the enterprise server boots, click the Automatic option under the Startup Type heading.

14. Enter the password for the account and a confirmation of the password.

15. Click OK.
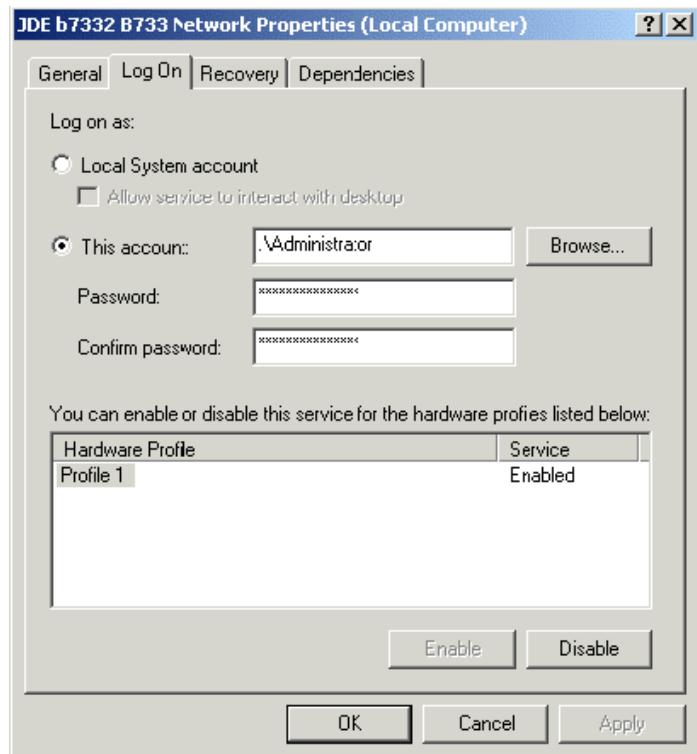
► **To set up the Network and Queue services (Windows 2000 users only)**
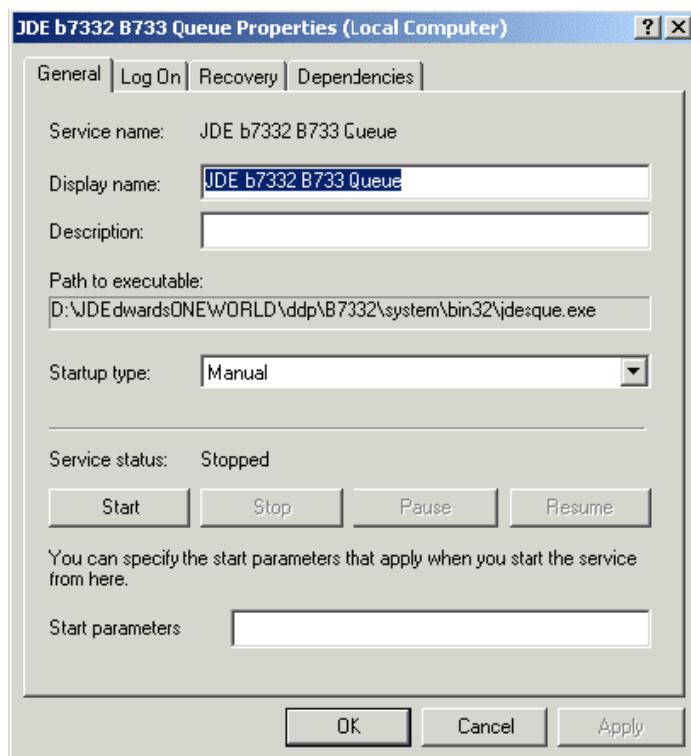
1. From the Start menu, choose Programs, then Administrative Tools, then Services.

2. Choose the ERP 8.0 Network service. The name of the service is in the form "JDE *release* Network" where *release* is the current ERP 8.0 release. For example, the Network service's name for Release B73.3 is JDE B733 Network.

3. Click Action, then Properties.
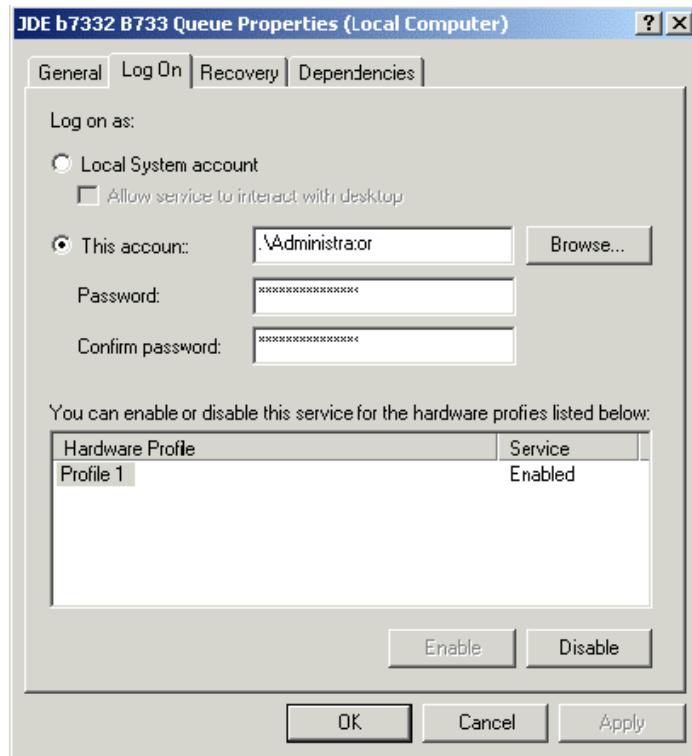
4. On the General tab, if you want ERP 8.0 to start automatically when the enterprise server boots, click the Automatic option under Startup Type.

5. On the Log On tab, click the This Account option.

6. Enter the account name under which the ERP 8.0 Network service will run.

7. Enter the password for the account and a confirmation of the password.

8. Click OK.

9. From the Services window, choose the ERP 8.0 Queue service. The name of the service is in the form JDE *release* Queue where *release* is the current ERP 8.0 release. For example, the Queue service's name for Release B73.3 is JDE B733 Queue.

10. From the Action menu, choose Properties.

11. On the General tab, if you want ERP 8.0 to start automatically when the enterprise server boots, click the Automatic option under the Startup Type heading.   .

12. On the Log On tab, click the This Account option.

13. Enter the account name under which the ERP 8.0 Queue service will run.

14. Enter the password for the account and a confirmation of the password.

15. Click OK.
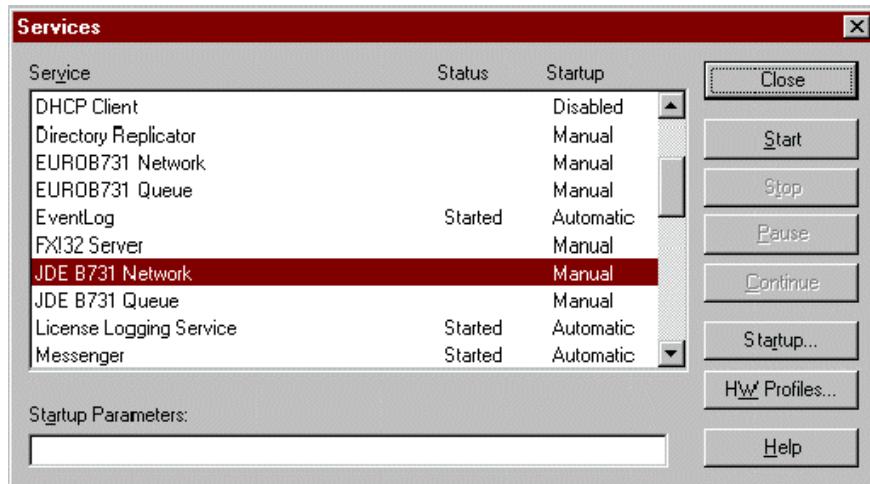
Starting the Network and Queue Services

After you have installed and set up the Network and Queue services, you must start the services before ERP 8.0 can use them.
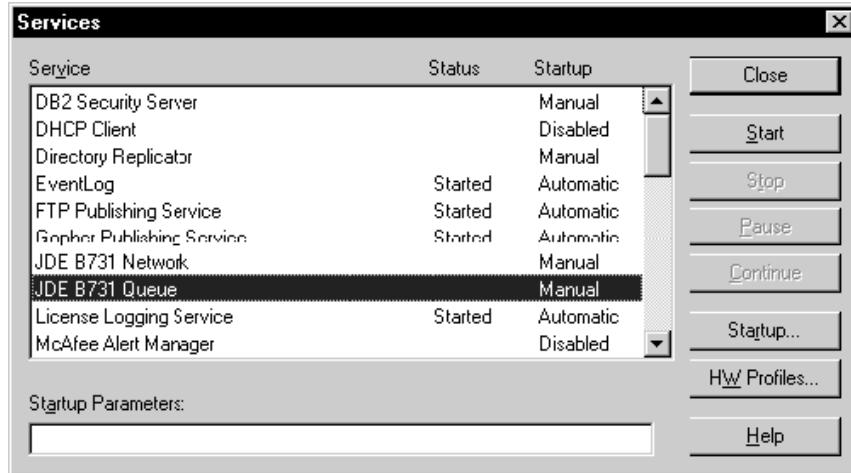
Follow these steps in the proper sequence. You must always start the Network service before you start the Queue service because the Queue service requires access to the Network service program.

► **To start the Network and Queue services**
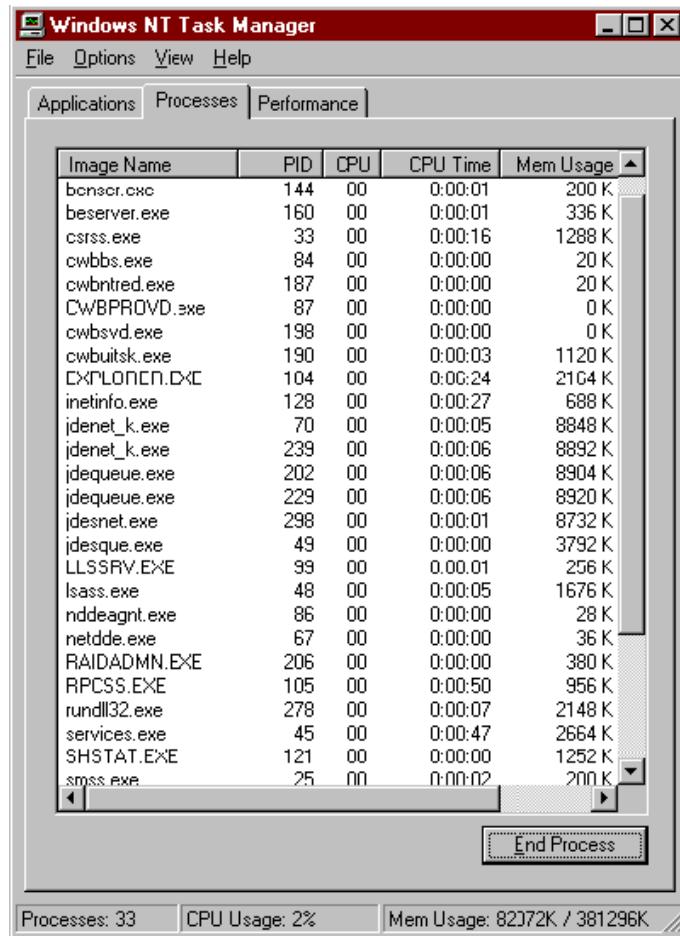
1. From the Services window, choose the ERP 8.0 Network service. The name of the service is in the form "JDE *release* Network" where *release* is the current ERP 8.0 release. For example, the Network services name for Release B73.3 is JDE B733 Network.

2. Click the Start button.

3. When the Network starts, choose the ERP 8.0 Queue service. The name of the ERP 8.0 Network service is in the form "JDE *release* Queue." For example, the Queue services name for Release B73.3 is JDE B733 Queue.

4. Click the Start button

5. Use the Windows NT Task Manager to ensure that the following processes are running:

   - jdesnet.exe

   - jdesque.exe

   - jdequeue.exe (there could be one or more identically named jdequeue processes)

   - jdenet_k.exe processes (there could be none, one, or more)

Windows NT Task Manager

Image Name	PID	CPU	CPU Time	Mem Usage
bcnscr.cxc	144	00	0:00:01	200 K
beserver.exe	160	00	0:00:01	336 K
csrss.exe	33	00	0:00:16	1288 K
cwbbs.exe	84	00	0:00:00	20 K
cwbntred.exe	187	00	0:00:00	20 K
CWBPROVD.exe	87	00	0:00:00	0 K
cwbsvd.exe	198	00	0:00:00	0 K
cwbuitsk.exe	190	00	0:00:03	1120 K
EXPLORER.EXE	104	00	0:00:24	2104 K
inetinfo.exe	128	00	0:00:27	688 K
jdenet_k.exe	70	00	0:00:05	8848 K
jdenet_k.exe	239	00	0:00:06	8892 K
jdequeue.exe	202	00	0:00:06	8904 K
jdequeue.exe	229	00	0:00:06	8920 K
jdesnet.exe	298	00	0:00:01	8732 K
jdesque.exe	49	00	0:00:00	3792 K
LLSSRV.EXE	99	00	0.00.01	256 K
lsass.exe	48	00	0:00:05	1676 K
nddeagnt.exe	86	00	0:00:00	28 K
netdde.exe	67	00	0:00:00	36 K
RAIDADMN.EXE	206	00	0:00:00	380 K
RPCSS.EXE	105	00	0:00:50	956 K
rundll32.exe	278	00	0:00:07	2148 K
services.exe	45	00	0:00:47	2664 K
SHSTAT.EXE	121	00	0:00:00	1252 K
smss.exe	25	00	0:00:02	200 K

End Process

| Processes: 33 | CPU Usage: 2% | Mem Usage: 82072K / 381296K |

► **To start the Network and Queue services (Windows 2000 users only)**

1. From the Services window, choose the ERP 8.0 Network service. The name of the service is in the form "JDE *release* Network" where *release* is the current ERP 8.0 release. For example, the Network services name for Release B73.3 is JDE B733 Network.

2. From the Action menu, click the Start button.

3. When the Network starts, choose the ERP 8.0 Queue service. The name of the ERP 8.0 Network service is in the form "JDE *release* Queue." For example, the Queue services name for Release B73.3 is JDE B733 Queue.

4. From the Action menu, click the Start button

5. Use the Windows NT Task Manager to ensure that the following processes are running:

   - jdesnet.exe

   - jdesque.exe

   - jdequeue.exe (there could be one or more identically named jdequeue processes)

   - jdenet_k.exe processes (there could be none, one, or more)

Stopping the Network and Queue Services

Follow these steps in the proper sequence. You must always stop the Queue service before you stop the Network service.

► **To stop the Network and Queue services**

1. From the Services window, choose the Queue service. The name of the ERP 8.0 Network service is in the form "JDE *release* Queue." For example, the Queue services name for Release B73.3 is JDE B733 Queue.

2. Click the Stop button.

3. Click Yes at the next prompt.

4. When the Queue stops, choose the Network service. The name of the ERP 8.0 Network service is in the form "JDE *release* Network." For example, the Network services name for Release B73.3 is JDE B733 Network.

5. Use the Windows NT Task Manager to ensure that all ERP 8.0 processes are terminated. This may take several minutes. If the processes do not terminate in a normal manner, see *Cleaning Up the Enterprise Server for Windows NT* in this guide. The following processes should be terminated and, therefore, should not appear in the Task Manager list of processes:

   - jdesnet.exe
   - jdesque.exe
   - jdequeue.exe
   - jdenet_n.exe
   - jdenet_k.exe
   - killque.exe
   - runbatch.exe
   - ipcsrv.exe

► **To stop the Network and Queue services (Windows 2000 users only)**

1. From the Services window, choose the Queue service. The name of the ERP 8.0 Network service is in the form "JDE *release* Queue." For example, the Queue services name for Release B73.3 is JDE B733 Queue.

2. From the Action menu, click the Stop button.

3. Click Yes at the next prompt.

4. When the Queue stops, choose the Network service. The name of the ERP 8.0 Network service is in the form "JDE *release* Network." For example, the Network services name for Release B73.3 is JDE B733 Network.

5. Use the Windows NT Task Manager to ensure that all ERP 8.0 processes are terminated. This may take several minutes. If the processes do not terminate in a normal manner, see *Cleaning Up the Enterprise Server for Windows NT* in this chapter. The following processes should be terminated and, therefore, should not appear in the Task Manager list of processes:

   - jdesnet.exe
   - jdesque.exe

- jdequeue.exe

- jdenet_n.exe

- jdenet_k.exe

- killque.exe

- runbatch.exe

- ipcsrv.exe

Cleaning Up the Enterprise Server for Windows NT

After ERP 8.0 is shut down, you can determine if there are processes that did not complete normally. If so, you need to clean up the enterprise server. Unforeseen circumstances can cause ERP 8.0 processes not to terminate as expected. Processes that do not terminate normally are called runaway processes. After shutting down ERP 8.0, look for any runaway processes, and if any exist, manually terminate the processes.

► **To clean up the enterprise server for Windows NT**

1. In the Processes tab of Task Manager, search for any ERP 8.0 Host Server processes (for example, jdesnet, jdesque, jdenet_n, jdenet_k, jdequeue, killque, runbatch).

   Wait until all the ERP 8.0 Host Server processes are terminated. This is especially applicable to the killque processes. If all processes terminate, you do not need to perform any clean up tasks; skip to the next section. Otherwise, continue with the next step.

2. Choose a process in Task Manager.

3. Click End Process. If this does not terminate the runaway process, continue with the next step.

4. In Task Manager, right click on the process and select debug.

5. When the Visual C++ main window appears, from the Debug menu, choose the Stop debugging option.

6. Exit from Visual C++. Repeat for each runaway process.

If none of the above procedures stops the runaway process, reboot the enterprise server.

Uninstalling the Network and Queue Services

As an administrator, it is important to consider that before you rename, move, or delete the ERP 8.0 directory tree, you must uninstall ERP 8.0's Network and Queue services. This uninstallation process removes entries from the Windows NT registry including:

- The names of services that show up in the Services dialog (see *Starting the Network and Queue Services*)

- The location of the ERP 8.0 executable files

After you have renamed or moved the directory tree, or for new installations, you should reinstall the services. See *Setting Up the Network and Queue Services.*

► **To uninstall the Network and Queue services**

Run the following programs from the \system\bin32 directory:

- jdesnet -u

- jdesque -u

Manually Starting the Enterprise Server for Windows NT

If ERP 8.0 does not run through the Control Panel Services applet, you can run Network and Queue manually. For instructions on automatically starting ERP 8.0, see the applicable steps in *Setting Up the Network and Queue Services*.

Note:

If you start ERP 8.0 manually, you must stop the ERP 8.0 processes using the Windows NT Task Manager.

The jdequeue command launches a program that sets up the queue environment for ERP 8.0 and has the following parameters:

Parameter	Description
$USER	Identifies the account name of any valid user of ERP 8.0.
$PWD	Identifies the password for the user.
$ENV	Identifies the environment.
$BATCH	Identifies the name of the batch queue. This value should match that of the Qname field in the [NETWORK QUEUE SETTINGS] section of the jde.ini file on the workstation.
$TYPE	Identifies the batch process engine. Valid values are: • UBE. Identifies the engine used for processing batch reports. • PKG. Identifies the engine used for processing server package installations.
QueueDelay	Identifies the time in seconds that the host server checks for new jobs to process. Generally, this value is specified as 30 seconds.

► **To manually start the enterprise server for Windows NT**

1. Log on to the enterprise server for Windows NT with administrator privileges.

   If you used the J.D. Edwards recommended user ID as described in the *ERP 8.0 Installation Guide,* the user ID value is JDE.

2. Click the Windows NT Start button, choose Run and then enter the following commands in the Open field:

```
drive: OneWorldpath\system\bin32\jdenet_n

drive: OneWorldpath\system\bin32\jdequeue
```

where *parameters* controls such queue values as user, password, environment, queue name, and delay, and OneWorldpath is the path to the ERP 8.0 installation.

- jdenet_n

  This command launches an executable program that starts the ERP 8.0 network (JDENet) internal processes.

- jdequeue *parameters*

  The jdequeue command launches a program that sets up the queue environment for ERP 8.0. The parameters for this command are described in the overview for this task.

  If you run jdenet_n and jdequeue from a command prompt, ensure that the working directory for both commands is the subdirectory \system\bin32.

Verifying the ERP 8.0 Installation

You can verify your ERP 8.0 installation with the PORTTEST program.

Note:

When you run PORTTEST, make sure that one of the following is true:

- If the network service, such as jdesnet.exe, is running, make sure that you are logged on to NT under the same user account as the net service is running. You can then run PORTTEST from a command prompt.
- If the network process, such as jdenet_n.exe, is run from the command prompt, you can run PORTTEST from the command prompt.

► **To verify the ERP 8.0 installation**

In the command line, enter the following commands:

```
cd \jdedwardsoneworld\b733\ddp\system\bin32

porttest <userid> <password> <environment>
```

The program initializes an environment, initializes a user, opens a table (F0902), and displays up to 99 rows of data. The number of rows of data that the program displays depends on the data in the table. If you run the program before anyone enters data into the table, you will not see any data on the screen. In this case, the lack of data does not indicate an error. Review the messages on the screen and the corresponding jde.log file to determine the results of the program.

Note:

The parameters for user ID, password, and environment would most likely be the same ones you used in jdequeue. However, these parameters can be any valid ERP 8.0 user ID, password, or environment.

Administrating Batch Processes for Windows NT

Administering batch processes involves knowing the processes that run when ERP 8.0 starts, where files are placed before and after printing, and how to watch those processes.

Processes running for ERP 8.0 are owned by the user who started the ERP 8.0 software, although this cannot be tracked by Windows NT Task Manager. When ERP 8.0 starts, a number of processes start and run under the environment and security of the user that started them. These processes are:

Process	Description
jdesnet.exe	This is the network listener that listens for connection requests.
jdesque.exe	This is the process responsible for starting the queues.
jdequeue.exe	This is the process that searches the database queues and starts report processing.
jdenet_n.exe	This is also a network listener that listens for connection requests. Depending on the jde.ini setting, zero, one, or more of these processes can run simultaneously.
jdenet_k.exe	This is the job responsible for coordinating efforts between the net and queues. It is not started until the first batch job is submitted to the server.
runbatch.exe	This is the job responsible for executing the submitted reports.
ipcsrv.exe	This is the process responsible for passing Binary Large Objects (BLOBs) between other processes.

Monitoring Batch Processes

You can use the Task Manager to continuously monitor the performance of each job, the amount of CPU time it is consuming, and the amount of memory it is utilizing. By default, the display refreshes every second.

Reviewing Batch Output Files

All output from each report, regardless of whether it is a preview, is placed in the PrintQueue directory under the ERP 8.0 installation directory before being printed. Depending on the jde.ini settings of the workstation that submitted the job, the job may or may not be deleted after being printed. Unless the submitter identified a printer, jobs are printed to the default printer you have specified for the enterprise server.

Two settings, based upon the workstation's jde.ini file, tell the server whether to print the report immediately upon completion and whether to save the output from the report or delete it. Both of these workstation settings are shown below:

```
 [NETWORK QUEUE SETTINGS]

SaveOutput=TRUE

PrintImmediate=TRUE
```
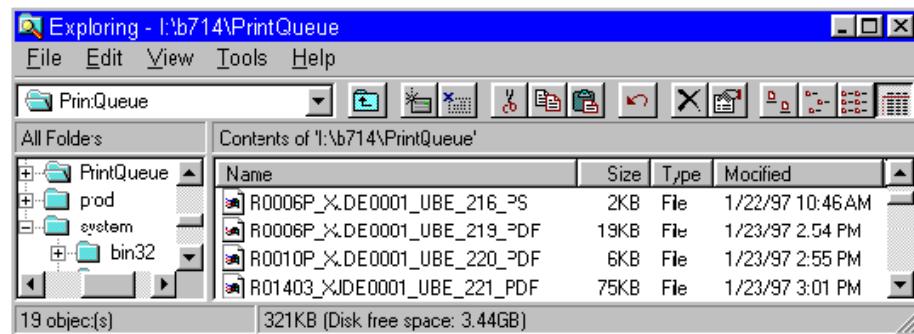
Setting SaveOutput to TRUE causes the enterprise server to hold the jobs within the PrintQueue directory until the user explicitly deletes them. Setting PrintImmediate to TRUE tells the enterprise server to print the job immediately after completion of the report.

Users should be strongly encouraged to use the SaveOutput=FALSE entry in their jde.ini file. If users should decide to save their output, they should be encouraged to periodically delete the entries through ERP 8.0. Deleting the output files from the operating system will not

delete the corresponding ERP 8.0 print job entries (for example, entries might still exist in the database). These print job entries still have to be cleaned up manually.

To list all files waiting in the PrintQueue directory, use Windows Explorer to change your working directory to the PrintQueue directory.

Output looks similar to the following:

These file names are the actual reports that were generated when the job was executed. The filenames follow these conventions:

Convention	Description
S_	Identifies the first part of a file name. This indicates that a spec installation was performed by the workstation. The system will omit this prefix if no specification installation was performed.
R0006P	Identifies the report name.
XJDE0001	Identifies the report version.
UBE	Identifies the type of request.
216	Identifies the request number assigned by ERP 8.0.
PS	Indicates a PostScript file.
PDF	Indicates a PDF (Portable Document Format) file. This file can be viewed on the workstation using Adobe Acrobat.

Running Reports from the Command Line for Windows NT

If you are a user with the proper authority and path (equal to that described in the installation instructions), you can run batch report processes from the server command line by issuing the following commands:

cd to ERP 8.0's system\bin32 directory

```
runube UserName Password Environment ReportName VersionName JobQueue
Interactive|Batch Print|Hold Save|Delete [OutQ]
```

For the command parameters Interactive, Batch, Print, Hold, Save, and Delete, only the first character of the parameter name is required. The vertical bar symbol "|" indicates that you

must specify one of the parameters on either side of the vertical bar. The bracket symbols "["
and "]" indicate an optional parameter. The following options apply to the runube command:

Parameter	Description
Interactive	Runube processes the report and outputs a .pdf file. The queueing mechanism is skipped altogether.
Batch	The runube command starts a runbatch job and returns control of the terminal to the user. Runube writes a record to the Job Control Maintenance (F986110) table. Jdequeue retrieves this record and starts a runbatch process. Runbatch processes the report and outputs a .pdf file.
Print	The batch process report is spooled to the PrintQueue directory and then printed on the specified printer (OutQ). If you do not specify a printer, the system uses the default printer that you have specified for the enterprise server.
Hold	The system places the spool file in the PrintQueue directory for later printing at the user's request.
Save	The system saves the file after printing. If you specify Delete, the system will remove the file from the PrintQueue directory after it is printed.
Delete	The system removes the file from the PrintQueue directory after the report prints.
OutQ	Optional. This is the printer name on which the given report is printed. If this option is not specified, the report will be printed on the enterprise server's default printer.

Example: Running Reports from the Command Line for Windows NT

This example shows commands for executing a batch process report:

```
cd \jdedwardsoneworld\b733\ddp\system\bin32

runube KL5595218 KL5595218 PROD R0006P XJDE0001 QBATCH Interactive
Print Delete printer_1
```

Scheduling Reports from the Command Line for Windows NT

You can schedule a report from the command line for processing on a future date, daily, or even on a recurring day of the week. To schedule one-time only reports, use the "at" command.

If you issue jobs with the "at" command, they run in the background. However, the "at" command is designed to allow you to schedule a future time of execution. You can use this command to run a batch job during off-peak hours.

Note:

Use of the "at" command is dependent on the security configured on the Windows NT enterprise server. You should be careful to limit the amount of access that users have to submit jobs on the server. If possible, this type of scheduling should only be done by the administrator.

The command format for the "at" command is:

```
at [\\computername\ time [/INTERACTIVE] [/EVERY:date[,...] |
/NEXT:date[,...]] command
```

where the following options apply:

Parameter	Description
\\computername	Identifies the computer on which to run the program. If you do not specify a value, the default is the local machine.
time	Specifies the time to run the job (for example, 08:00).
/Windows INTERACTIVE	Allows the program to interact with the Windows NT operating system desktop.
/EVERY:date	Specifies the days to run the job. Valid values are M, T, W, Th, F, S, and Su.
/NEXT:date	Specifies the next date for the first execution. If you do not specify a value, the default is today's date.
command	Specifies the command to run. To run batch jobs here, use the runube command with any of its parameters.

Example: Scheduling Reports from the Command Line for Windows NT

This example shows a sample "at" command that you can use to schedule a ERP 8.0 batch report to run on the DEPLOY machine at 06:00 every Sunday:

```
at \\DEPLOY 06:00 /EVERY:Su z:\b731\system\bin32\runube KL5595218
KL5595218 PROD R0006P XJDE0001 QBATCH Interactive Print Delete
printer_1
```

Understanding jde.ini Settings for Starting Batch Queues on Windows NT

The following jde.ini settings are used to start batch queues on the Windows NT enterprise server.

```
 [NETWORK QUEUE SETTINGS]

UBEQueues=number of batch queues

UBEQueue1=batch queue name

UBEQueue2=batch queue name

PackageQueues=number of package queues

PkgQueue1=package queue name

PkgQueue2=package queue name

SpecInstallQueues=number of spec install queues

SpcQueue1=spec install queue name

QEnv=queue environment

QUser=queue user

QPassword=queue user password
```

Variable Value	Description
number of batch queues	Identifies the number of batch queues available. **Note:** If you do not define a number of batch queues that matches the number defined here, ERP 8.0 uses QBATCH when a missing queue is called.
batch queue name	Identifies the name of the batch queue. For example, for UBEQueue2, you might define the queue as QBATCH2. **Note:** You should define a number of batch queue names equal to the value you define for the number of batch queues.
number of package queues	Identifies the number of package queues available. **Note:** If you do not define a number of package queues that matches the number defined here, ERP 8.0 uses QBATCH when a missing queue is called.
package queue name	Identifies the name of the package queue. For example, for PkgQueue2, you might define the queue as XBATCH2. **Note:** You should define a number of package queue names equal to the value that you define for the number of package queues.
number of spec install queues	Identifies the number of spec install queues available. **Note:** If you do not define a number of spec install queues that matches the number defined here, ERP 8.0 uses QBATCH when a missing queue is called.
spec install queue name	Identifies the name of the spec install queue. For example, for PkgQueue2, you might define the queue as XBATCH2 **Note:** You should define a number of spec install queue names equal to the value you define for the number of spec install queues.
queue environment	Identifies the ERP 8.0 environment under which the Windows NT operating system starts the queues.
queue user	Identifies a valid ERP 8.0 user.
queue user password	Identifies the password for the queue user.

Utilizing Active Directory

Windows 2000 Active Directory is Microsoft's implementation of a hierarchical, object-based directory service for managing system resources, including developers, end users, and groups. If you publish ERP 8.0 server information in Active Directory, client workstations use this information to locate and connect to the server dynamically. If ERP 8.0 service changes from one server to another, workstations can still connect to the server by referencing published server information in Active Directory.

Note:

Active Directory is a Windows 2000 feature, and its use with ERP 8.0 is platform specific and optional. If you are running ERP 8.0 enterprise servers on Unix or AS/400 platforms, ERP 8.0 client workstations will still reference their jde.ini files to connect to the server.

SCP Object in Active Directory

ERP 8.0 NT service installation creates a Service Connection Point (SCP) object in Active Directory. The SCP object specifies:

- The server name

- The port number

For details on NT installation, see *ERP 8.0 Installation Guide (Windows NT-Based Systems)*.

Starting ERP 8.0 service on a server automatically updates the SCP object with the server name and port number and establishes the SCP object status as "running." If service stops, the status of the SCP object automatically changes to "stopped."

Note:

ERP 8.0 NT service installation creates the SCP object in Active Directory only if you have added an [Active Directory] section to the server's jde.ini file *before* installation. See *Additions to the Server jde.ini File* in this chapter for more details on adding an [Active Directory] parameter value to the server jde.ini file.

When a user signs on to ERP 8.0, ERP 8.0 searches Active Directory for an SCP object with a service name that matches the parameter value in the [Active Directory] section of the workstation jde.ini file. ERP 8.0 chooses an SCP object whose status is "running" and retrieves the server name and port number, which enables the workstation to make a connection to the server.

Additions to the Server jde.ini file

For each server that you publish in Active Directory, you must add an [Active Directory] section in the server's jde.ini file. In the [Active Directory] section, you include the SCPToPublish entry, which identifies the SCP object in the Active Directory.

The value of the SCPToPublish parameter should be unique for each object, and you should consistently adhere to a naming convention for ease of administration. For example, the value of each SCPToPublish parameter might represent a version of ERP 8.0.

The following table demonstrates a sample entry to the [Active Directory] section of the server jde.ini file.

Parameter of [Active Directory] Section of Server jde.ini File	Parameter Value
SCPToPublish	JDEDWARDS_ONEWORLD_B733_SP12

If you move ERP 8.0 service from one server to another or change the service port number, no changes to the workstation jde.ini file are needed, so long as the name of the SCP object in Active Directory and the parameter values of the [Active Directory] section of the workstation jde.ini file match.

Note:

Although users can automatically connect to a new server if a change in service is made, UBEs and business functions will not automatically be mapped to the new server. Therefore, you will likely have to change users' OCM mappings in order to point them to the new data source.

Additions to the Workstation jde.ini File

You also add an [Active Directory] section to the workstation jde.ini file that specifies the name of the SCP object that contains port number and server name information.

The following parameters are included in the [ActiveDirectory] section of the workstation jde.ini file:

- JdenetSCP (the connection port)
- SecurityServerSCP (the security server)
- LockManagerSCP (the Lock Manager)
- UnifiedLogonServerSCP (unified logon server)

For each of these parameters, you assign as the value the name of the SCP object in the Active Directory file, for example, JDEDWARDS_ONEWORLD_B733_SP12.

The following table presents an example of the parameters that you add to the [Active Directory] section of the workstation jde.ini file. The value of each parameter is the SCP object name in Active Directory.

Parameter of [Active Directory] Section of Workstation jde.ini File	Meaning	Parameter Value: name of SCP Object in Active Directory
JdenetSCP	Connection port	JDEDWARDS_ONEWORLD_B733_SP12
SecurityServerSCP	Security server	Same as above
LockManagerSCP	Lock manager	Same as above
UnifiedLogonServerSCP	Unified logon server	Same as above

Maintaining File Security for Windows NT
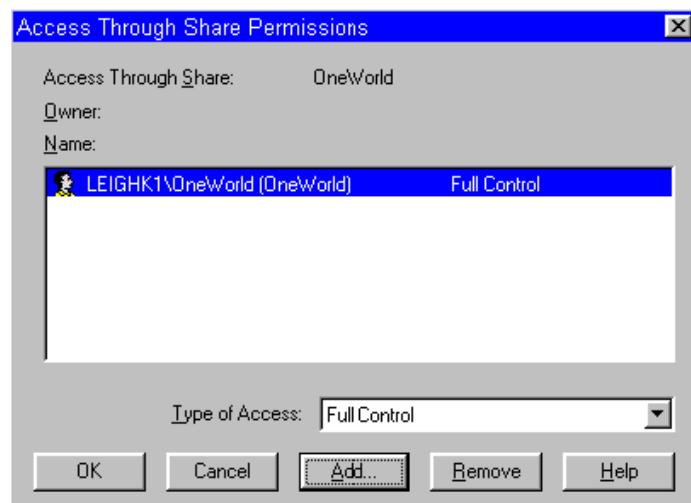
You should be aware of the security that is set for the files on a ERP 8.0 enterprise server. On a system-wide basis, only two accounts will ever need operating system access to the ERP 8.0 environment files and version executables:

- The account that starts and stops ERP 8.0
- The account that builds the environment specification (SPEC) and business function (BSFN) files (if this account is separate from the startup and shutdown account)

Specification File Security

SPEC files are the first part of the environment files. You access these files by the ERP 8.0 kernel processes. These files should never be accessed directly by an operating system user. Because of this, security on these files should be read/write for the user and group. They are not executables, so there is no need to set the executable option for any user, group, or other.

You should assign SPEC file security in a manner similar to the following:

Business Function File Security

You should keep business functions secure. In an environment where development takes place, you must have a strict form of version control on these source and object files. If the business function files change without the knowledge of the ERP 8.0 administrators, rebuilding them could have unknown or undesired results. Most likely a developer is working to correct a problem, but the possibility always exists that the problem could become worse.

You should set security on the source, include, and object files at a higher level of security.

ERP 8.0 Executables Security

You should prevent access to ERP 8.0 executable files to prevent other users from attempting to start up ERP 8.0. Running the same version of ERP 8.0 on the same system, using the same jde.ini settings can cause unpredictable results. In most cases, the second startup will fail, but giving users access to the shutdown procedures allows them to shutdown ERP 8.0.

jde.ini File (Enterprise Server) Security

You must keep the jde.ini file on the Windows NT enterprise server as secure as possible. This file contains a database user name and password that enables ERP 8.0 security to function. This database account is given read authority to the F98OWSEC table, which controls ERP 8.0 access.

The F98OWSEC table contains privileged database user names and passwords, which could then give a user the ability to manipulate any data in the database, regardless of its sensitivity or security. Because of this situation, access to the enterprise server jde.ini file should be kept to the bare minimum.

Denying written access to ERP 8.0 is not entirely necessary but prevents accidental modification of jde.ini settings that could adversely affect the operation of ERP 8.0.

Because it is so important to keep access to the jde.ini file as secure as possible, you should also limit the amount of access to the ERP 8.0 account (or the user account that starts and stops ERP 8.0) to a minimum. Users with access to this account could easily obtain the F98OWSEC user names and passwords, and gain privileged access to the database.

Running Multiple Instances of ERP 8.0 on Windows NT/2000

You can run multiple instances of ERP 8.0 on a Windows NT/2000 server. You might do so to test a new service or to upgrade to a new version of ERP 8.0. It is not necessary to install a separate machine to run multiple instances of ERP 8.0, so long as you follow a series of prescribed steps.

Before You Begin

❑ Make sure you have enough disk space to create copies of your current ERP 8.0 system directory and at least one path code directory.

❑ Make sure that you install each new instance of ERP 8.0 in a separate directory tree and that the version-level directories are different. For example, ERP 8.0 version 1 might installed in the *z*:\OneWorld\b73_1 directory tree, while ERP 8.0 version 2 might be installed in the *z*:\OneWorld\b73_2 directory tree.

Generating a Unique ERP 8.0 Identifier

Each instance of ERP 8.0 must have a unique identifier. You set the value of this identifier in the CLSID parameter of the server jde.ini file. To generate the identifier, you run the uuidgen program.

▶ **To generate a unique ERP 8.0 identifier**

1. From the Run window under the Start menu on the Windows NT taskbar or from a command prompt, type the following command:

```
uuidgen-oFILENAME
```

where FILENAME is the name of the file that will contain the new identifier.

Note:

For help on the uuidgen program's options, run the command

```
uuidgen-?
```

The uuidgen program creates a unique ERP 8.0 identifier and stores it in the file you specified.

2. Copy the ERP 8.0 identifier.

3. Open the server jde.ini file and paste the identifier into the CSLID parameter under the file's [JDEIPC] section.

Modifying the Server jde.ini Files

For each new instance of ERP 8.0, you modify the values of parameters in the server jde.ini file. Each value for each ERP 8.0 instance must be unique.

The following table presents the server jde.ini file parameters that require modification, the purpose of each, and example values for each:

Section of server jde.ini file	Parameter	Purpose	Example value
[DEBUG]	DebugFile=	Name of log file that will contain debugging data.	z:\OneWorld\b733_2\log\jdedebug.log
[DEBUG]	JobFile=	Name of log file that will contain log data.	z:\OneWorld\b733_2\log\jde.log
[INSTALL]	StartServicePrefix=	Prefix that will be used for names of the JDE network and queue services.	Instance 2
[INSTALL]	B733=	Base directory of the ERP 8.0 installation.	z:\OneWorld\b733_2
[JDEIPC]	StartIPCKeyValue=	Integer that indicates an arbitrary starting point in memory for interprocess communications. For multiple instances of ERP 8.0, differences between the values of the parameter must be at least 1000.	6000
[JDEIPC]	CLSID=	Unique string generated by the NT guidgen program. The string identifies each instance of ERP 8.0.	1E0CF350-AF81-11D0-BD7B-0000F6540786
[JDENET]	serviceNameListen=	The TCP/IP port number used by the server to receive communication packets from workstations.	6005

[JDENET]	serviceNameConnect=	The TCP/IP port number used by the server to send communications packets to servers.	6005

► **To modify the server jde.ini file**

1. In the system\bin32 subdirectory for each new ERP 8.0 instance, open the server jde.ini file.

2. In the [DEBUG] section of the jde.ini file, modify the values of the following parameters:

   • DebugFile=

   This is the name of the log file that will contain debugging information.

   • JobFile=

   This is the name of the file that will contain log information.

3. In the [INSTALL] section of the jde.ini file, modify the values of the following parameters:

   • StartServicePrefix=

   The value of this parameter will be used for the names of the JDE network and queue services. The names are listed in the Services window under Control Panel.

   The default is JDE followed by the current version number, for example, B733. The default produces the service names JDE B733 Network and JDE B733 Queue.

   • B733=

   The value of this parameter represents the base directory of the ERP 8.0 installation. The ERP 8.0 server uses this value to determine the location of the executables and DLLs used to run ERP 8.0 programs.

4. In the [JDEIPC] section of the jde.ini file, modify the values of the following parameters:

   • StartIPCKeyValue

   The value of this parameter indicates a starting point in memory for interprocess communications. For multiple instances of ERP 8.0, you should be sure that the difference between starting point values for each instance is at least 1000. The default value is 5000.

Caution:

To ensure that the difference between starting point values is at least 1000, check maxNumberofResources parameter in the [JDEIPC] section of the jde.ini file. If the parameter value is less than 1000, change the value.

   • CLSID=

The value of this parameter is a unique string that is generated by the NT guidgen program. For directions on running the guidgen program, see *Generating a Unique Identifier* in this chapter.

5. In the [JDENET] section of the jde.ini file, modify the values of the following parameters:

- serviceNameListen=

  The value of this parameter specifies the TCP/IP port used by the server to receive communications packets from the workstations. Each instance of ERP 8.0 must communicate with workstations through a different port.

  The default value is jde_server.

- serviceNameConnect=

  The value of this parameter specifies the TCP/IP port used by the server to send communications packets to the workstations. Each instance of ERP 8.0 must communicate with workstations through a different port.

  The default value is jde_server.

Installing Services for a ERP 8.0 Instance

You are not required to install network and queue services for an existing ERP 8.0 instance unless you change the location of the system\bin32 directory for the new instance. For example, you might decide to put the directory on a new disk.

For complete details on installing network and queue services, see *To install network and queue services* in the section *Configuring and Installing ERP 8.0 on the Enterprise Server* of the *Windows NT Systems Installation Guide*.

Modifying the Workstation jde.ini File

After you have installed services for each ERP 8.0 installation, you must modify the workstation jde.ini file so that the values of the following parameters match those you set up in the server jde.ini file:

- serviceNameListen=
- serviceNameConnect=

► **To modify the workstation jde.ini file**

1. In the workstation's Windows directory, for example, c:\winnt or c:\windows, locate and open the jde.ini file.

2. Modify the values of the following parameters to match the values in the server jde.ini file:

- sericeNameListen=
- serviceNameConnect=

Uninstalling ERP 8.0 Services

If you want to delete an instance of ERP 8.0 after you install its services, you must uninstall the ERP 8.0 services for that instance before you delete the ERP 8.0 directory tree.

► **To uninstall ERP 8.0 services**

1. From a command line prompt, change directories to the ERP 8.0 instance's system\bin32 directory. For example:

```
C:\> d:\b7\system\bin32
```

2. To uninstall network services, type the following command:

```
jdesnet -u
```

3. To uninstall queue services, type the following command:

```
jdesque -u
```

These commands remove some settings in the NT registry that were created when you installed ERP 8.0 services.

Moving or Changing a ERP 8.0 Directory Tree

If you want to move or rename a ERP 8.0 instance's directory after you install its services, you must uninstall the network and queue services and uninstall the IPC Automation Server (ipcserv.exe). You can then move or rename the ERP 8.0 directory and reinstall network and queue services. The IPC Automation Server automatically reinstalls itself when it is first used.

► **To move or change a ERP 8.0 directory tree**

1. From a command line prompt, change directories to the ERP 8.0 instance's system\bin32 directory. For example:

```
C: \> d:\b7\system\bin32
```

2. To uninstall network services, type the following command:

```
jdesnet -u
```

3. To uninstall the queue services, type the following command:

```
jdesque -u
```

4. To uninstall the IPC Automation Server, type the following command:

```
Ipcsrv -UnregServer
```

Note:

You do not need to reregister ipcsrv.exe in the new directory because the executable is automatically registered when a binary large object is first transferred via interprocess communications.

5. Move or change the directory tree.

6. Reinstall ERP 8.0 Services.

For complete details on installing network and queue services, see *To install network and queue services* in the section *Configuring and Installing ERP 8.0 on the Enterprise Server* of the *Windows NT Systems Installation Guide*.

Server Administration Workbench

The server administrator needs to be aware of the two main components of ERP 8.0 to ensure that ERP 8.0 functions properly. These components are JDENET and JDEQUEUE. The ERP 8.0 Server Administration Workbench (SAW) provides a unified interface for administrators to use while monitoring the processes of these components.

The following table provides detail information about the main processes in ERP 8.0:

Process	Description
JDENET	JDENET starts child processes that control additional communications functions and kernel processes that determine the actual ERP 8.0 client requests. For example, these client requests might include Security Server or JDE CallObject.
JDEQUEUE	JDEQUEUE reads a Job Control Status Master table (F986110), which controls the status of batch applications running on a given server, then starts a child process to run the the batch application. When ERP 8.0 completes a child process, JDEQUEUE reads the next record in F986110.

Setting up Security Access for SAW

You set up security access for SAW to ensure that only those individuals with responsibility for monitoring the server have privileges to do so. Using the ERP 8.0 Security Workbench (P00950) application, you can restrict permission to run the SAW application (P9861100) and the executable found in the \B7\system\bin32 directory.

Restricting access to SAW ensures that only administrators will have access to the application and executable, and only those administrators will have the ability to change kernel and network settings on the server.
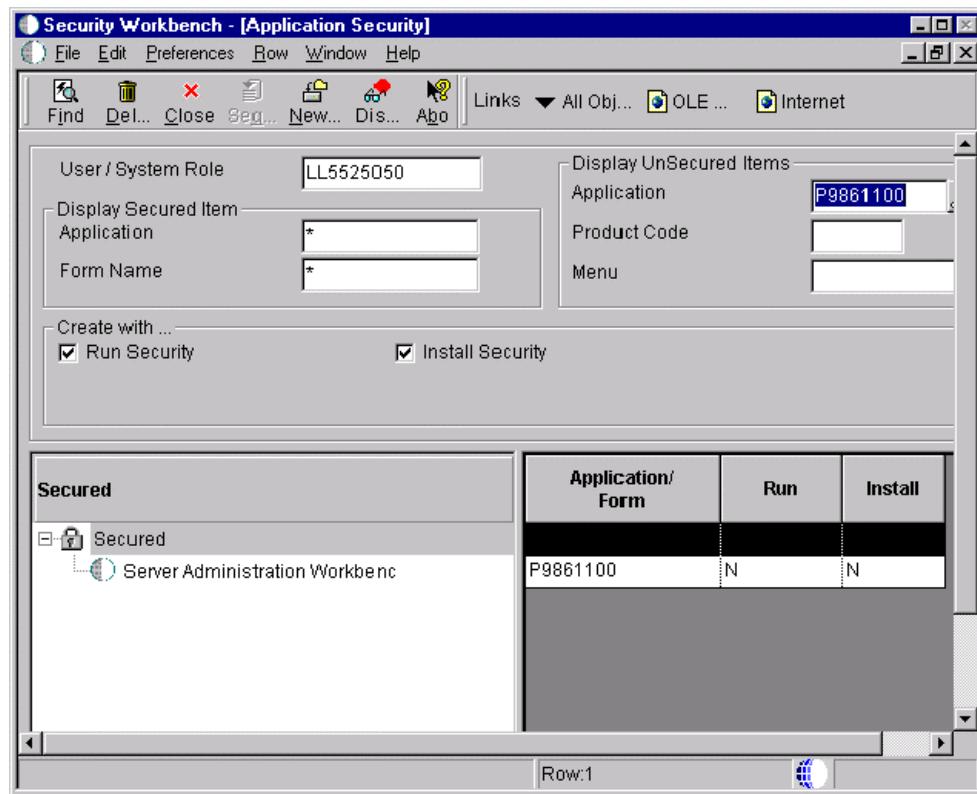
For more information on setting up group and user security and on using the Security Workbench application, see the section *Security* in the *ERP 8.0 System Administration* guide.

► **To set up security access for SAW**
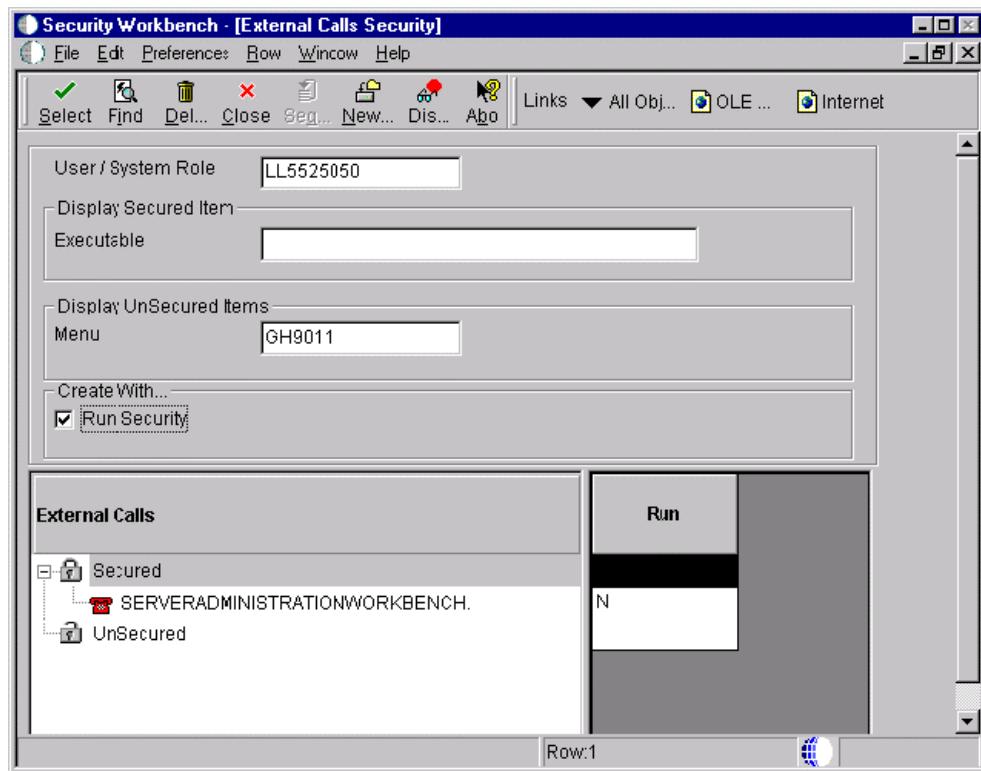
1. On the System Administration Tools menu (GH9011), choose Security Workbench (P00950).

2. In the menu bar of the Security Workbench form, click Form, and then choose Setup Security and Application.

3. In the Security Workbench - [Application Security] form, enter the user's ERP 8.0 ID in the User/System Role control.

4. Enter P9861100 in the Application control in the Display Unsecured Items field and click Find.

5. Expand the Unsecured node in the tree at the bottom of the form.

6. Choose the Run and Install options.

7. Drag the Server Administration Workbench node to the Secured node in the tree and click Find.

The SAW application name and ID should appear under the Secured node.

8. Click Close.

9. In the menu bar of the Security Workbench form, click Form, and then choose Setup Security and External Calls.

10. In the Security Workbench [External Calls Security] form, enter the user's ERP 8.0 ID in the User/System Role control.

11. Enter the ID of the ERP 8.0 menu that contains the SAW executable (for example, GH9011) in the Menu control of the Display Unsecured Items field and click Find.

12. Expand the Unsecured node in the tree at the bottom of the form.

13. Choose the Run Security option.

14. Drag the Server Administration Workbench item to the Secured node in the tree and click Find.

The Server Administration Workbench item should appear under the Secured node.

15. Click close.

After you have completed these steps, you have secured the SAW application and executable from access by unauthorized individuals. To grant a user access to SAW, you simply drag the application node and the Server Administration Workbench item from the Secured node to the Unsecured node.

► **To monitor batch processes**

Start Windows NT Task Manager by pressing Ctrl-Shift-Esc or running taskmgr.exe from a command line.

Monitoring ERP 8.0 with SAW on Windows NT

The Server Administration Workbench (SAW) provides a unified interface where administrators can view information regarding ERP 8.0 server processes. Administrators can monitor and modify the processes that they access using SAW. For example, you can change the maximum number of kernels and net processes that SAW monitors. From SAW, administrators can also access the jde.ini file for the local ERP 8.0 server and access log files for any server on the network.

The interface has two tabs:

- Query

- Monitor

The Query tab lets you add servers and view statistics about their components at a particular point in time.

The Monitor tab allows you to monitor periodically the ERP 8.0 servers that you have configured for monitoring. When you have configured a server for monitoring, you can quickly see whether processes on the server are running. Under the monitor tab, SAW also maintains an ongoing record of each test of the server processes.

Adding to the JDE.INI File

Before monitoring ERP 8.0 on Windows NT with SAW, you should add a variable to the [JDENET] section of the Windows NT enterprise server JDE.INI file. The variable allows SAW to create, transfer, and remove temporary files larger than 5 MB.

```
 [JDENET]

netTemporaryDir=<temp_dir>
```

In the new JDE.INI entry, <temp_dir> is a temporary directory that JDENET uses to create temporary files, transfer the log files, and remove them after the transfer.

Accessing SAW

SAW is a separate ERP 8.0 executable that resides by default in the \B7\SYSTEM\Bin32 directory.

When you log in to SAW, you must enter your ERP 8.0 user name and password as a validation for all servers. If you add a new server for monitoring after signing on, SAW uses the cached login information as a validation against the server you added.

In order to perform the following operations when you work with SAW, you must have system administration privileges:

- Change the maximum number of net processes
- Change the maximum number of kernel processes
- Delete server log files

For a discussion of granting SAW administrative rights, see *Setting Up Security Access for SAW* in this section.

► To access SAW

1. Open the \B7\SYSTEM\Bin32 directory and then run SERVERADMINISTRATIONWORKBENCH.exe.

The Sign On form appears.

2. Complete the following fields and click OK:
   - User ID
   - Password

Adding a ERP 8.0 Server for Querying

From SAW, you can add servers for querying. Doing so enables you to administer ERP 8.0 processes and resources on the server and view statistics at a specific point in time. In order to add a server for querying, you must know the server name and port number.

Note: When you add a server for querying, SAW displays it under the Query tab. SAW does not display the server under the Monitor tab until you have configured it for monitoring.

► **To add a server for querying**
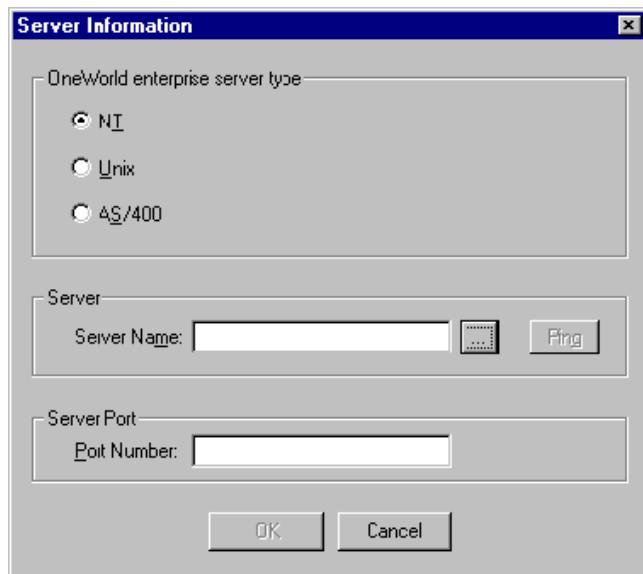
1. In the Server Administration Workbench form, click the Query tab.
2. Click the Add button on the toolbar.

Note:

You can identify the purpose of any button in the toolbar of the SAW form by passing the cursor over the button.

The Server Information form appears.

3. In the ERP 8.0 enterprise server type field, choose the NT option if you want to monitor a ERP 8.0 server on Windows NT.

4. In the Server Name field, enter the name of the server you want to monitor or click the ellipsis button and choose the name of a ERP 8.0 server running on the Windows NT platform.

   The ellipsis button is disabled if you choose UNIX or AS/400.

5. In the Port Number field, enter the port number for the server you are adding and click OK.

Checking ERP 8.0 Server Configurations
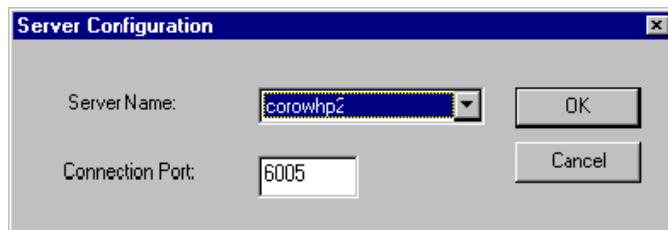
SAW stores the server name and port connection number each time you add a ERP 8.0 server for querying. You can check each server name and port connection and change a port connection, if necessary.

► **To check server configurations**

1. In the Server Administration Workbench form, click the Query tab.

2. Click the Settings button.

The Server Configuration form appears.

3. Choose a server name.

   If you added more than one server for monitoring, click the scroll button in the Server Name control and choose a name. SAW shows the connection port number when you choose a server name.

4. To change the connection port number, enter a new valid number in the Connection Port control and click OK.

Checking ERP 8.0 Server Connectivity
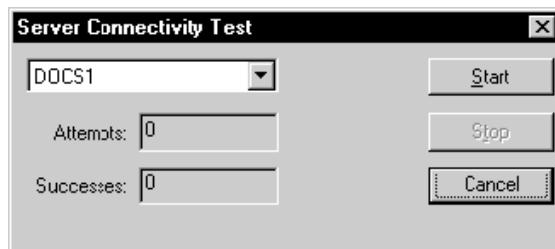
SAW allows you to run a test to ensure that you are connecting to the ERP 8.0 server you want to monitor. SAW returns an error message if you fail to make a connection. If SAW fails to connect to the server, you should verify that the name of the server you want to monitor is correct. You might also need to verify where the connection to the server exists.

► **To check ERP 8.0 server connectivity**

1. In the Server Administration Workbench form, click the Query tab.

2. In the menu bar, click File, Servers, and Connectivity.

The Server Connectivity form appears

3. Choose a server name from the combo box and click Start.

SAW displays in the Attempts and Successes controls the number of attempted connections to the server as well as the number of successful connections made. If these numbers increment simultaneously and consistently, the connection is sound.

4. If SAW connects to the server several times successfully, click the Stop button.

5. If SAW displays a form with the message Unable to Resolve <Server Name>, click OK and investigate the problem.

Removing a ERP 8.0 Server from the Query List
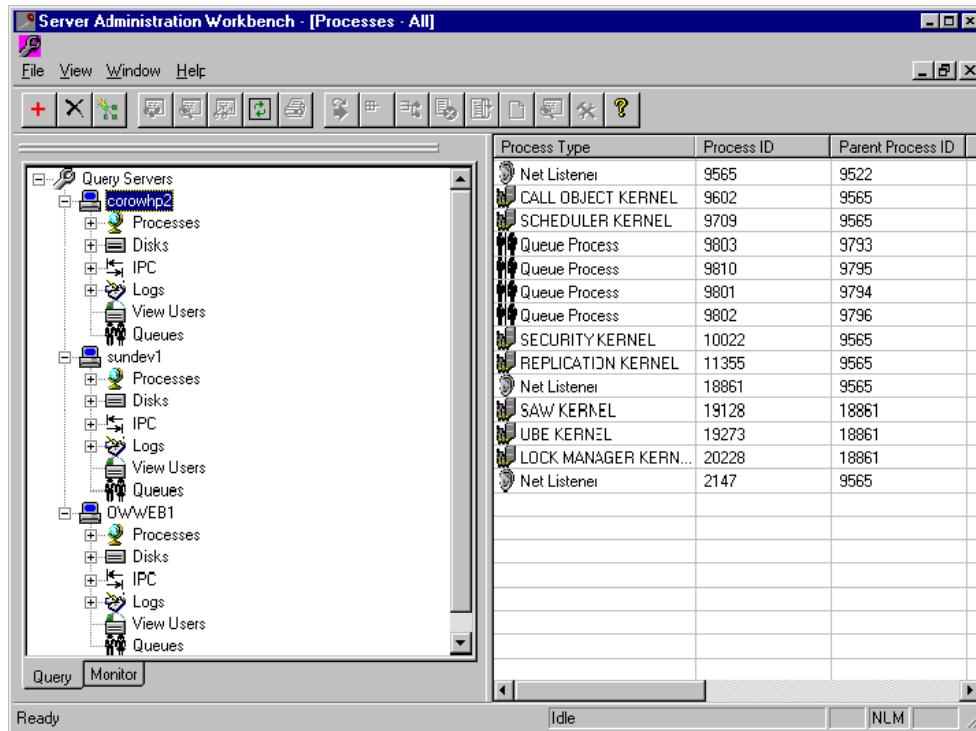
At any time, you can use SAW to remove a server from your list of monitored ERP 8.0 servers.

▶ **To remove a server from the query list**

1. In the Server Administration Workbench form, click the Query tab.

2. If necessary, expand the Query Servers node in the SAW form.

3. In the expanded tree, click the icon of the server that you want to remove.

Note: You must click the server icon, not a server component, such as Processes.

4. Click the Remove button.

Configuring ERP 8.0 Server Monitoring Settings

You use the Settings button under the monitor tab to configure each ERP 8.0 server you want to monitor. Server monitoring configuration allows you to:

- Choose the servers you want to monitor

- Choose the processes that SAW monitors

- Choose the server events that will trigger notification to you

- Set up the way you are notified

- Set up the frequency of notification

- Set up thresholds that determine when server events will trigger notification

SAW displays information on servers that you configure for monitoring each time it retrieves server data.

You configure your server monitor settings in SAW using the ERP 8.0 Server Monitor Settings form. You make choices under three tabs to configure your monitoring settings:

- Port/Server Selection, which allows you to set up servers, port connection numbers, and server processes to monitor.

- Notification Configuration, which allows you to choose the server events that will trigger administrator notification, the ways that you will be notified, and the frequency of notification.

- General, which allows you to configure how frequently SAW tests the server and the thresholds that must be met for server processes in order for you to receive notification.

After you apply the server configuration parameters, SAW displays a server icon for each server you configured. SAW runs periodic tests on the processes you specified and displays in a window whether the processes are running or not.

Selecting a Server, Port, and Processes to Monitor
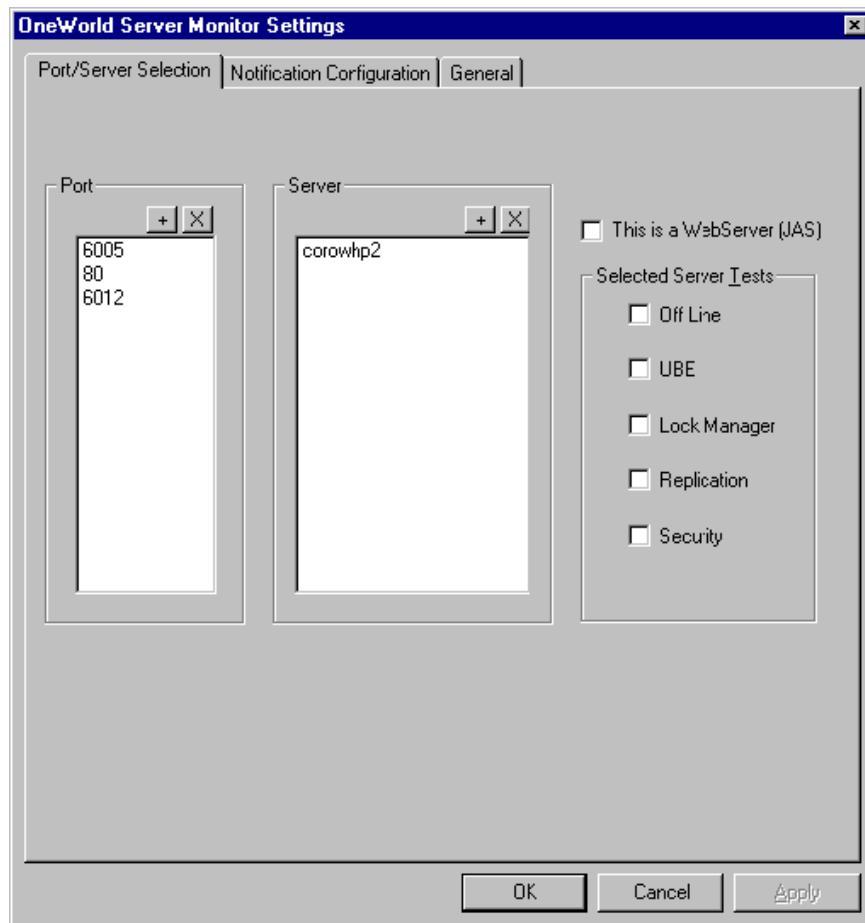
Using the ERP 8.0 Server Monitor Settings form, you can set up ERP 8.0 servers, ports, and processes for monitoring. Once you do so, you can use SAW to quickly see whether the processes you chose for monitoring are running on the server.

▶ **To select a server, port, and processes to monitor**

1. In the SAW form, click the Monitor tab.

2. In the toolbar, click the Settings button.

The ERP 8.0 Server Monitor Settings form appears.

3. Click the Port/Server Selection tab.

4. In the Port field, click the + button and enter a port number.

5. In the Server field, click the + button and enter a server name.

6. If the server is a web server, choose the This is a WebServer option.

7. To set up server processes to monitor, choose any, all, or none of the following options:

   - Off line

   - UBE

   - Lock Manager

   - Replication

   - Security

   Note:

   Choosing Off line means that SAW will not monitor ERP 8.0 server processes for the server that you specified.

8. Click Apply to save the settings.

Setting up Event Notification

After you have chosen the ERP 8.0 server and port for monitoring and chosen the processes that you want to monitor, you can specify the type of events that will trigger notification to you, as well as the methods of notification.

► **To set up event notification**

1. In the ERP 8.0 Server Monitor Settings form, click the Notification Configuration tab.

2. Under Notification Events, choose from the available options to specify the server events that will trigger administrator notification:

   - Dead processes

   - UBEs exceed run-time threshold

   - Disk usage exceeds threshold

   - Number of jobs in queue exceeds threshold

   - System errors in web CallObjects

3. To set up e-mail notification, click the + button in the E-mail address field, enter an e-mail address, and click OK.

4. To set up pager notification, click the + button in the Pager address field, enter a pager address, and click OK.

5. Under Notification Settings, set up how you will be notified:

   - Choose the Repeat Notification option if you want SAW to renotify after the first notification

   - Enter the interval between notification (referred to as "frequency" in the form), in seconds

   - Enter the pager message size in number of lines

6. Click Apply to save the settings.

Setting up SAW Run-time Parameters

You can also use the ERP 8.0 Server Monitor Settings form to configure SAW's run-time parameters. For example, after you have established the server events for which you want to receive notification, you can set up the thresholds that will trigger notification. You can also set up how often you want SAW APIs to retrieve and display server information, and you can specify the directory to which you want SAW to write server log files.

Under the General tab, you specify the following run-time parameters:

   - Log file, which specifies the directory to which you want SAW to write log files.

   - Test frequency, which specifies in seconds how frequently you want SAW APIs to retrieve and display server information.

   - Outstanding request threshold, which specifies the maximum number of requests for a kernel process that SAW will allow to back up on the server before administrator notification is triggered.

   - Disk usage percent threshold, which specifies the maximum percentage of used space on a server disk that SAW will allow before administrator notification is triggered.

- UBE run-time threshold, which specifies the number of minutes that SAW will allow a batch process to run before administrator notification is triggered.

- Queue threshold, which specifies the number of jobs in a queue that SAW will allow before administrator notification is triggered.
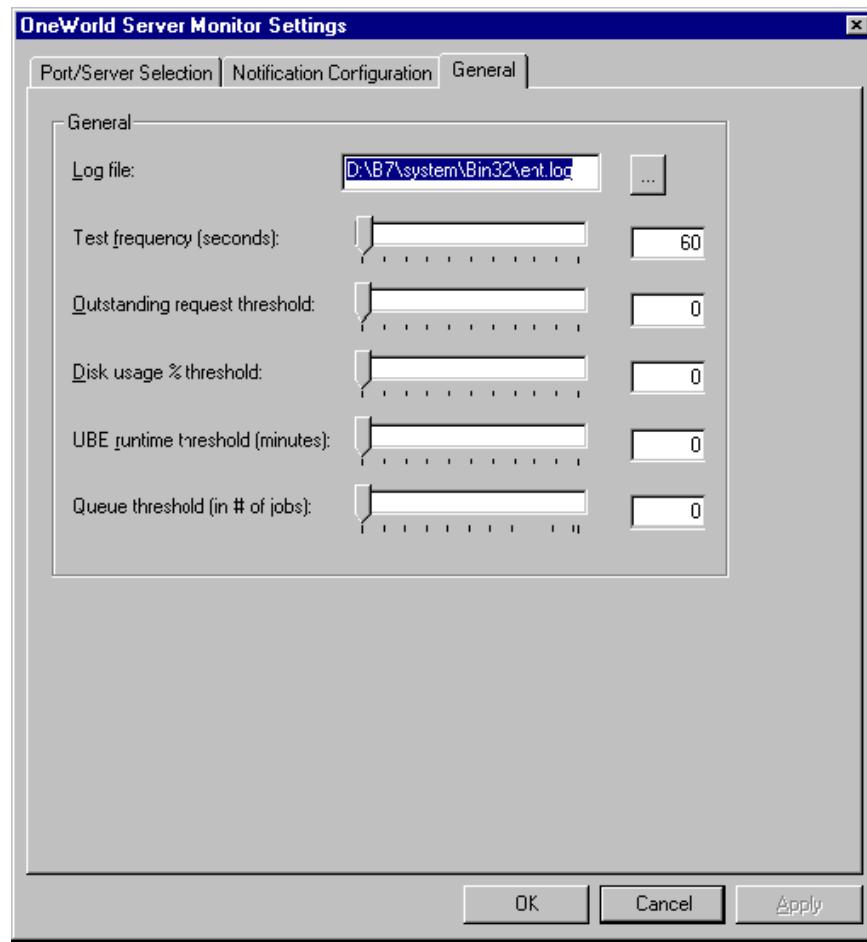
The following table gives recommended threshold settings:

Threshold Parameter	Recommended Threshold Setting
Test frequency (seconds)	300
Outstanding request threshold	10
Disk usage threshold (percentage)	80
UBE run-time threshold (minutes)	90
Queue threshold (number of jobs)	20

► **To set up SAW run-time parameters**

1. In the ERP 8.0 Server Monitor Settings form, click the General tab.

SAW displays under a General heading monitoring parameters for which you can assign values.

2. Set values for the following parameters:

- Log file
- Test frequency
- Outstanding request threshold
- Disk usage percentage threshold
- UBE run-time threshold
- Queue threshold

3. Click Apply to save the settings.
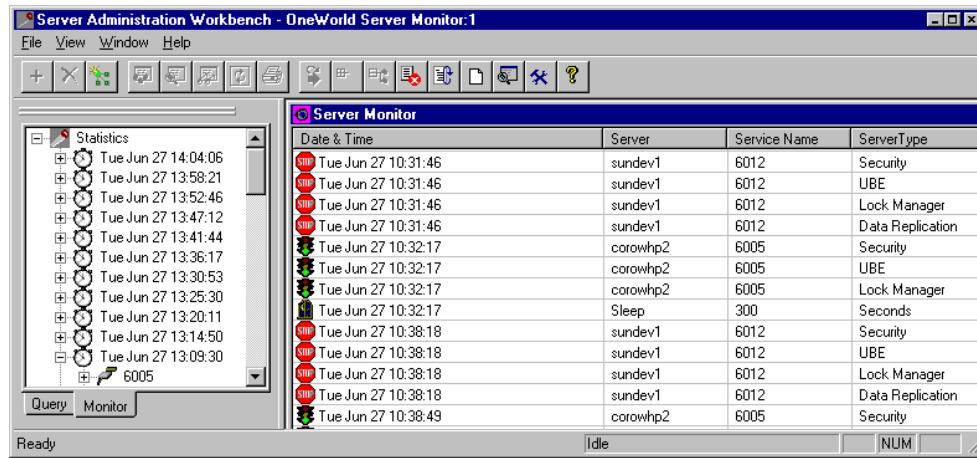
Note:
If you set a parameter's value at 0, SAW does not test that parameter.

Monitoring ERP 8.0 Server Processes

After you have configured ERP 8.0 servers for monitoring, SAW runs tests at regular intervals on the processes you chose. You can quickly check if the servers you are monitoring are up or down and if the server processes you are monitoring are running.

SAW displays this information in the Server Monitor window of the SAW form.

The information in the Server Monitor window allows you to see, at a glance, whether a SAW-monitored server process is up or down. A stop sign icon indicates a server process is down, while a stoplight icon indicates a process is running.

The following table summarizes the server process parameters displayed in the Server Monitor window.

Parameter in Server Monitor Window	Parameter Value
Date & Time	The date and time that SAW ran a server check. The frequency of the checks is determined by the parameter value you set during server-monitoring configuration.
Server	The name of the ERP 8.0 server you are monitoring. "Sleep" indicates the Server Monitor has entered sleep mode.
Service Name	The port connection number.
Server Type	The server process you are monitoring, such as UBE or Lock Manager.
Status	The status of the server process, either Up, Down.
Details	Additional information about a server process.

Before You Begin

❑ Be sure that you have configured the monitoring settings for each ERP 8.0 server whose processes you want to monitor. If you have not done so, you will not be able

to monitor the server processes in the Server Monitor window. Adding a ERP 8.0 server for querying is not sufficient.

► **To monitor ERP 8.0 server processes**

1. Log in to SAW.

   On initial login, there is a brief delay as SAW retrieves data on server processes.

2. When SAW populates the Server Monitor window, check Date & Time and Status parameters for Stop values, which indicate if a server is down or a process on the server has died.
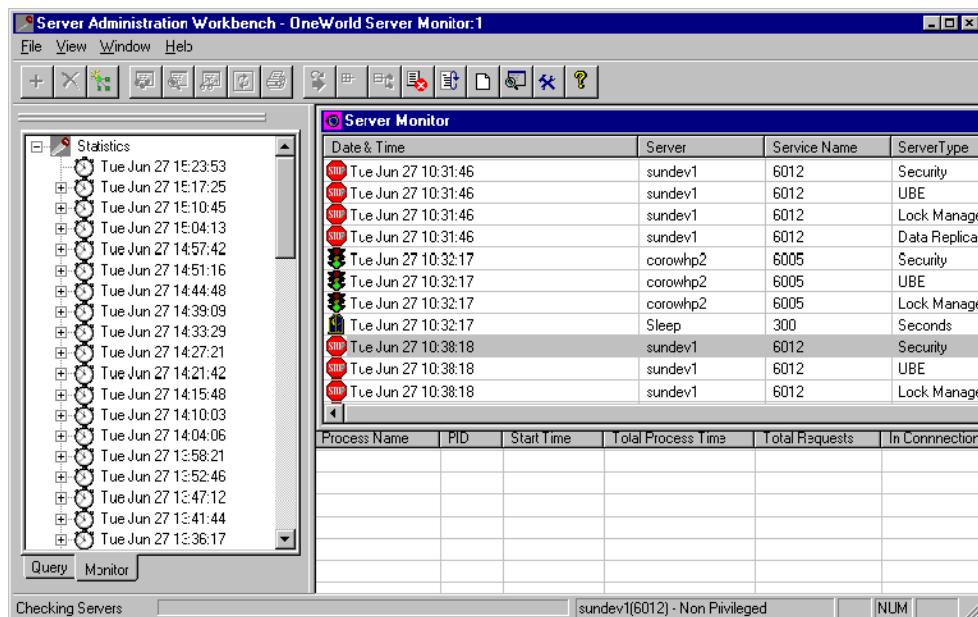
   Note:
   If you change the view in the SAW form and need to return to the Server Monitor window, click the Restore icon in the menu bar.

Monitoring ERP 8.0 Enterprise Server Statistics

The SAW form displays performance statistics for each ERP 8.0 enterprise server you configure for monitoring. A clock icon designates a parent node in the Statistics window. The parent node displays the date and time of each data retrieval.
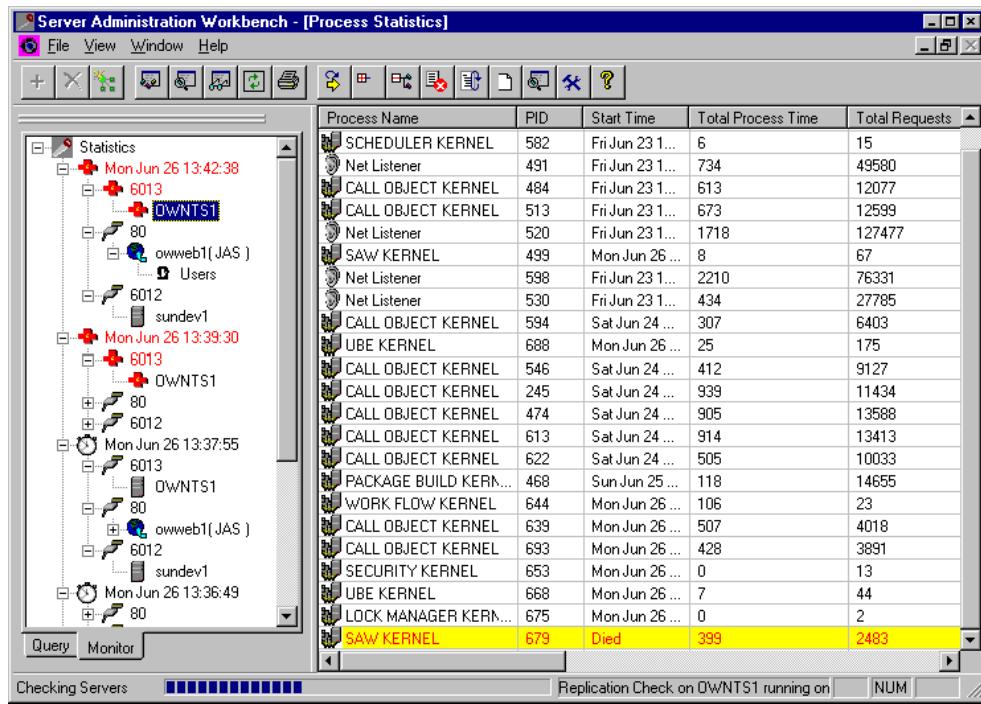
You expand the node to view performance statistics on each server. You can view detailed statistics on:

- Kernel processes

- Network processes

- UBEs

- Server disks

The Statistics window offers you another quick way to identify server problems. If a process has died or some other problem has occurred, SAW displays the monitoring time, the port connection node, and the server node in red.

The statistics for the process or server component, such as a disk, that is causing the problem are highlighted in yellow in a separate window.

Finally, SAW allows you to view and print log files for kernel and network processes running on servers you have configured for monitoring. You can also turn logging on or off for any server process.

Monitoring Process Statistics for Enterprise Servers

The Statistics window allows you to view network and kernel processing data for each monitored enterprise server. To display the processing statistics, you click a server icon. Statistics on each process appear in the Process Statistics window.

The following table summarizes the parameters displayed in the Process Statistics window:

Parameter in Process Statistics Window for Enterprise Servers	Parameter Values
Process Name	The name of the kernel or network process.
PID	The process identification number.
Start Time	The date and time the process began.

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Total Process Time	The total time, in milliseconds, the server required to run the process.
Total Requests	The total number of requests for a particular process handled by the server up to the time that SAW retrieved server process data.
In Connections	The number of workstations connected to the server.
Outstanding Requests	The number of requests in a queue for a process.
Avg. Processing Time Overall	The average amount of time the server required to handle a kernel process request (Total Process Time divided by Total Requests).
Avg. Processing Time - Last Period	The average amount of time the server required to handle a kernel process request during the last server session. Compare this parameter value with the value for the Avg. Processing Time - Overall parameter to assess server performance.
Lock Conditions	The number of processes trying to access the same resource.
Kernel Max Count	The maximum number of kernel processes that can run.
Kernel Current Count	The number of kernel processes that are currently running.
Version	The current version of SAW. The value is for internal use only

You can right click any kernel or network process to view additional information and complete additional tasks:

- View Debug Log
- View JDE Log
- Print Debug Log
- Print JDE Log
- Process Users
- Turn on Server Logging
- Turn off Server Logging
- Change maximum number of a process type
- Disable kernels

Note:

You can change the maximum number of a process type and disable kernels only if you have SAW administrative privileges.
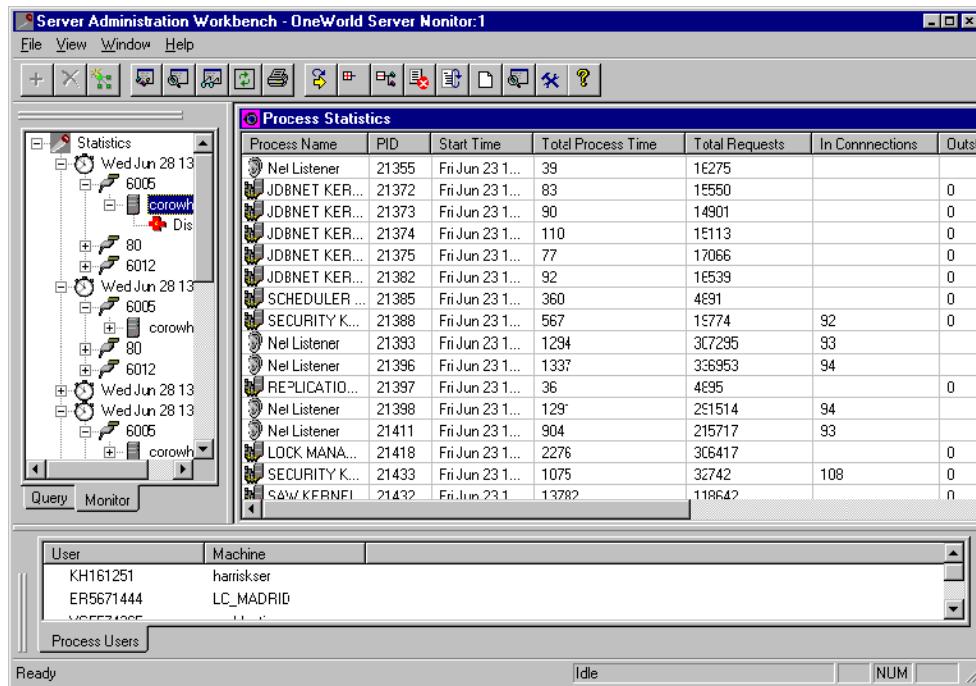
► **To monitor process statistics for enterprise servers**

1. In the SAW form, click the Monitor tab.
2. In the toolbar, click the Refresh button to get the latest server information
3. In the Statistics window, expand the top clock icon node.
4. Expand the port connection icon node for the enterprise server you want to monitor.

5. Click the server icon.

Statistics for kernel and network processes running on the enterprise server appear in the Process Statistics window.

6. To sort the items in a column, click the column heading.

Changing Process Settings

If you have administrative rights, you can use SAW to change the number of NET (jde_n) and KERNEL (jde_k) processes. You might do so if the server is experiencing performance problems. You can also disable processes that are causing problems.

Your ability to use SAW to increase the number of jde_k processes running on the server is constrained by the server's jde.ini file, specifically the maxNumberOfProcesses parameter in the [JDENET_KERNEL_DEF_x] section and the maxKernelProcesses parameter in the [JDENET] section. The maximum number of processes that you can increase for a kernel of a specific type, such as CallObject, or for a combination of kernel types must not exceed the product of the following formula:

> **maxKernelProcesses *minus* the sum of individual kernel type maxNumberofProcesses.**

For example, if the maxKernelProcesses parameter value is 50, and the sum of the values for the maxNumberofProcesses parameter is 34, you can use SAW to increase the number of processes for an individual kernel type or a combination of kernel types by no more than 16. If the maxNumberofProcesses for the CallObject kernel is 10, you can use SAW to increase the number of processes to no more than 26 (50-34=16; 10+16=26).

For further discussion of the maxNumberOfProcesses parameter and the maxKernelProcesses parameter, see *Understanding JDENET Communication Middleware* in the *ERP 8.0 System Administration* guide.

► **To change process settings**
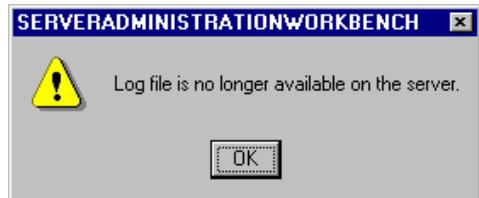
1. In the SAW form, click the Monitor tab.

2. Click the server icon for the server you want to monitor

   SAW populates the Process Statistics window with data on each NET and KERNEL process running on the server.

3. Choose a kernel or network process and right click.

4. To change the number of NET or KERNEL processes, choose Change max number of this process type, enter a new value, and click OK.

5. To disable a KERNEL process, choose Disable Kernels.

Viewing Log and Debug Log Files for Enterprise Server Processes

SAW allows you to view server log and debug log files for individual kernel and network processes running on enterprise servers that you have configured for monitoring.

> **Note:** If you attempt to view a file that has been deleted from the server, SAW displays a message saying the file is no longer available.

► **To view log and debug log files for enterprise server processes**

1. In the Statistics window, click an enterprise server icon.

2. In the Process Statistics window, right click a network or kernel process and choose View Debug Log or View JDE Log.

   The log or debug log file appears in a text editor.

Note:

You can also choose a network or kernel process in the Process Statistics window and click the Debug Log or JDE Log buttons in the toolbar.

Printing Log and Debug Log Files for Enterprise Server Processes

You can print server log or debug log files from your workstation. SAW prints a text editor document to your local printer. Keep in mind that debug log files can be very large, which might make printing impractical.

► To print log and debug log files for an enterprise server process

1. In the Statistics window, click an enterprise server icon.

2. In the Process Statistics window, right click a network or kernel process and choose Print Debug Log or Print JDE Log.

   SAW prints the file to your local printer. For server logs, you can also click the Print JDE Log button in the toolbar.

Turning Logging on and off for Enterprise Server Processes

You can control logging for processes running on enterprise servers. If you observe that there is a problem with a process, you might turn on logging so that SAW adds information to the log file on that process. When you have enough information, you can turn off logging, so that you can more easily isolate in the log file where an error occurred. Even with logging turned off, you can still view the log file for a process, although the entries stop at the point that you turned logging off.

► To turn logging on and off for enterprise server processes

1. In the Statistics window, click an enterprise server icon.

2. In the Process Statistics window, right click a network or kernel process and choose Turn on Server Logging or Turn off Server Logging.

Viewing Process User Statistics for Enterprise Servers
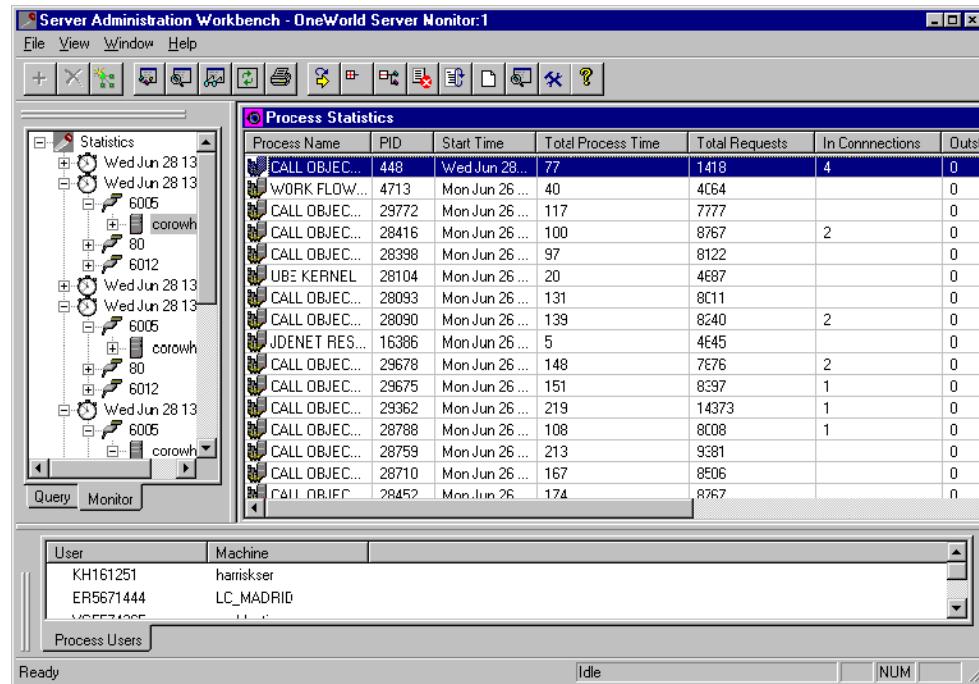
You can view statistics on users who are running business functions on the enterprise server. A separate window in the SAW form displays the user's ID and machine name for each CallObject kernel process you choose.

► To view process user statistics for enterprise servers

1. In the Statistics window, click an enterprise server icon.

2. In the Process Statistics window, right click a CallObject kernel process and choose Process Users.

SAW displays in a separate window user and machine information for the CallObject process you choose.

Viewing Statistics for UBEs

The UBE icon appears as a child of the enterprise server icon in the Statistics window only if a UBE is running on the enterprise server. If you click the UBE icon, you can view additional information on the batch process:

- **UBE name**

- **Process ID number**

- **Date and time the process began**

- **Running time for the process, in minutes**

► **To view statistics for UBEs**

1. In the Statistics window, expand an enterprise server icon.

2. Click a UBE icon, if one appears.

   Statistics for UBEs running on the enterprise server appear in the Monitor UBE window.

Viewing Statistics for Server Disks

The disk icon appears at all times as a child of the enterprise server icon. If you click the disk icon, you can view additional information about server disks:

- **Disk name**

- **Total space**

- **Used space**

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- **Available space**
- **Percent used**
- **Disk type**

► **To view statistics for server disks**

1. In the Statistics window, expand an enterprise server icon.
2. Click the Disk icon.

   Statistics for each server disk appear in the Monitor Disk window.

Monitoring ERP 8.0 Web Server Statistics
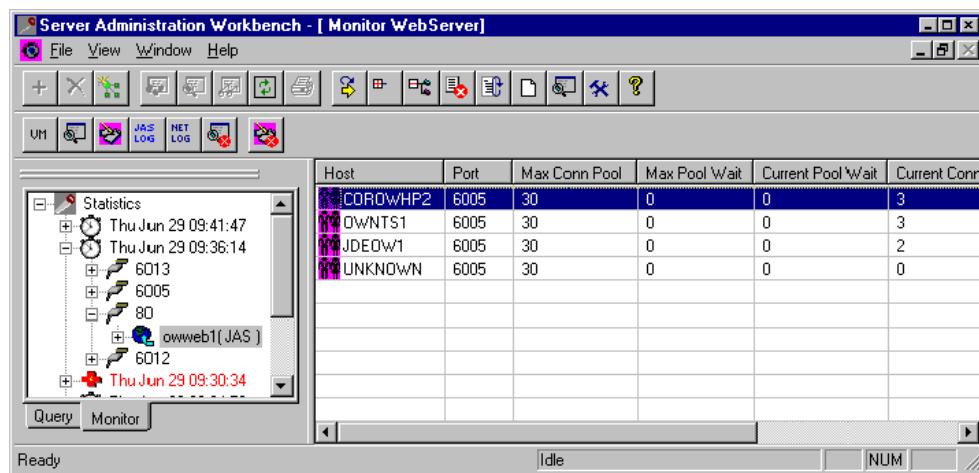
You can also use SAW to monitor statistics on ERP 8.0 web servers from your fat client workstation. The Statistics window in the SAW form displays no data on kernel and network processes for web servers, because these processes run on enterprise servers. However, you can monitor data on web server users, connections to enterprise servers, and business functions running on enterprise servers.

If you are working on a thin or zero client workstation, you can monitor web servers from your workstation using the Web Server Monitor utility. See Monitoring ERP 8.0 with the Web Server Monitor in this section for additional details.

Keep in mind also that when you configure a web server for monitoring in SAW, you can set up notification triggers to let you know when there are system errors in business functions running on enterprise servers connected to the web server. The Web Server Monitor does not allow you to set up notification triggers.

Monitoring Data on Enterprise Servers Connected to the Web Server

When you click a web server icon in the Statistics window, SAW displays in a separate window information about each enterprise server connected to the web server.

This window contains important connection information as well as information on business functions running on the enterprise servers.

The following table summarizes the data SAW displays on each enterprise server connected to the web server:

Parameter for SAW Window Displaying Host Server Data	Parameter Value
Host Name	The enterprise server name.
Port	The enterprise server port connection number.
Max Conn Pool	The maximum number of enterprise servers that can be connected to the web server, as defined in the server INI file.
Max Pool Wait	The number of users waiting for a connection once the Max Conn Pool value has been exceeded. For example, if the Max Conn Pool value is 30 and five users are waiting to connect, the Max Pool Wait value is 5. The value is incremented with each new user who attempts to connect once the Max Conn Pool value has been exceeded.
Current Pool Wait	The number of users who are waiting for a server connection. This parameter has a value only if the Max Conn Pool value is exceeded.
Current Connections	The number of users currently connected to the enterprise server from the web server.
No. of CallObjects	The number of business functions that have run on the enterprise server during a session.

► **To monitor data on enterprise servers connected to the web server**

1. In the SAW form, click the Monitor tab.
2. In the toolbar, click the Refresh button to get the latest server information
3. In the Statistics window, expand the top clock icon node.
4. Expand the port connection icon node for the web server you want to monitor.
5. Click the web server icon.

   SAW populates the Monitor WebServer window with the name of and data on each enterprise server connected to the web server.

Monitoring Web Server CallObjects

SAW allows you to view additional data on business functions running on an enterprise server connected to the web server you are monitoring. You can troubleshoot the data on business functions from SAW. For example, SAW displays system errors and application errors that occur during the running of business functions.

The following table summarizes the data that SAW displays on business functions running on an enterprise server connected to the web server:

Web Server CallObjects Window Parameter	Parameter Value
CallObject Name	The name of the business function.

Min Time	The minimum time, in milliseconds, required to run the business function.
Max Time	The maximum time, in milliseconds, required to run the business function.
Avg. Time	The average time, in milliseconds, required to run the business function.
Timeouts	The number of times a business function timed out before completion.
System Errors	The number of system errors that occurred during the running of a business function.
Application Errors	The number of application errors (usually related to business logic) that occurred during the running of a business function.
Times Called	The number of times a business function was called to run on the enterprise server.
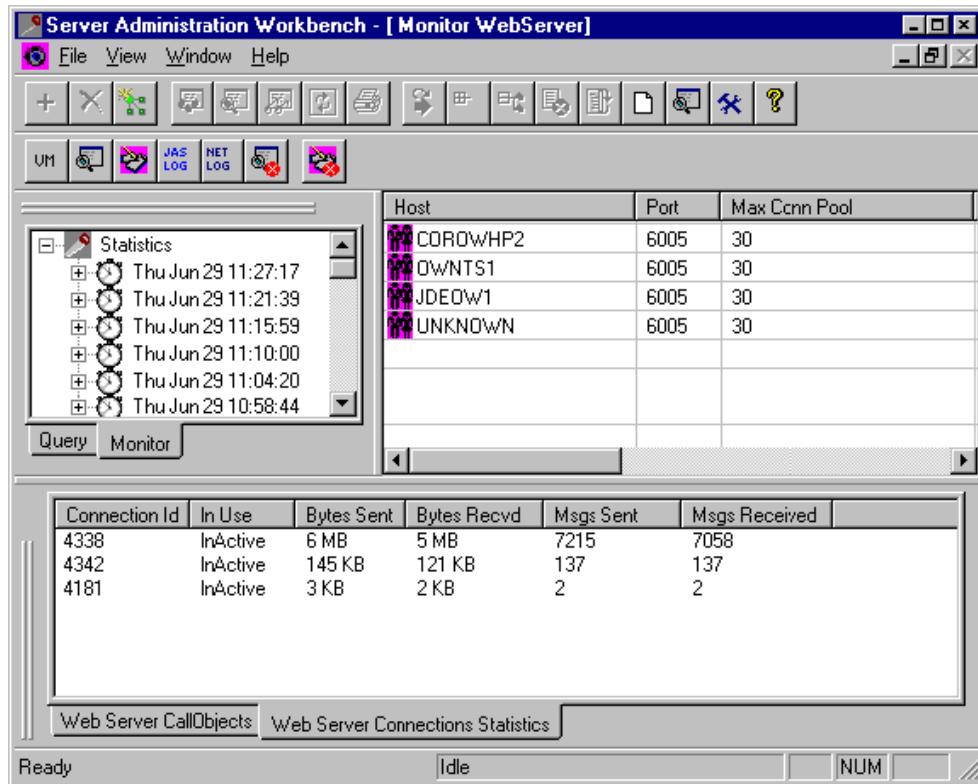
► To monitor web server CallObjects

1. In the Monitor WebServer window, right click a line containing the name of an enterprise server and choose Display CallObjects and Connections.

   SAW opens a new window with two tabs:

   - Web Server CallObjects
   - Web Server Connections Statistics

2. Click the Web Server CallObjects tab.

   SAW populates the window with data on each business function that has run on the enterprise server during a web server session.

Monitoring Web Server Connection Statistics

You click the Web Server Connections Statistics tab to view data on the connections made from the web server to the enterprise server.
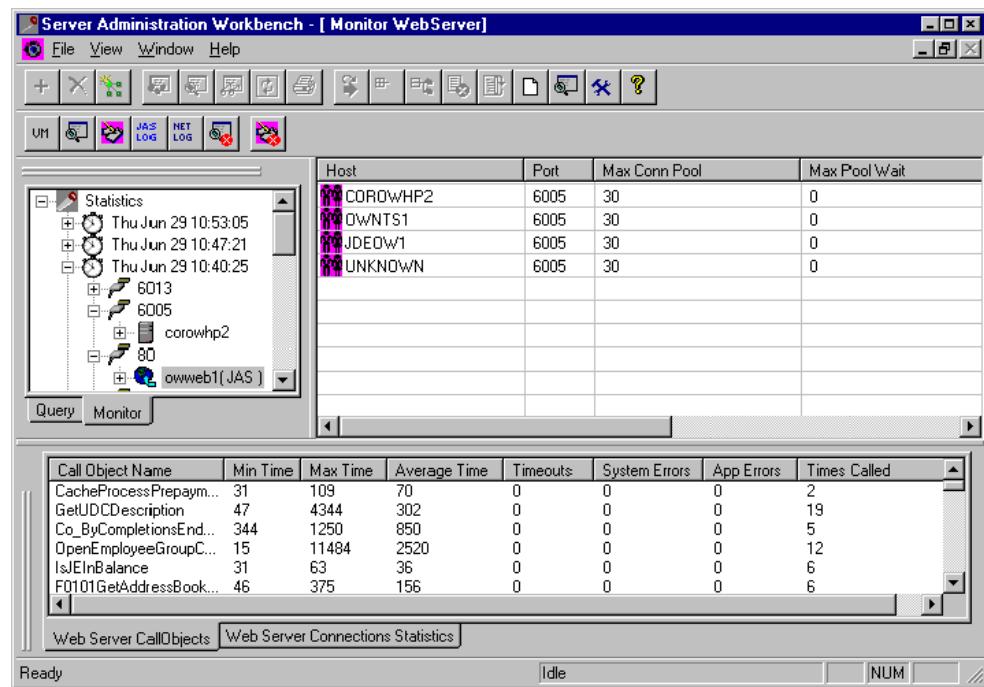
The following table summarizes the data that SAW displays on connections between the web server and the enterprise server:

Web Server Connection Statistics Window Parameter	Parameter Value
Connection ID	A number that identifies the socket connection between the web server and the enterprise server.
In Use	The status of the connection, either Active or Inactive.
Bytes Sent	The number of bytes transmitted from the connection socket.
Bytes Received	The number of bytes received from the connection socket.
Messages Sent	The number of JDENET messages transmitted from the connection socket.
Messages Received	The number of JDENET messages received from the connection socket.

► **To monitor web server connection statistics**

1. In the Monitor WebServer window, right click a line containing the name of an enterprise server and choose Display CallObjects and Connections.

2. Click the Web Server CallObjects tab.
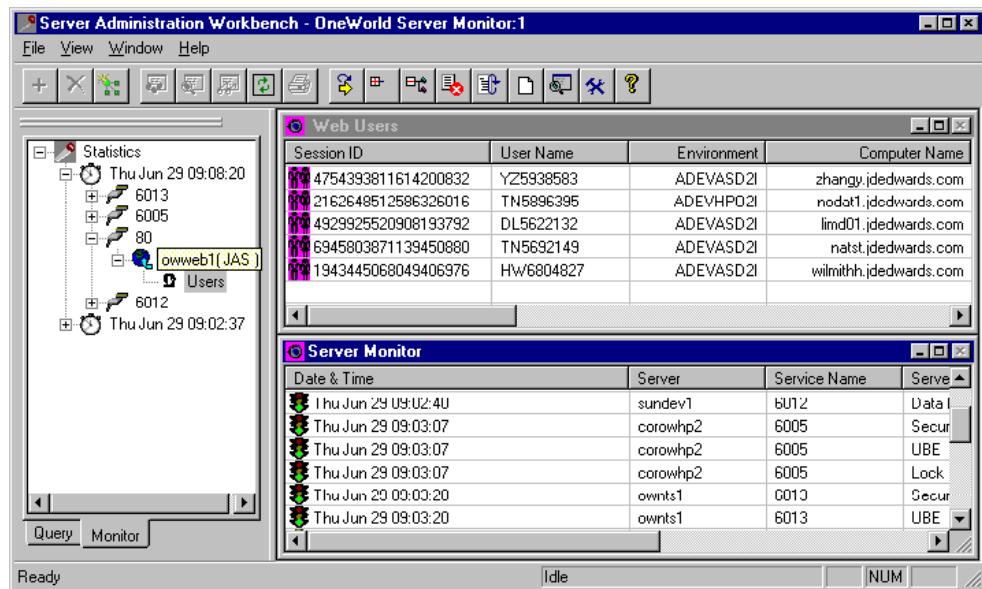
SAW populates the window with data on each business function that has run on the enterprise server during a web server session.

Monitoring Web Server User Statistics

You can also use the Statistics window in the SAW form to view statistics on web server users.

When you expand the node for a web server, only a User icon appears as a child of the server icon.

The Web Users window displays information about each user connected to the web server. The following table summarizes the data SAW displays on each web user:

Web Users Window Parameter	Parameter Value
Session ID	Unique numeric identifier for each user session.
User Name	User ID.
Environment	The ERP 8.0 environment in which the user is working, such as PDEVNIS2. Environment = Path Code + Object Configuration mappings.
Computer Name	Name of user's local workstation.
Login Time	Date and time user logged on to the web server.
Idle Time	The amount of time, in minutes, that the user has been inactive.
Browser	Web browser name.
User Type	The way information is displayed on the workstation: JavaApplet, HTML, or Portal.
Maximum Users (Allowed)	The maximum number of users that can be connected to the web, as defined in the server INI file.
Maximum Users (Used)	The number of users currently connected to the server.
Session Timeout (Minutes)	The amount of time, in minutes, that a user can be idle before the session times out and the user is disconnected from the server.

► **To monitor web server user statistics**
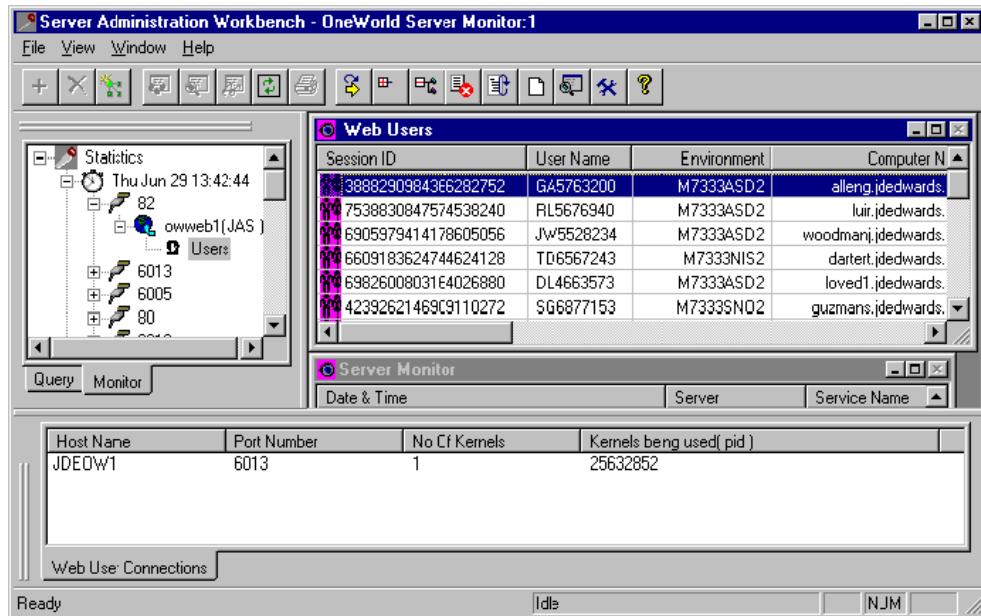
1. In the SAW form, click the Monitor tab.

2. In the toolbar, click the Refresh button to get the latest server information

3. In the Statistics window, expand a clock icon node.

4. Expand the port connection icon node for the web server you want to monitor.

5. Expand the server icon.

6. Click the Users icon.

   SAW populates the Web Users window with data on web server users for the current session.

Monitoring Web Server User Connection Statistics

You can gain additional data on connections web server users make to enterprise servers by right clicking a line in the Web Users window.

Choosing Show Web User Connections opens a window in the SAW form that displays each web server user's connection to the enterprise server.

Note:

After you open the window that displays the connection data, you can view each user's connection data simply by passing the cursor over a line in the Web Users window.

The following table summarizes the connection data SAW displays for each web user:

Web Users Connection Statistics Parameter	Parameter Value
Host	The name of the enterprise server to which the web user connects.

Port Number	The number of the port used for the connection.
Number of Kernels	The number of kernel processes the user is running on the enterprise server.
Kernels Being Used (PID)	The process ID number for each kernel the user is running on the enterprise server.

▶ **To monitor web server user connection statistics**

1. In the Web Users window, right click a line containing a user ID and choose Show Web User Connections.

   SAW opens a window containing connection data for the user you chose.

2. To view connection data for another user, pass the cursor over another line in the Web Users window.

   SAW changes the connection data in the window to reflect the line selected by your moving the cursor.
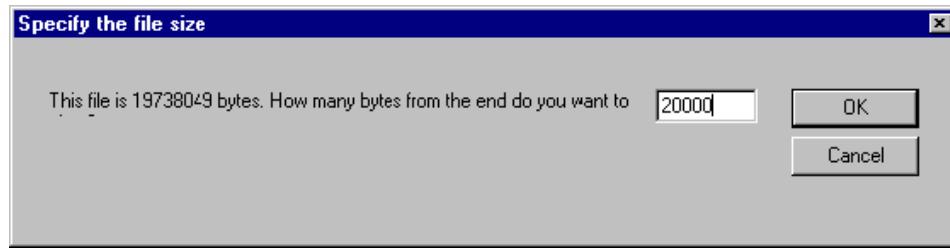
Monitoring Web Server Logs

When you monitor a web server, SAW presents additional buttons on the toolbar. You can use these buttons to:

- **Get details on the Java virtual machine, which functions as an interface between the web server and the enterprise server.**

- **Get the JDE log from the web server.**

- **Get the debug log from the web server.**

- **Get the JAS log, which enables you to turn on or off JAS logging. JAS log gathers information on processes running on the Java Application Server.**

- **Get the NET log, which enables you to turn on or off Net logging. Net log contains information on JDENET processes.**

- **Delete the JDE log from the web server, provided you have SAW administrative privileges**

- **Delete the debug log from the web server, provided you have SAW administrative privileges**

You can accomplish any of these tasks simply by clicking the appropriate button in the toolbar. If you want to get the JDE log or the debug log from the web server, SAW displays a form that states the length of the file in kbytes.

You can shorten the file by entering the number of bytes you want. You must enter an integer between 0 and 20,000.

Specify the file size dialog box:

This file is 19738049 bytes. How many bytes from the end do you want to [20000] [OK] [Cancel]

Querying ERP 8.0 Enterprise Servers

Even if you have not configured an enterprise server for monitoring, you can get detailed statistics on server components, resources, and log files using the Query tab in the SAW form.
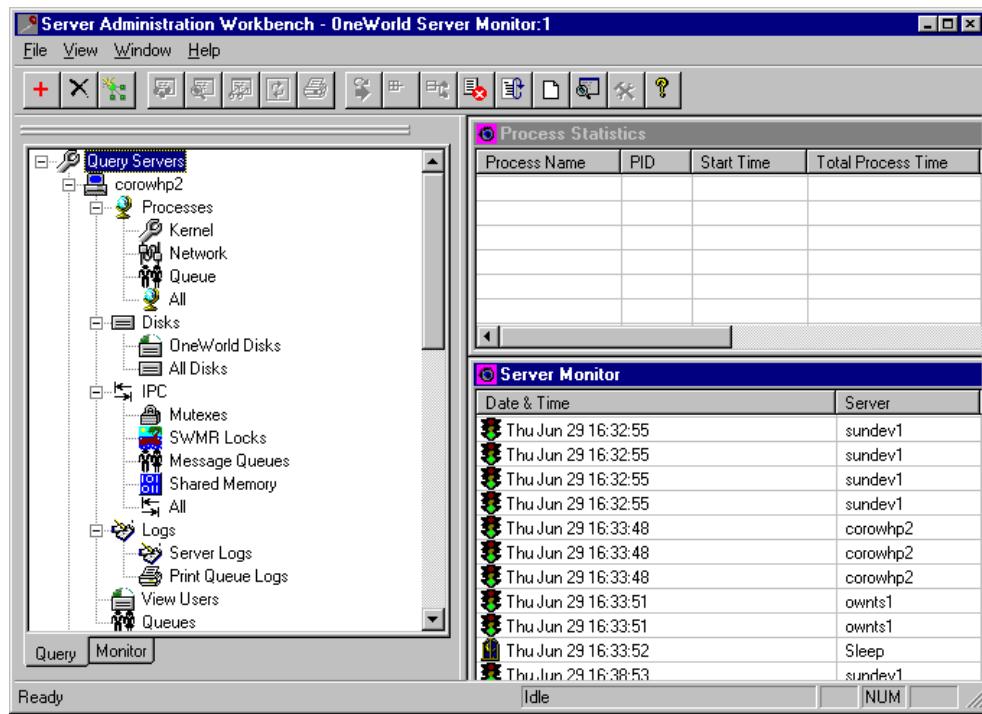
To query a server, you must add the server for monitoring. See *Adding a ERP 8.0 Server for Querying* in this chapter for details.

Querying an enterprise server offers the following types of enterprise server data:

- Processes
- Disks
- Interprocess communications (IPCs)
- Logs
- Users
- Job queues
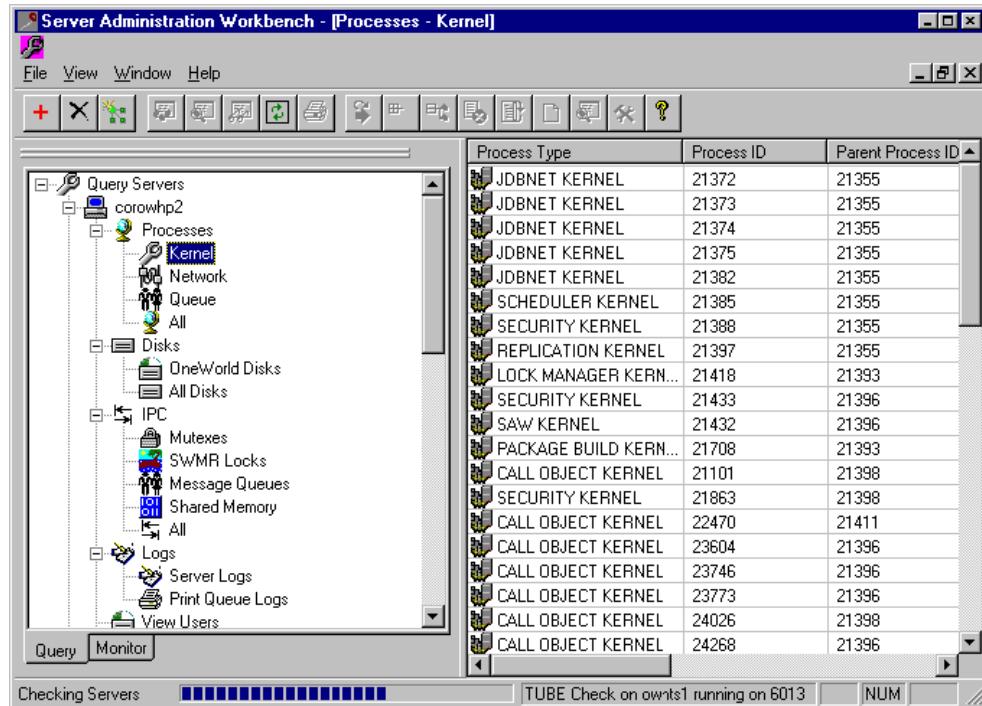
SAW updates the server component information each time it retrieves data from the enterprise server. Unlike the Statistics window under the Monitor tab, however, you cannot review information from previous data retrievals when you query a server.

SAW arranges server component data in a tree with Query Servers as the parent node. Servers, server components, and server subcomponents are child nodes.

When you click on a component or subcomponent icon, SAW displays data on the component in a separate window.

For example, if you click the Kernel component under the Processes node, SAW displays data on all kernel processes for the time of SAW's latest data retrieval.

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You can also display data on any component by clicking a server icon, then clicking File in the toolbar and choosing Open and the name of a component or subcomponent of the server node.

Note:

SAW displays in the Query Servers tree each web server that you added for monitoring. However, you cannot monitor web servers form the Query Servers tree. Web server monitoring must be done from the Statistics window under the Monitor tab.

Querying Enterprise Server Process Components
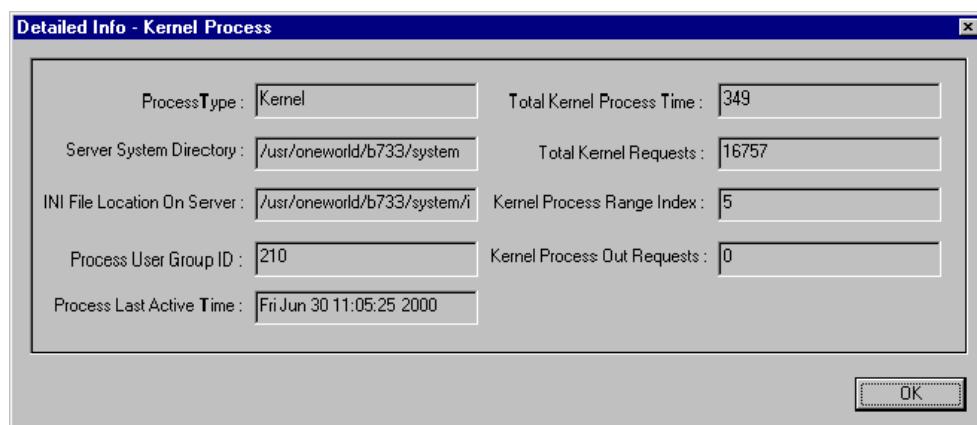
Querying a server allows you to monitor kernel, network, and queue processes. When you click a process component, SAW displays in a separate window the most recent data for each process of the type you chose. You can also view and print JDE and debug logs, as well as turn logging on or off for a process. For more information on using SAW to monitor logs for individual processes, see *Monitoring Process Statistics for Enterprise Servers* in this chapter.

SAW displays the following data for each server process type:

- **Process Type, such as kernel, network, or queue**
- **Process ID**
- **Parent Process ID**
- **User Name**
- **Start Date/Time**
- **Last Date/Time**
- **OW - Status**
- **OS - Status**

You can gain additional data on each kernel and network process by right clicking a line in the window and choosing Information.
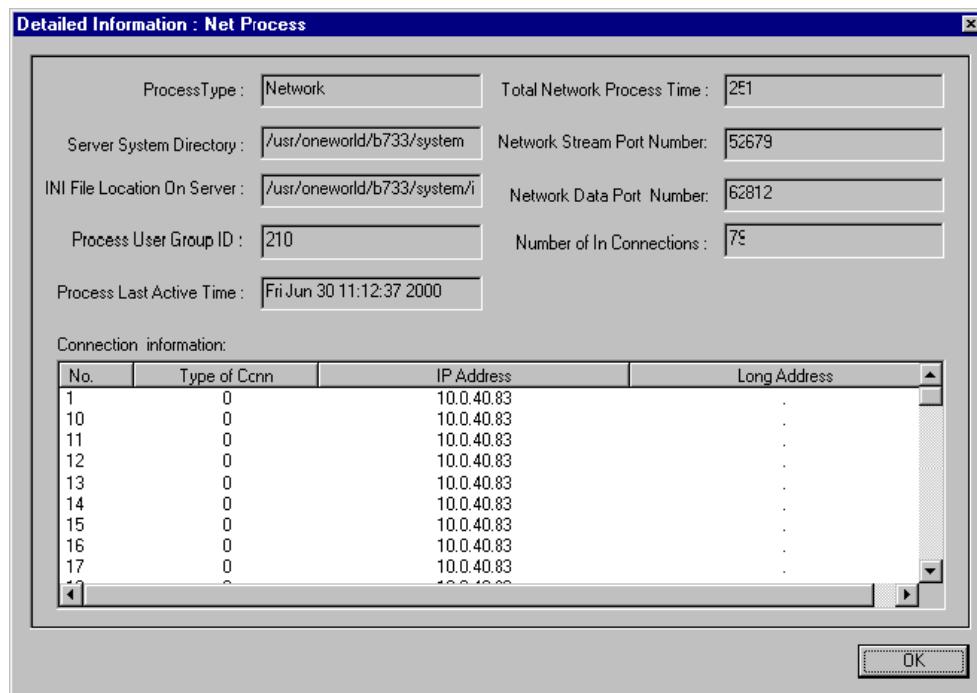
If you choose Information after right clicking on a kernel process, the Detailed Info - Kernel Process form appears.

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The **Detailed Info - Kernel Process form displays the following data on each kernel process:**

- **Server system directory, for example, /usr/oneworld/b733/system**
- **INI file location on server, for example, /usr/oneworld/b733/system/ini**
- **Total kernel processing time, in milliseconds**
- **Total kernel requests**
- **Kernel process range index**
- **Kernel process out requests**

If you choose Information after right clicking on a network process, the Detailed Info - Network Process form appears.

The **Detailed Info - Network Process form displays the following data on each network process:**

- **Server system directory**
- **INI file location on server**
- **Total network process time, in milliseconds**
- **Network stream port number**
- **Network data port number**
- **Number of in connections**

A separate window in the Detailed Info - Network Process form displays the following connection information:

- **Connection number**

- **Connection type**

- **Internet Protocol (IP) address**

- **Long address**

▶ **To query enterprise server process components**

1. In the SAW form, click the Query tab.

2. Expand the Processes node for an enterprise server you want to monitor and click one of the following icons:

   - Kernel

   - Network

   - Queue

   - All

   SAW populates a form window with data on the process type you chose.

3. Click a column heading to sort the data in a column.

4. For additional information on a process, right click and choose Information.

5. To turn logging on or off for the process or to view and print logs, right click and choose the appropriate option.

Querying Enterprise Server Disk Components

Querying the server disk components produces the same information that is available under the Monitor tab. See *Viewing Statistics for Server Disks* in this chapter for further details on the disk data that SAW gathers.

▶ **To query enterprise server disk components**

1. In the SAW form, click the Query tab.

2. Expand the Disks node for an enterprise server you want to monitor and click one of the following icons:

   - ERP 8.0 Disks

   - All Disks

Querying Enterprise Server IPC Resources

SAW allows you to query interprocess communications, which allow applications to share data and memory, as well as allow one application to control another.

SAW monitors the following IPC types:

- **Mutexes, which are locks that allow only one process to hold the lock. This is the most common type of lock.**

- **SWMR locks, which allow only one writer to change data, but allow multiple readers to access the data. The system grants reader locks if no outstanding writer locks exist. The system grants writer locks if no outstanding reader locks exist.**

- **Message queues, which allow one process to pass packets to another process.**

- **Shared memory, which is a segment of memory that appears in the address space of more than one process. For example, network processes might use a shared memory segment to monitor existing processes and their status.**

- **All**

SAW displays the following data for each server process type:

- **Resource Name**

- **IPC ID**

- **Key, which is an ID number the operating system uses to identify one or more groups of IPC resources**

- **IPC Type**

- **User ID**

- **Group**

▶ **To query enterprise server IPC resources**

1. In the SAW form, click the Query tab.

2. Expand the IPC node for an enterprise server you want to monitor and click one of the following icons:

   - Mutexes

   - SWMR Locks

   - Message Queues

   - Shared Memory

   - All

Querying Enterprise Server Log Files

SAW allows you to query for summary server log and debug log information, as well as summary information on print queue logs. You can also choose and display any log or debug log from your SAW sessions. If you have SAW administrator privileges, you can delete log and debug server log files.

▶ **To query enterprise server log files**

1. In the SAW form, click the Query tab.

2. Expand the Logs node for an enterprise server you want to monitor and click one of the following icons:

   - Server Logs

   - Print Queue Logs

   A list of log files on the server appears in the workspace with the names of the files, the dates and times when ERP 8.0 created the files, and the sizes of the files.

3. To view a file, right click a line containing the name of a log and choose View Selected.

   SAW displays in a text editor the log file or debug log file.

4. To delete the file, click File in the menu bar and choose Delete Selected.

If you have administrator privileges, SAW deletes the file and then refreshes the workspace. If you do not, SAW displays a form advising you that you must have administrative privileges to perform the deletion.

▶ To query the enterprise server users

1. In the SAW form, click the Query tab.

2. Expand the node for an enterprise server you want to monitor and click View Users.

   SAW populates a separate window with information on current users on the enterprise server.

3. To view the ERP 8.0 processes being run for an individual user, double click a line containing an asterisk in the Using Processes column.

Querying the Enterprise Server Job Queue

SAW allows you to query for data on job queues on the enterprise server. When you click the Queue icon, SAW displays in a separate window information on each job in the queue. The information is displayed under the following columns:

- **Queue Name**
- **Queue Type**
- **Queue Status**
- **Queue Max Jobs**

▶ To query the enterprise server job queue

1. In the SAW form, click the Query tab.

2. Expand the node for an enterprise server you want to monitor and click Queues.

   SAW populates a separate window with information on jobs in the queue on the enterprise server.
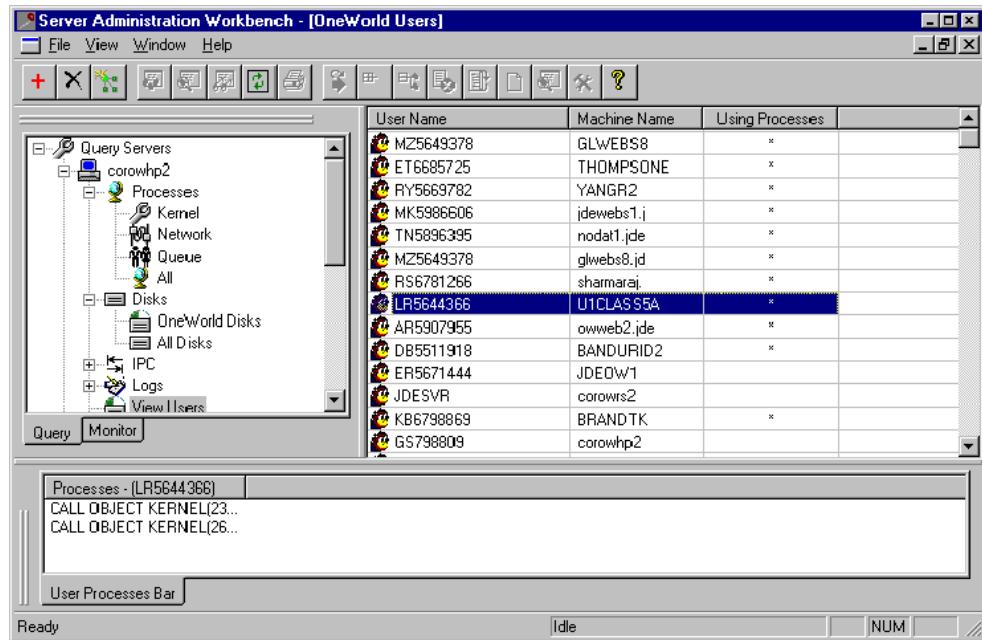
Querying the Enterprise Server Users

SAW allows you to query for data on users connected to the enterprise server. When you click the View Users icon, SAW displays in a separate window information on each user. The information is displayed under the following columns:

- **User Name**
- **Machine Name**
- **Using Process**

An asterisk in the Using Process column indicates that a user currently is running ERP 8.0 processes on the server.

You can view the list of active processes for a user by double clicking a line that contains an asterisk in the Using Process column.
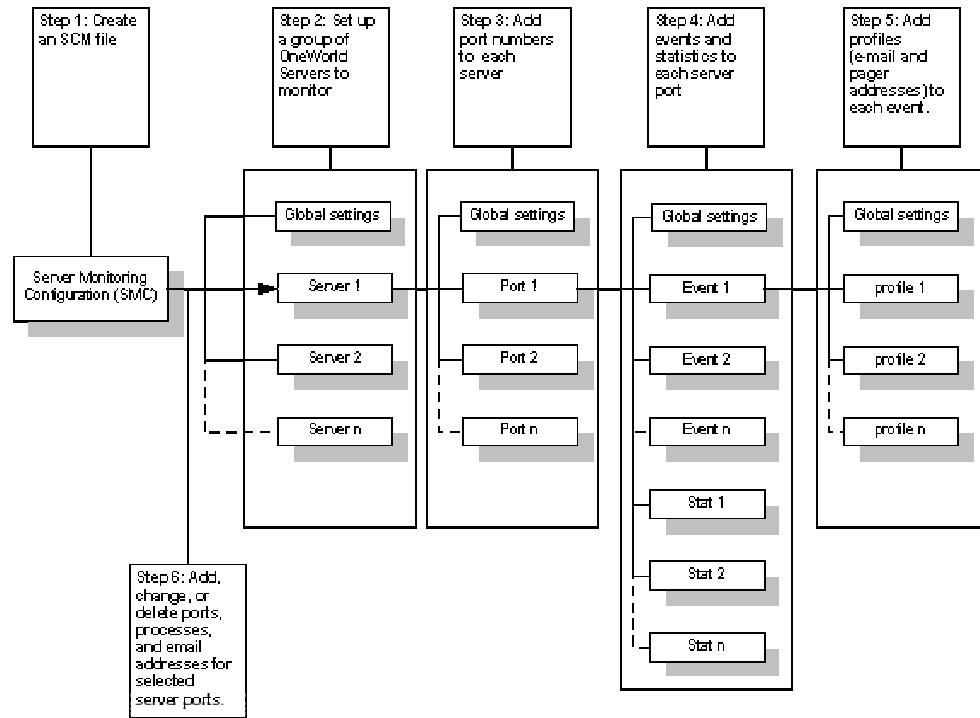
SAW **displays identifying data on the process that is active.**

Configuring SAW and monitoring ERP 8.0 Servers from the web

The Server Administration Workbench (SAW) provides a unified web interface for administrators to monitor ERP 8.0 Servers (Enterprise, Java, and XPI) remotely through a browser. From the web, administrators can set up a Server Monitoring Configuration (SMC) to monitor different instances of ERP 8.0 servers and notify assigned users via e-mail or pager when an assigned agent detects a faulty event with any of the instances.

SAW for the web can be installed as a standard part of the ERP 8.0 Java server. In future releases, SAW for the Web will be installed as standalone. If you install a Java server, SAW is automatically installed and can be accessed like any of the other Java server components. However, if you want to use SAW as a stand-alone product, you must purchase the SAW package and install the included jar file on a web server connected to the ERP 8.0 network. The SAW package includes all the components needed to run SAW and monitor the ERP 8.0 servers.

The process of setting up an SMC is shown in the figure below:

Creating an SMC File

Before you can monitor server ports via the web, you must first access an administration web server and create a Server Monitoring Configuration (SMC) file. This file stores the information that is required for monitoring ERP 8.0 servers, such as server names, port numbers, monitored processes, etc. The SMC file stores all the vital configuration data that is accessed by an agent that runs on the web server and performs the monitoring duties.

► **To create an SMC file**

From a web browser, enter the url of the Server Administration Workbench (SAW) web page located on the web server where the SAW package is installed. The path to the html page is saw/smc/smc.html.

For example, use the following format for the url:
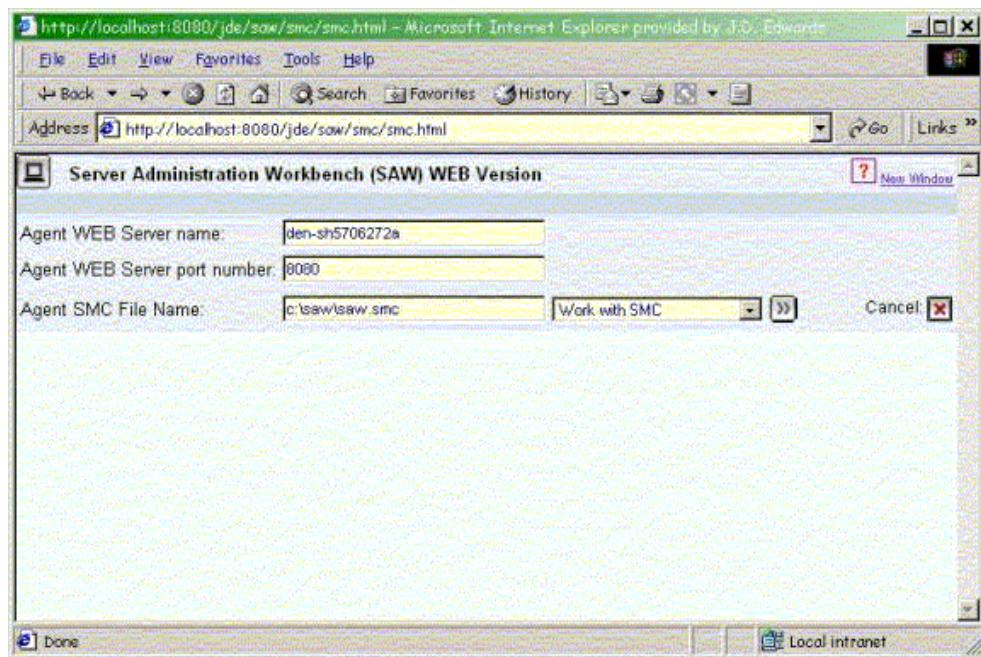
```
http://host_name:port_number/web_alias/saw/smc/smc.html
```

where host_name is the name of the web server where the SAW package is installed, port_number is the number of the port that the server is running on, and

web_alias is the alias of the configuration for accessing the web pages on the web server.

The web_alias can point to a directory on the server (for example, c:\internet\distribution) that is configured to access Web Server documents.

Add the url to your list of favorites.

On the Server Administration Workbench (SAW) WEB Version page, complete the following fields:

- Agent Web Server Name

  Host name of the web server

- Agent WEB Server port number

  Port number on which the Web Server runs

- Agent SMC File Name

  Type a path and file name for the configuration file, for example, c:\saw\saw.smc.
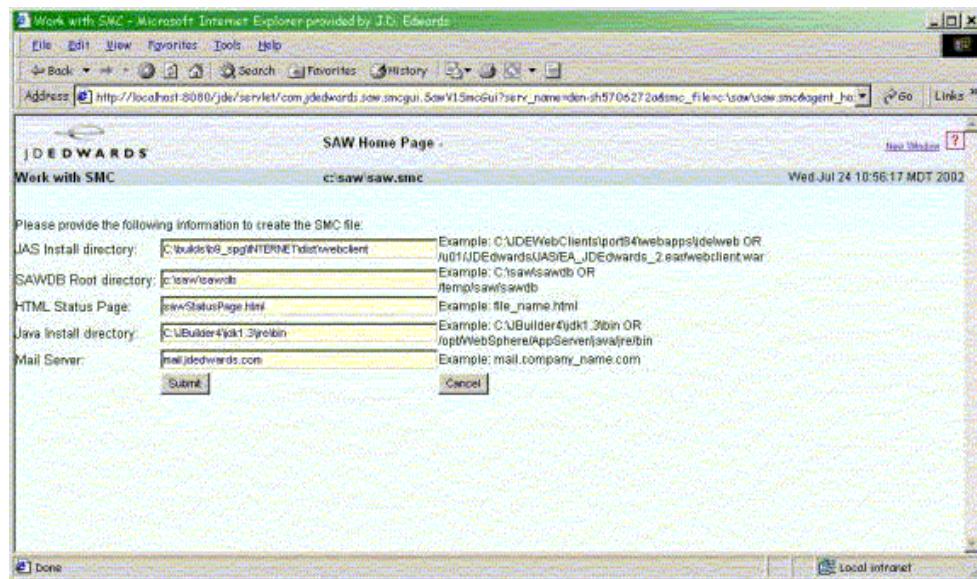
Note:

The Agent Web Server Name and the Agent WEB Server Port number must be entered the first time you access SAW. These values will default in the next time you access this page.

In the Action field, verify that *Work with SMC* is selected, and click the action button → .

If the file name you entered does not exist, the program prompts you to create the new file. Press OK to create the file.

On the *SAW Home Page*, complete the following fields:

- JAS Install Directory

  Install directory for the ERP 8.0 JAS server or the SAW package

To enter the correct value for this field, search for the file "saw.css" on your web server. For example, if saw.css is found in the directory "/dir1/dir2/saw", then the correct value for this field is "/dir1/dir2".

- SAWDB Root directory

  Enter a path for the directory to store data collected by the SAW agent.

  Note that for AS400 and UNIX®, the user under which the web server is running needs full access rights to this directory.

- HTML Status Page

  Name of the HTML Page that SAW agent will create as an interface to SAW. (Use the default value if you run only one SAW Agent, or enter new names if you run additional SAW Agents.)

- Java Install directory

  Directory path to the "java.exe" file, or "java" for UNIX® and AS400, on the SAW Agent host.

  To enter the correct value for this field, look for the file "java.exe" (or "java" for UNIX® and AS400). If the file is found in the directory "/dir1/dir2/bin", then the correct value for this field is "/dir1/dir2/bin".

- Mail Server

  Enter your company mail server, for example, mail.company_name.com. The SAW agent uses this server to send e-mail/pager notifications when it detects faulty processes.

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Click on Submit.

To regenerate an SMC file

If you update SAW to a new version for which the SMC file is no longer compatible, or if your SMC file is corrupted for any reason, you can regenerate your SMC file from a text file.

Each time you change or save your SMC file, SAW creates a text file that contains the same information as your SMC file, but in a text file format. If your SMC file is called "saw.smc", then each time you change or save your SMC file, the system will save a text file called "saw.smc.txt".

To regenerate an SMC file from the text file, enter the name of the text file field (for example, "saw.smc.txt") in the "Agent SMC File Name" field and then select "Importing SMC from text file" from the action.
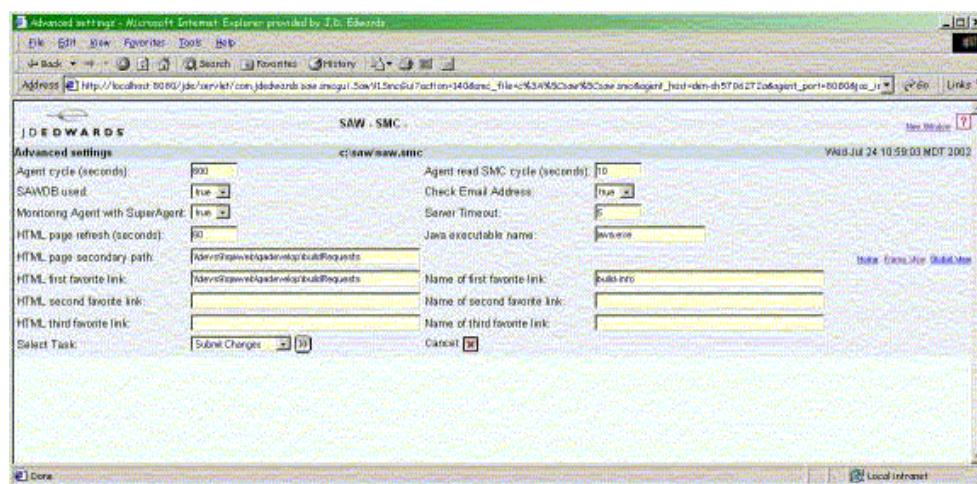
SAW will regenerate your SMC file with the same name as the name of the text file, but without the ".txt" extension (for example, "saw.smc").

Modifying Advanced SMC Settings

The SMC file includes a list of global parameters that govern the general monitoring process. These settings all have default values that should work fine under most SMC configurations. However, you can easily change these settings to suite your requirements.

▶ **To modify the advanced SMC settings**

On the SAW Home Page, select *Advanced Settings* from the Action field.

On the *SMC – Advanced Settings* screen, modify any of the following fields to suite your SMC configuration:

- Agent cycle

  Time (in seconds) between the start of one agent monitoring cycle and the next. See "Performing SMC Actions" for more information about Agent cycles.

- SAWDB used

  Change this field to false if you do not want to save statistics or event data in the SAW database.

- Auto Monitoring SAW Agent

  Change this field to false if you do not want the SAW agent to automatically restart when the agent fails.

- HTML page refresh

  Time (in seconds) to refresh all html pages (including collected data) used in SAW. This value is not related to the agent cycle.

- Agent read SMC cycle

  Time interval (in seconds) between times when the SAW Agent checks if the user forced the Agent Cycle. If the user forced the Agent cycle since the last read, the Agent will automatically start a new monitoring cycle.

- Check e-mail address

  Change this value to false if you do not want the system to verify that the e-mail addresses you enter have the correct format.

- Server timeout

  Time (in seconds) to wait for the response from a server before it assumes the server is down.

- HTML page secondary path

  Enter a valid network path to store an additional status page. This path is useful if you want to access SAW data from another web server that cannot access the primary web page. This path is required to access the Port View, which is defined in "Working with SMC Views."

- HTML first favorite link

  Enter the web addresses for up to three web links that you want to include in the result pages of SAW.

- Name of first favorite link

  Enter the names for each of your favorite links.

Verify that *Submit Changes* is selected in the Action field and press the Action button.
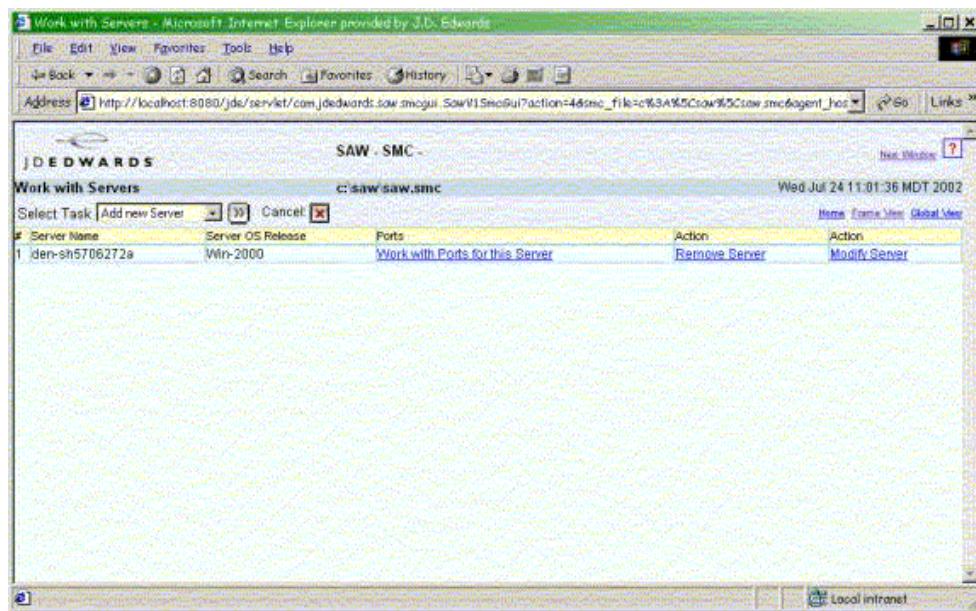
Adding ERP 8.0 servers

After creating the configuration file, you can then create a list of the ERP 8.0 Web, Enterprise, and XPIe Servers that you want to monitor.

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► **To add ERP 8.0 servers**

On SAW Home Page, verify that *Work with Servers* is selected in the Action field, and click the Action button.
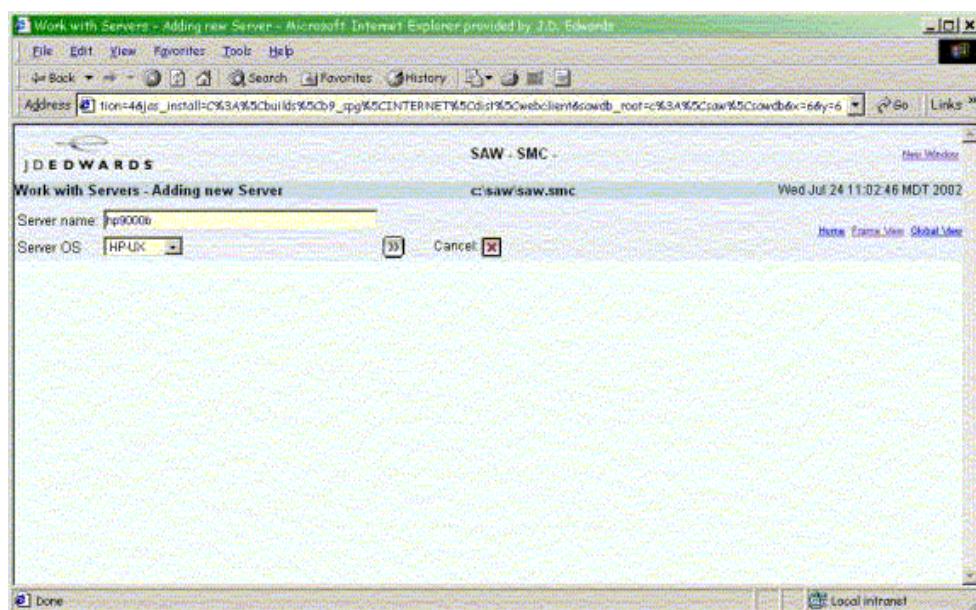
Note:

By default, the agent server name is automatically added to the list. This is to make sure that the agent will be restarted if it accidentally dies.

In the Action field, verify that *Add new Server* is selected, and click the Action button.
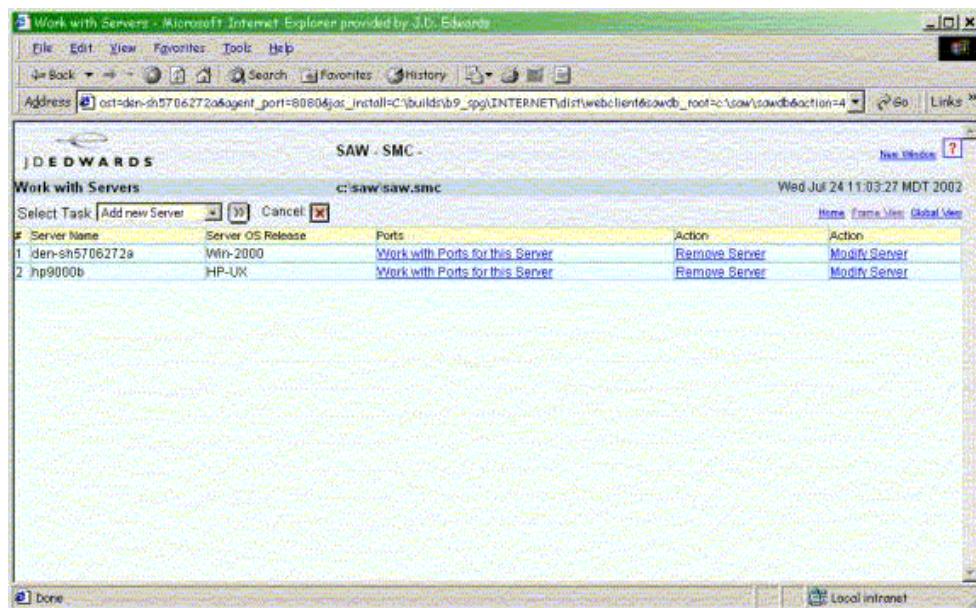
Complete the following fields:

- Server Name

  Type the name of the ERP 8.0 Server (Enterprise, Web, or XPI).

- Server OS

  Select the type of operating system for the server.

Click the Action button.
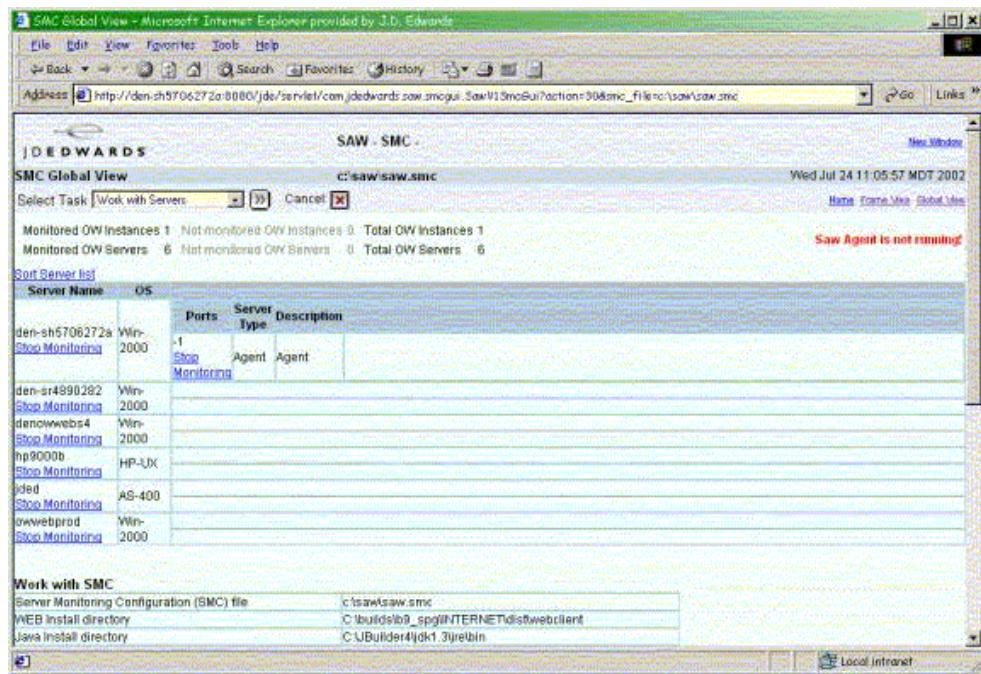
The program adds a new row to the Work with Servers screen listing the server you entered.

Repeat the steps above to add additional servers to the SMC configuration.

Verify each of the server names and operating systems you entered.

In the upper right corner of the SMC screen, click on the Global View link to view the current configuration. This screen shows at-a-glance the global settings and all the server/port information that you enter as you configure SAW. You can return to this screen at any time during the configuration process to view all the information you enter.

If you discover an error, return to the Work with Server screen, and click *Modify Server* next to the server you need to change, then correct the error.

When you have entered all the servers you want to monitor, select one of the following options:

- To add a port number for several servers at the same time, complete the following task, "Adding Ports for Multiple Servers."

- To add ports to a single server, complete the task named: "Customizing Server Ports."

Note:

If you want to monitor several servers that have similar port configurations, it is quicker and easier to assign a port number to multiple servers by completing the first task listed above.

Adding Ports for Multiple Servers

The following task describes how to add port numbers to the SMC file and assign these ports to several servers at once. Complete this task to configure servers with similar port configurations.
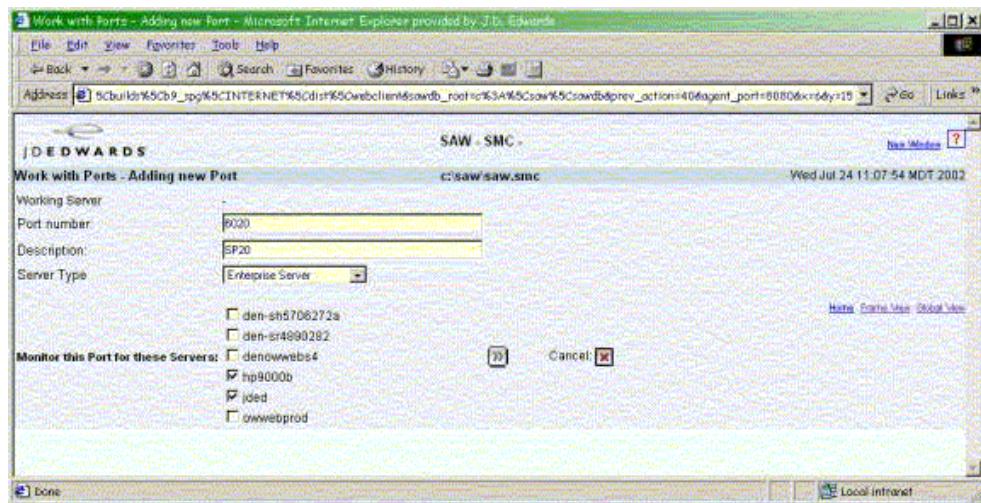
► To add ports to multiple servers

On the SAW Home Page, select *Work with Ports* from the Action field.
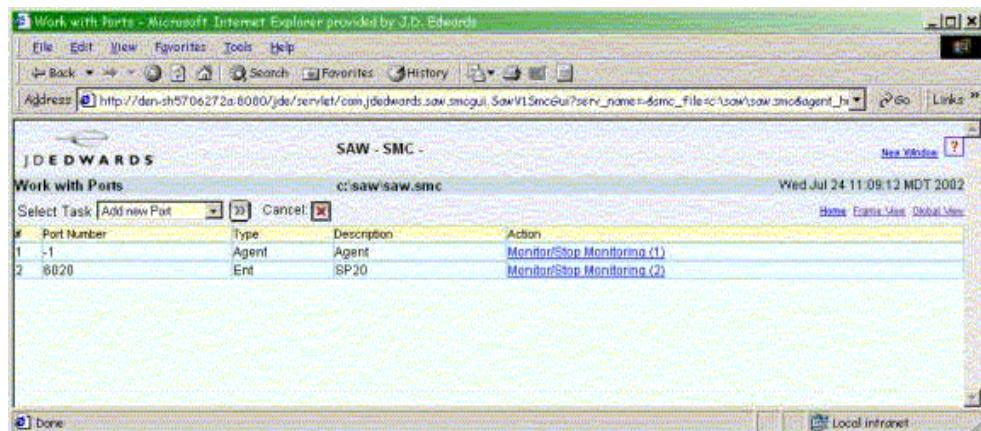
On the SMC – Work with Ports screen, select *Add new Port* from the Action field and press the Action button.

Complete the following sub steps to configure a port number:

1. On SMC – Adding new Port, complete the following fields:

   - Port Number

     Enter the port number you want to monitor (for example, 6004)

   - Description

     Enter a description of the port (for example, Xe_SP20)

   - Server Type

     Click the down arrow and select the type of server from the list.

2. Check the box to the left of each server that you want to assign this port number.

3. Click the action button to accept this configuration.

   The program adds the port number to SMC – Work with Ports screen.

Repeat the above steps for each port number that you want to add to multiple servers.

The screen displays the complete list of ports that you entered.

To view the complete configuration, click on the *Global View* link:

Adding events to multiple server ports

Once you have assigned port numbers to servers in SMC, you can assign a predefined event to each of the server ports, and alert administrators if the event indicates a malfunction. SMC includes two types of events:

- Events that are either true or false (such as Server down)

  For these events SMC will alert assigned administrators if the event occurs.

- Events that require threshold values (such as Disk Percent Used)

  You assign Warning and Alarm values to these types of events. For all threshold events, Warning = write in the event file, Alarm = write in the event file and send notification.
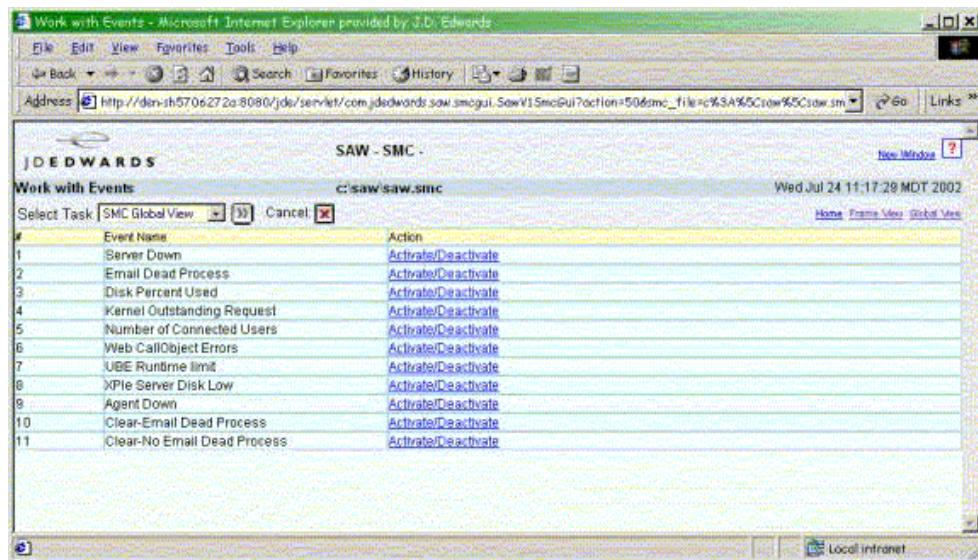
This task describes how to set up each of the following events and to assign these events to particular port numbers:

- Server Down – Monitor alerts administrators if it cannot communicate with a server port.

- Dead Process – Monitor alerts administrators if it detects a dead process on an enterprise server.

- Disk Percent Used – Administrator enters a warning and alarm threshold for the percent of disk space used (for example, 80%), and the monitor alerts administrators if the used disk space exceeds the threshold.

- Kernal Outstanding Request – Administrator enters a warning and alarm threshold for the number of unprocessed kernal requests, and the monitor alerts administrators if either threshold is exceeded.

- Web CallObject Errors – Administrator enters a warning and alarm threshold for the number of CallObject kernal process errors for a business function activated through a web server, and the monitor alerts administrators if the threshold is exceeded.

- UBE Runtime Limit – Administrator enters a warning and alarm threshold for the maximum time (in minutes) that a UBE can run, and the monitor alerts administrators if either threshold time is exceeded.

- XPIe Disk Low – Monitor alerts administrators if an XPI server port indicates it is low on disk space.
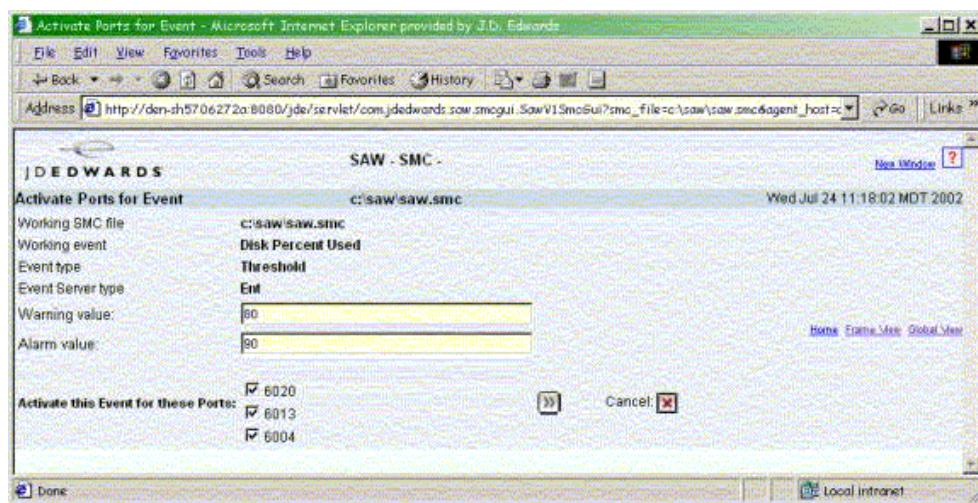
Note that this task assigns an event to a port number – it assigns the event to *all servers* that are associated with the port number. If you want to customize a port number on one server to monitor an event differently than other servers, you must complete the alternate task: "Customizing server ports."

To add events to multiple server ports

9. On the SAW Home Page, select *Work with Events* from the Action field and click the Action button.

10. On the SMC – Work with Events screen, click *Activate* next to the event you want to configure (in this example, Disk Percent Used).

11. For each of the following events, enter a Warning Value and Alarm Value, or accept the default values:

Event	Parameter
Disk Percent Used	Number (in %) of disk space used.
Kernal Outstanding Request	Number of unprocessed kernal requests.
Web CallObject Errors	Number of CallObject kernal process errors for a business function activated through a web server.
UBE Runtime limit	Time (in minutes) that a UBE should normally take to complete.

12. Check the box next to each port number you want to monitor for this event.

> **Note:**
> The event will be monitored on every server you assigned to the selected port numbers.

13. Click the Action button.

14. Repeat this task to assign other events to port numbers.

15. You can click on the Global View to see the current configuration.

Adding statistics to multiple server ports
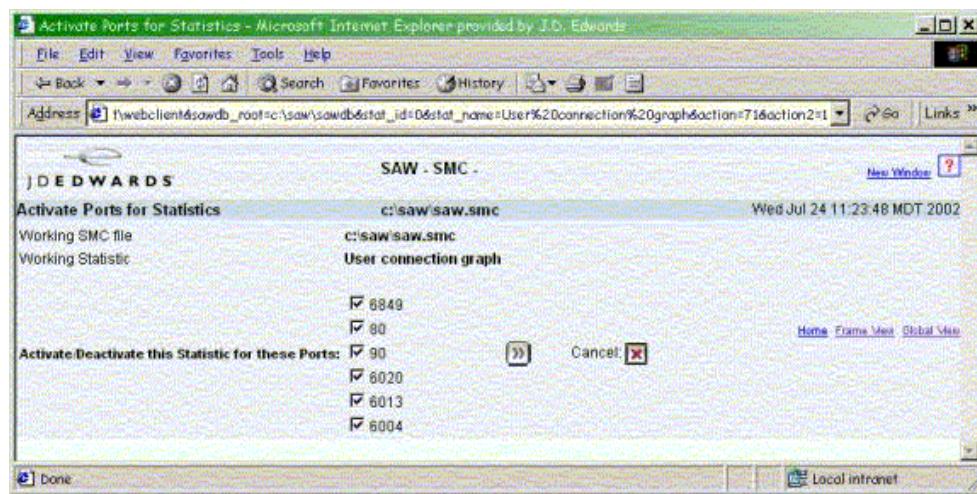
Currently the only choice of monitoring statistics is the User Connection Graph. The User Connection graph is a bar chart showing the number of users connected to a server port as a function of time. In this task you can configure multiple server ports to view this graph.

► **To add statistics to multiple server ports**

On the SAW Home Page, select *Work with Statistics* from the Action field and click the Action button.

On the SMC – Work with Statistics screen, click *Activate* next to User Connection Graph.

On the SMC – Activate Ports for Statistics screen, check the box next to each port number for which you want to include statistics.

Click the Action button.

You can click on the SMC Global View icon to see the current configuration.

Adding Profiles to events

Once you have assigned events to server ports, you can assign e-mail and pager addresses of administrators to each event so that they are notified when an error is detected or a threshold exceeded with any of the server ports assigned to that event.
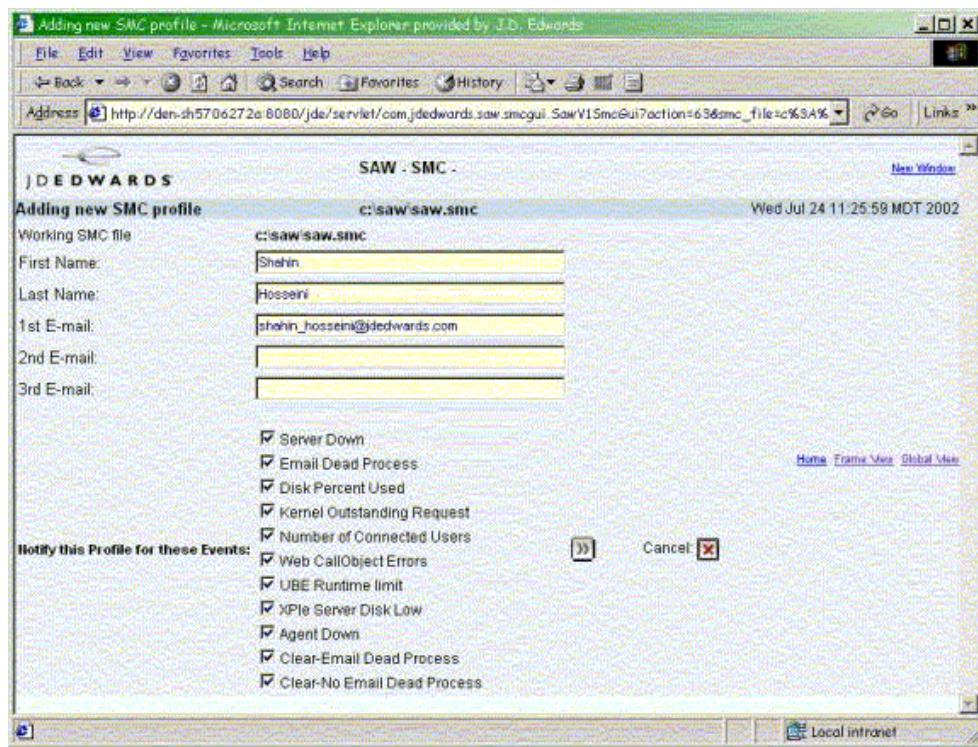
The e-mail and pager addresses of administrators are assigned to events as individual profiles. Each profile includes the administrator's name and up to three addresses. When you assign a profile to a particular event, this profile becomes attached to all server ports to which that event is assigned. If you want to assign different profiles to different server ports for the same event, see the task titled "Customizing Server Ports."

► **To add profiles to events**

16. On the SAW Home Page, select *Work with Profiles* from the Action field and click the Action button.

17. On the SMC – Work with Profiles screen, verify that *Add New Profile* is selected, and click the Action button.

18. Enter the name and e-mail addresses of a person you want to include on the notification list.

You must enter an e-mail address in the First E-mail field. The 2nd and 3rd E-mail fields are optional. However, if you do not enter an e-mail address in the 2nd and 3rd E-mail fields, make sure to delete the default values from these fields.

19. Check each of the events for which you want the person to be notified.

20. Click the Action button.

21. Repeat this task to configure other profiles.

22. You can view the current configuration in the SMC Global view.

Customizing Server Ports

In some cases you will want to modify individual server ports and their events, statistics, and profiles without affecting other ports. For these tasks you must *configure each port for each server separately*. *If you select Work with Ports from the SMC action field, you will affect the configuration of every server that uses the same port number.* Instead, you must "drill down" into a particular server configuration and modify each port number and its associated parameters individually.

► **To change servers**

On the SAW Home Page, select *Work with Servers* in the Action field, and click the action button.

Select one of the following subtasks:

- To add a server
- To delete a server
- To modify a server configuration

To add a server

1. Verify that *Add new Server* is selected in the Action field, and click the Action button.
2. On the SMC – Adding new Server screen, complete the following fields:

   - Server Name
   - Description
   - Server OS

3. Click the Action button to add the new server to the SMC configuration.
4. Continue with other tasks in this section to add ports, events, statistics, and profiles.

To remove a server

Click Remove Server next to the server you want to delete.
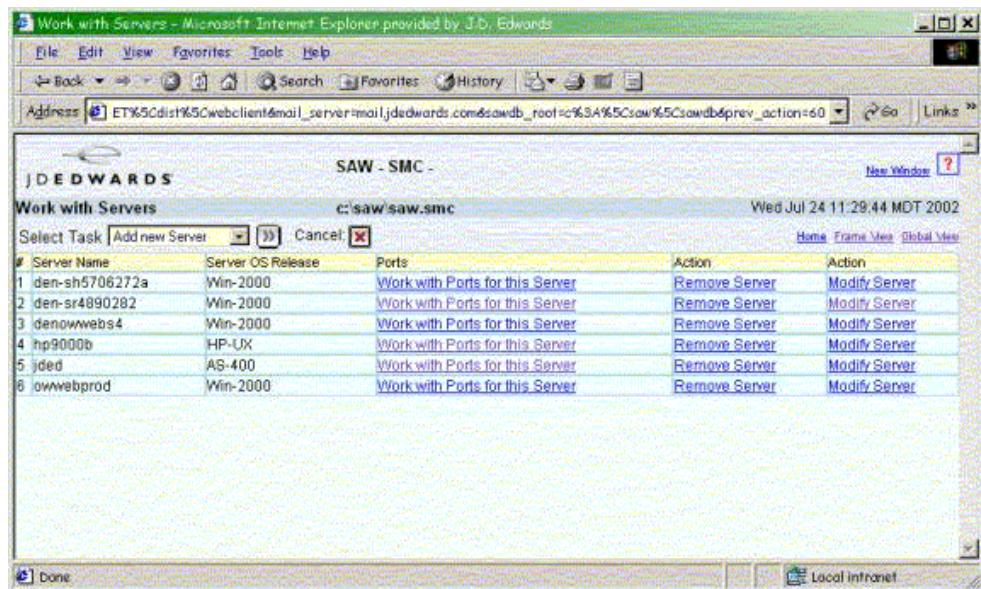
To modify a server configuration

1. Click *Modify Server* next to the server you want to modify.
2. Change the fields as needed and click the action button.
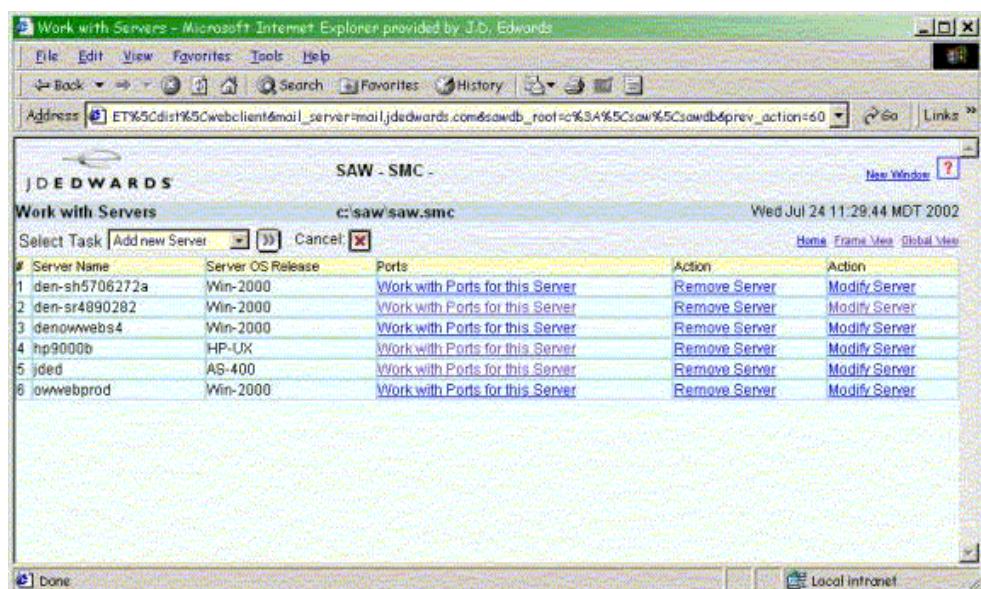
► **To change server ports**

On the SAW Home Page, select Work with Servers in the Action field, and click the action button.

In the row that lists the server you want to configure, click *Work with Ports for this Server*.

Select one of the following subtasks:

- To add a port
- To remove a port
- To modify a port

To add a port

5. Verify that Add new Port is selected in the Action field, and click the Action button.

6. On the SMC – Adding new Port screen, complete the following fields:

- Port Number

- Description

- Server Type

7. Click the Action button to add the new port to the SMC configuration.

To remove a port

Click Remove Port next to the port number you want to delete.
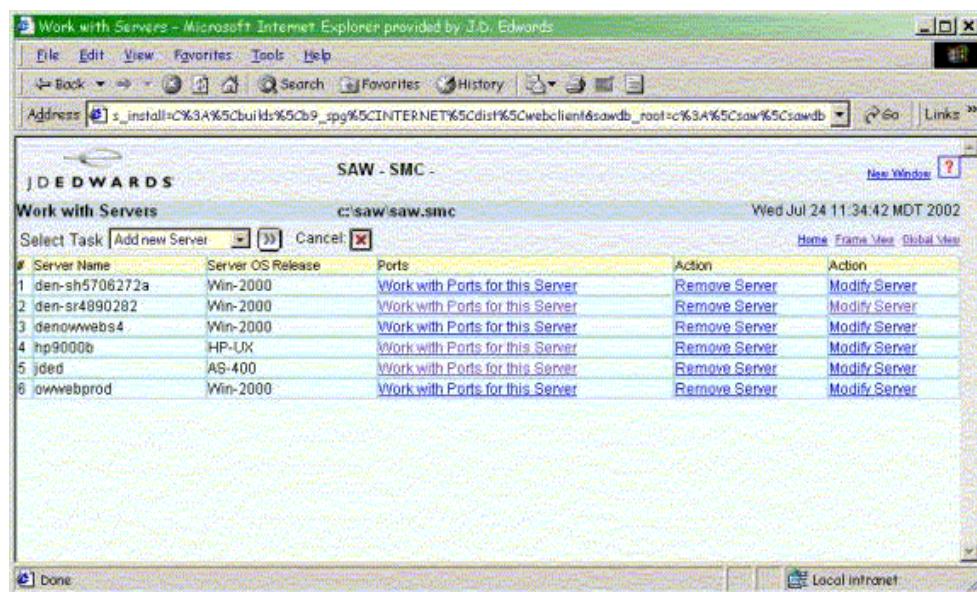
To modify a port
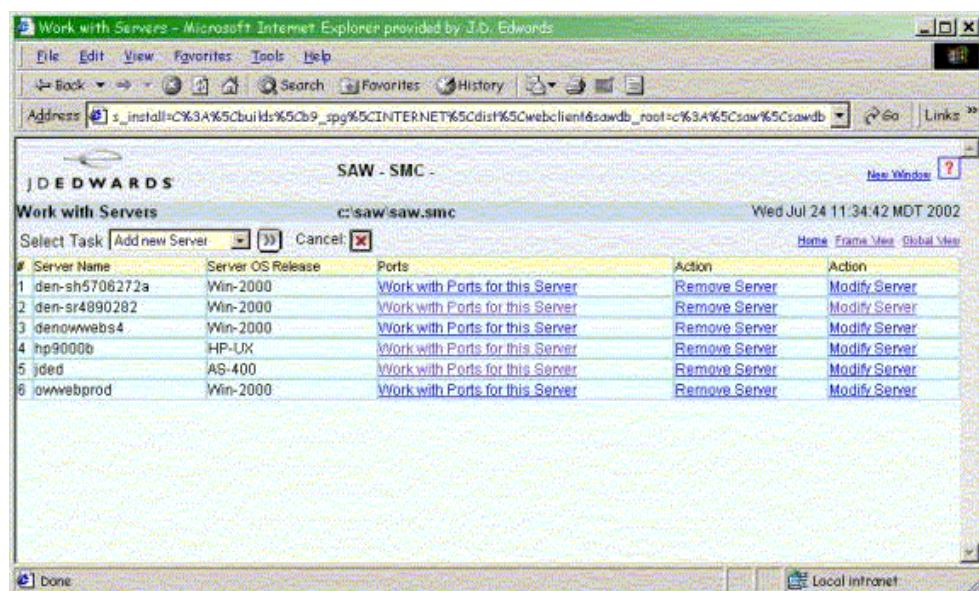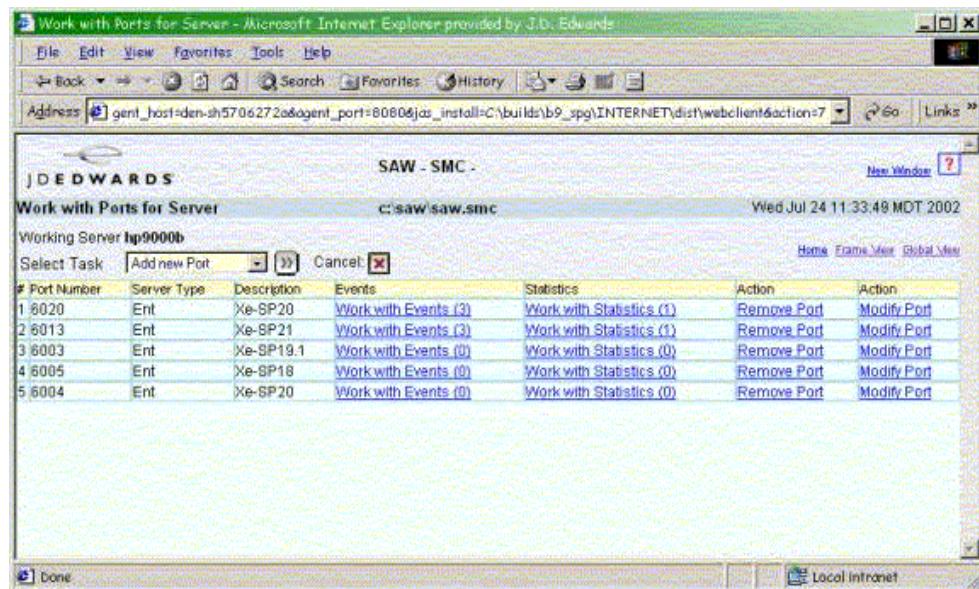
3. Click Modify Port next to the port number you want to modify.

4. Change the fields as needed and click the action button.

► **To change statistics on a server port**
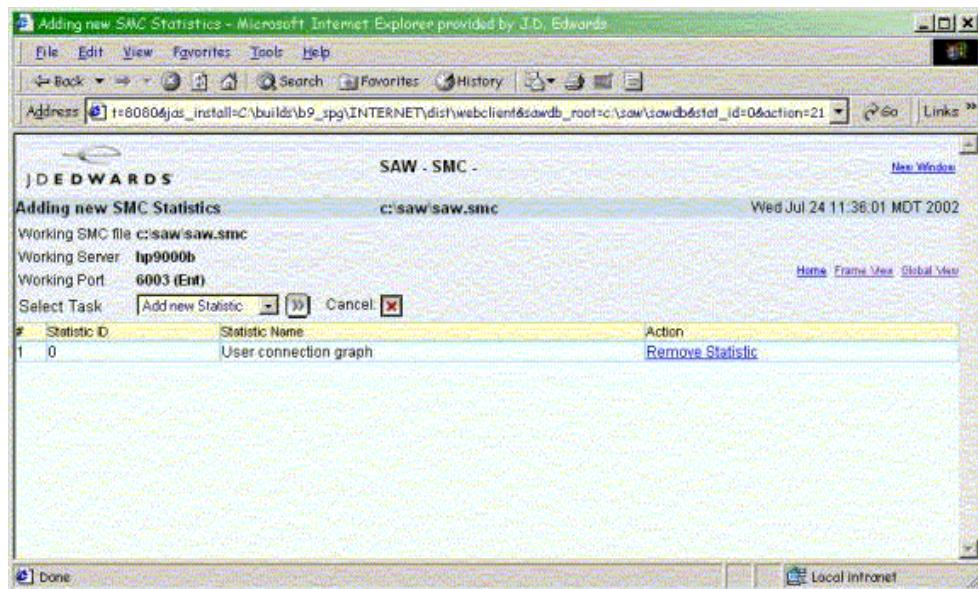
On the SAW Home Page, select Work with Servers in the Action field, and click the action button.

In the row that lists the server you want to configure, click Work with Ports for this Server.

Click Work with statistics next to the port number you want to modify.

Select one of the following subtasks:

- To add a statistic
- To remove a statistic

To add a statistic

8. Verify that Add new Statistic is selected in the Action field, and click the Action button.
9. On Selecting SMC Statistic, click the Action button.

> **Note:**
>
> SMC currently includes only one statistic you can add.
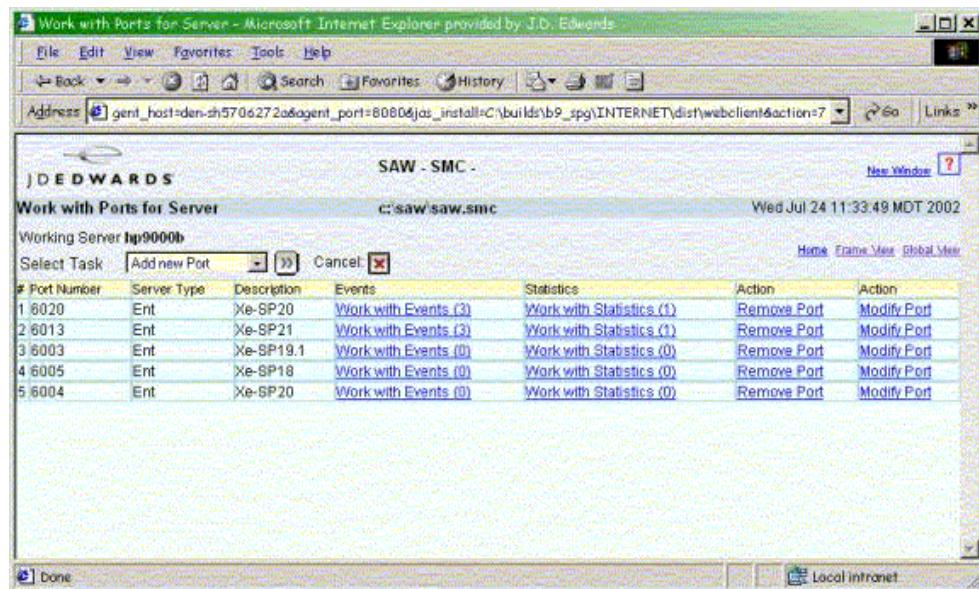
To delete a statistic

Click Remove Statistic.
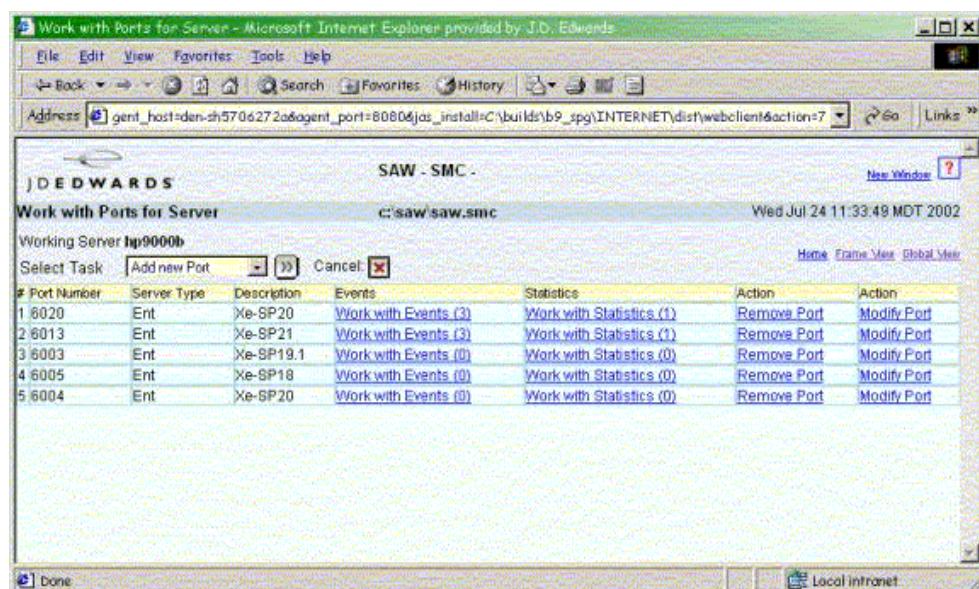
► To change events on a server port
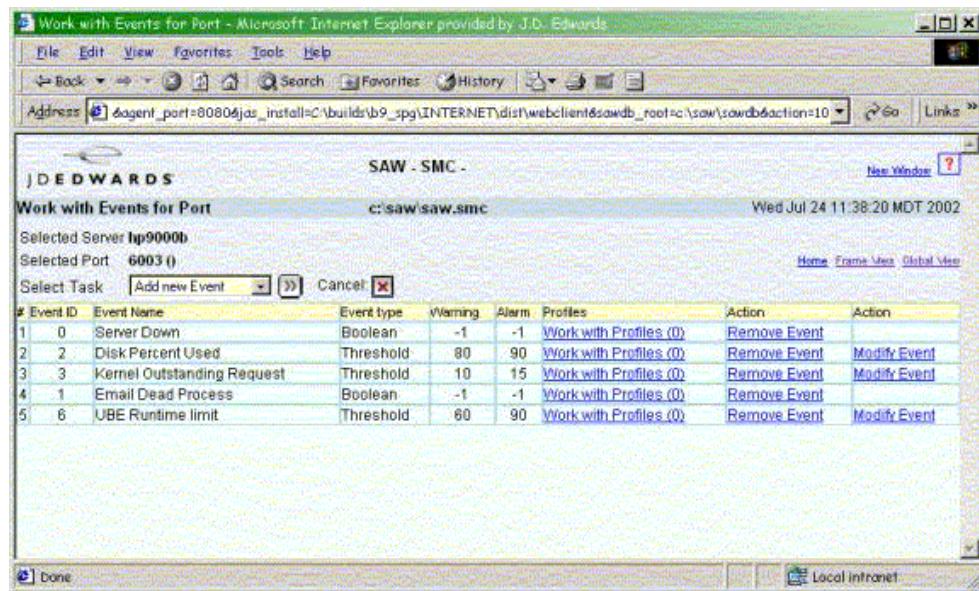
On the SAW Home Page, select *Work with Servers* in the Action field, and click the action button.

In the row that lists the server you want to configure, click *Work with Ports* for this Server.

Click *Work with Events* next to the port number you want to modify.

Select one of the following subtasks:

- To add an event
- To remove an event
- To modify an event

To add an event

1. Verify that *Add new Event* is selected in the Action field, and click the Action button.
2. On the SMC – Selecting new SMC Event screen, select an event and click the action button.
3. If the event includes threshold values, confirm the default values or modify them to suite your configuration.
4. Click the Action button.

To delete an event

Click *Remove Event* next to the event you want to delete.
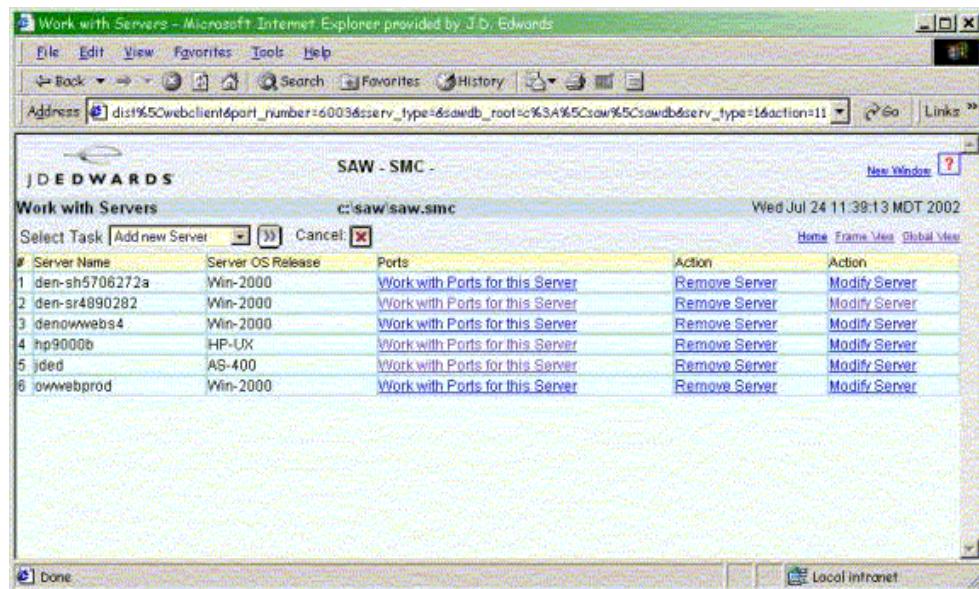
To modify an event

5. Click *Modify Event* next to the event you want to modify.
6. Change the fields as needed and click the Action button.
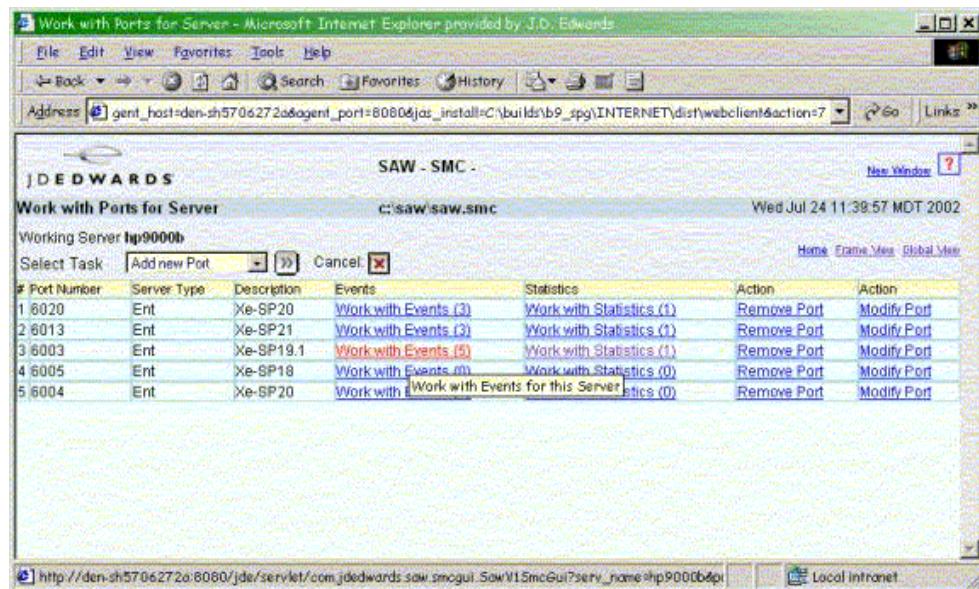
► **To change the profiles of a single event**
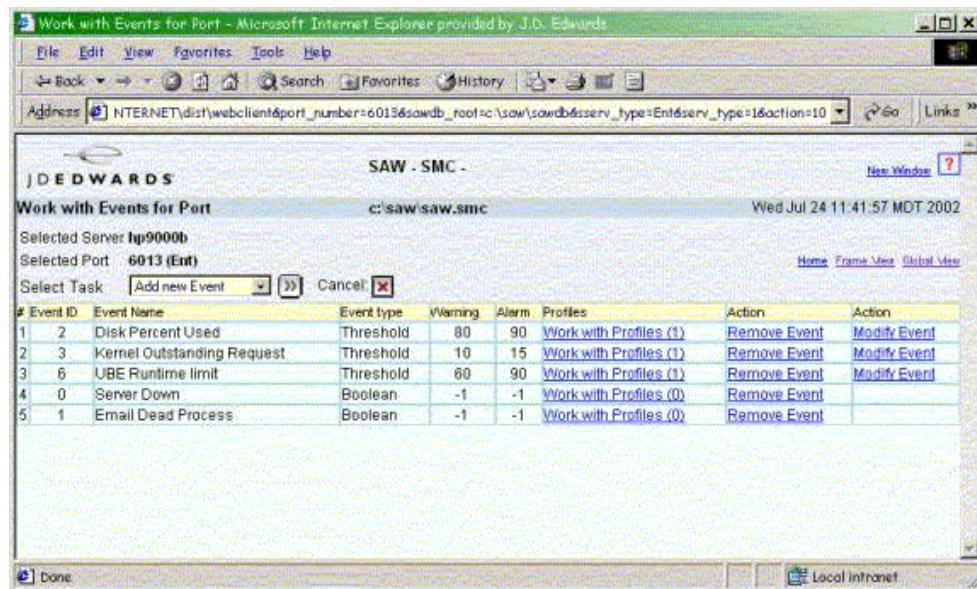
On the SAW Home Page, select *Work with Servers* in the Action field, and click the action button.
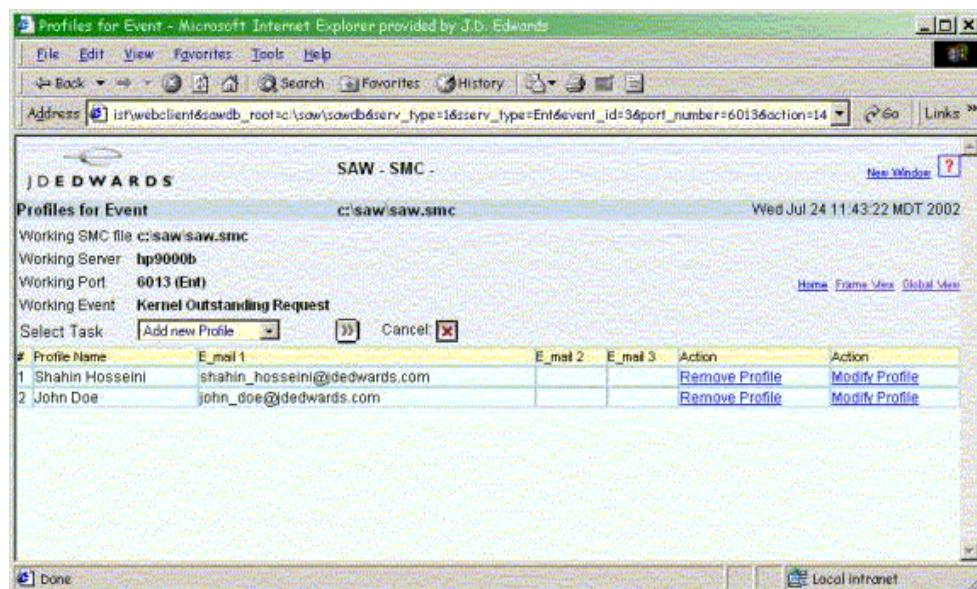
In the row that lists the server you want to configure, click *Work with Ports* for this Server.

Click *Work with Events* next to the port number you want to modify.

Click *Work with Profiles* next to the event you want to modify.

Select one of the following subtasks:

- To add a profile
- To remove a profile
- To modify a profile

To add a profile

1. Verify that *Add new Profile* is selected in the Action field, and click the Action button.

2. On Adding new SMC Profile, complete the name and e-mail address(es) of the person you want to notify.

3. Click the Action button.

To delete a profile

Click *Remove Profile* next to the person you want to delete from the notification list.

To modify a profile

1. Click *Modify Profile* next to the person whose profile you want to change.

2. Change the name and e-mail address as needed, then click the Action button.

> **Note:**
>
> You can add new e-mail addresses, modify or delete an existing address, or change the person's name.

Running the SAW Agent

Once you configure SMC, you can then run the SAW agent and begin monitoring the assigned server ports. When the agent is started, it cycles through each of the server ports, monitors the assigned events, and notifies the assigned users when a malfunction or warning threshold is crossed. The agent also collects and stores the statistical and event data in the SAW database.

Before you run the agent, it is important that your monitoring interval is longer than the time it takes the agent to cycle through all the server ports. The cycle time depends on the number of assigned server ports, the monitoring events, the statistics, and the number of e-mails it sends out. You can measure the cycle time by running the agent manually from the command prompt and noting the start times for each subsequent cycle. You can change or verify the cycle time on the SMC – Advanced Settings screen. See *Modifying SMC Settings* earlier in this section*.*

The agent sends an e-mail message to assigned users when it first detects a malfunction or event threshold, but does not send additional messages for the same event on subsequent cycles unless a new threshold is exceeded or a new event occurs.

► **To run the SMC agent**

The script file for the SMC file that you create is created under the SAW database directory.

For Windows

The name of the file is:

SawAgent_SMCFILE.bat

Where SMCFILE is the name of the current SMC file (for example, saw.smc).

For UNIX® and AS400

The name of the file is:
SawAgent_SMCFILE.sh

Where SMCFILE is the name of the current SMC file (for example, saw.smc).

For Windows

23. From Windows Explorer, go to the SAW database directory and double click on the SAW Agent script file.

For UNIX® and AS400

1. Go to the SAW database directory and run the script by typing the name of the script and hit return

24. Make sure that the SAW database directory has full access rights for the user under which the agent will be running.

Performing SMC actions

The SMC Action field is a pull down menu of functions that help administrators configure and monitor ERP 8.0 servers. The action field is available at the top of most SMC screens. Although some of the functions in the Action field are discussed in detail in other sections that describe how to configure the server ports, this section gives a brief description of all the available functions.

Action Field Function	Description
Work with Servers	Displays the Work with Servers configuration screen
Work with Ports	Displays the Work with Ports configuration screen
Work with Events	Displays the Work with Events configuration screen
Work with Statistics	Displays the Work with Statistics configuration screen
Work with Profiles	Displays the Work with Profiles configuration screen
Work with SMC	Displays the SMC – Global Settings screen – same as home page.
Stop Monitoring All Servers	Deactivates all servers/ports in the SMC file so the agent will not monitor them. Servers/ports are not removed from the SMC file.
Start Monitoring All Servers	Activates all servers/ports in the SMC file so the agent will monitor them.
Force Agent Cycle	Manually restarts an agent cycle
Submit	Validates the SMC settings you have entered

Action Field Function	Description
Advanced Settings	Displays the advanced SMC settings
Stop SAW Agent	If the SAW agent is running, stops the agent and cancels the monitoring cycle
SMC Global View	Displays the SMC Global View
View Agent log files	Displays agent logs
Delete Agent log files	Deletes agent logs
Perform SMC Actions	Access SMC configuration screens

Working with SMC Views

SMC includes the following views that allow you to view the status of each port and identify problems with the servers and processes:

- Work with SMC
- Port View
- Table View
- Frame View
- SMC Global View

These views are accessible from most SMC screens by clicking the appropriate link on the right side of the screen.

Each view gives administrators a different perspective on the data and allows them to perform unique functions:

View	Description	Available functions
Work with SMC	Displays the SMC configuration screens.	• Access configuration screens
Frame View*	Lists all the servers/ports by the type of server (enterprise, web, XPI). This text-based frame view allows users to view the result of their requests in a separate frame in the same window.	• Force Agent Cycle • Delete Agent logs • Perform SMC Actions • Display status of server ports (up or down) • Link to a monitoring interface that is specific to the server type (enterprise, web, XPI) • Display agent logs • Display event logs • Display User Connection Chart • Display statistics file
Table View*	Lists all the server ports by the	• Force Agent Cycle

	type of server (enterprise, web, XPI). Graphical interface illustrates the status of a server port. The result of the requests will be displayed in a new window.	• Delete Agent logs • Perform SMC Actions • Display status of server ports (up or down) • Link to a monitoring interface that is specific to the server type (enterprise, web, XPI) • Display agent logs • Display event logs • Display User Connection Chart • Display statistics file
Port View*	Displays an array of server ports by server name and port number. Graphical interface shows the status of each port. This view is only created by the agent if you enter a path for the *HTML page secondary path* on the Advanced Settings page.	• Display status of each port (up or down) • Link to a monitoring interface that is specific to the server type (enterprise, web, XPI)
SMC Global View	Displays the contents of the entire SMC file and allows users to modify some of the settings.	• Force agent cycle • Modify events and e-mail addresses • Start or stop monitoring all servers • Start or stop monitoring all ports on a single server. • Display events and profiles for each server port. • Display global SMC settings

* The Frame View and Table View show the same information in different formats.

The *Work with SMC* and *SMC Global View* screens are illustrated in previous sections. Examples of the Port View, Table View, and Frame View are shown in the screens below.

Frame View

Organized by server type at left frame.

Result of requests displayed at the right frame.

Table View

Result of the request in a separate window.

Port View

One server name per column.

One port number per row.

Result of the request in a separate window.

Accessing the server monitoring interface

From the Port View, Table View, and Frame View, you can access a monitoring interface for each server by clicking on the link for that server. Each interface allows you to monitor specific data and parameters for the selected server, and the interface is the same regardless of the view from which you start. Although the information available depends on the type of server being monitored (Enterprise, JAS, or XPI), the look and feel of each interface is the same.

The screens below show the monitoring interface for each of the three types of servers. For more information on each of the three interfaces, refer to the following sections:

- Monitoring ERP 8.0 Enterprise Servers from the Web

- Monitoring ERP 8.0 JAS Servers from the Web

- Monitoring ERP 8.0 XPIe Servers from the Web

These sections include detailed descriptions of each of the screens and describe how to access various functions and views.

Enterprise Server

Web Server

XPI Server

Monitoring ERP 8.0 Enterprise Servers from the web

The Enterprise Server Monitor allows you to use the web to monitor a ERP 8.0 enterprise server. The Enterprise Server Monitor uses SAW APIs that have been converted to Java code. To create the web interface for the Enterprise Server Monitor, the JAS server calls newly developed servlets, which in turn call SAW APIs to retrieve info from the enterprise server.

To monitor an enterprise server from the OW-XPI workspace, or from the sawent.html page, you must enter a valid host name and port number in the Enterprise Server Monitor workspace. You use the combo box to choose a view, and then click the Monitor button to view data. Each view contains a header with the following information on the enterprise server:

- Enterprise server name and port number, such as sundev/6012

- ERP 8.0 release, such as B733 - Service Pack 13.0

- Server status, either up or down

- Percentage of disk space used

- Server log file size, in kilobytes

- Number of server log files

- Size of log files, in kilobytes, of process currently running on the server

Server Summary View

The Server Summary view allows you to conveniently monitor the status of the ERP 8.0 enterprise server and the processes that are running on it.

The Server Summary view displays in a table the following essential information on processes running on the server:

- Process name

- Log file information. Click the magnifying glass to view the process log file.

- Debug log file information. Click the magnifying glass to view the process debug file.

- Process ID

- Process status. A check mark indicates the process is active. If the entire row displaying information on the process is red and the status is ZOMBIE, the server process is dead.

- Total number of requests processed.

- Number of outstand requests for the process. An increase in this number indicates a potential problem with the process.

- Users of server processes. Click the magnifying glass to view the list of users connected to a kernal process.

- Zombie. Click the icon to remove the zombie process from the table.

The Server Summary view displays the following essential information only if the server you are monitoring supports them:

- Max #. Maximum number of processes to be created on the server. Click on the number to change the value.

- Trace. Click on on_off to activate/deactivate the debugging for the process

Note:
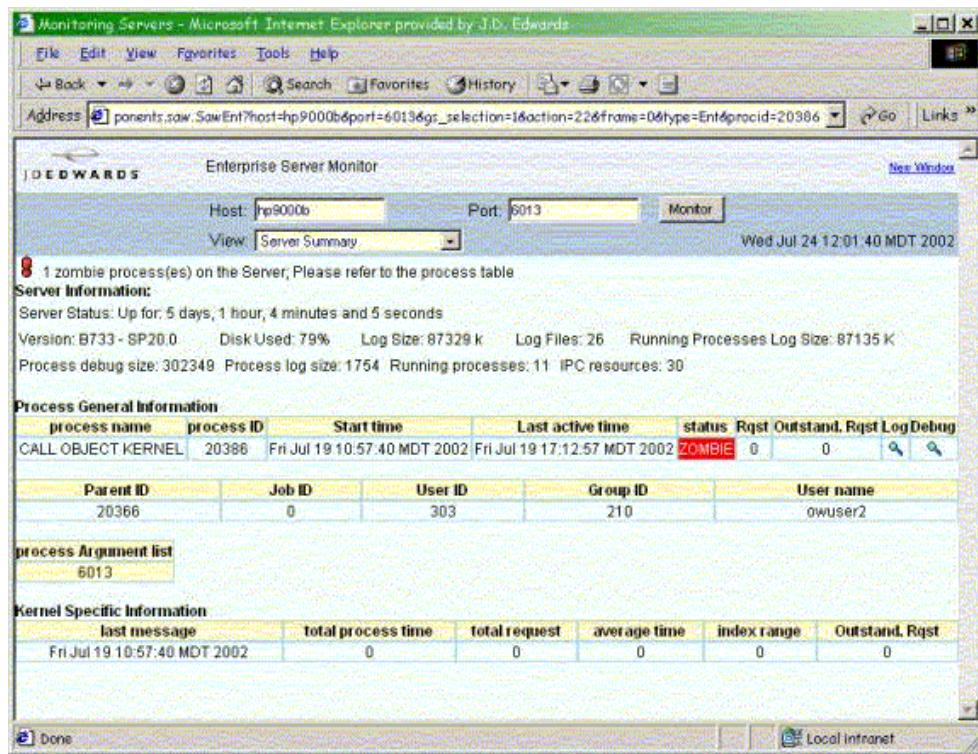
For a detailed discussion of enterprise server processes that you monitor using SAW, see *Monitoring ERP 8.0 Server Processes* in the chapter *Monitoring ERP 8.0 with SAW on Windows NT* in this section.

You can view further details on server processes by clicking on the process name in a row of the table.

Process Name

Click the URL that identifies an enterprise server process name to view detailed information about network, kernel, and queue processes.

When you click the URL, the Process info view appears.

In addition to general server information, the Process info view also displays the size of the log and debug log files for the process you chose, as well as the total number of processes running on the server and the total number of running interprocess communication (IPC) resources.

A table displays the parameters for the process, with values for each. Many of these parameters also appear in the Server Summary view. However, the view for a specific process contains some additional information:

- Time and date the process started

- Time and date the process was last active, or for zombie processes, the time and date the process died.

- Parent ID of the process

- Job ID of the process

- User ID of the process

- Group ID of the process

- User name

If the process is a security kernel or a CallObject kernel and there is a current user for the process, additional information appears. See the topic *Users* in this chapter for more details.

You can view the log file and debug log file for a process by clicking the magnifying glass icon under the appropriate column in the table.

> **Note:**
>
> You can also view the log file or the debug log file for a process by clicking the magnifying glass icon in the appropriate row and column of the table in the Server Summary view.

Depending on the kind of process that you choose, the Process info view displays additional information. For example, if you choose a network process, the Process info view displays the values for the following network messaging parameters:

- Time of the last message

- Total processing time, in milliseconds

- Total number of messages

- Average processing time

- Stream port, which is the connection port for the movement of data

- Data port, which is the transfer port for the movement of data

- Number of in connections

- Number of out connections

- Connection type (incoming or outgoing)

- IP address

If you choose a kernel process, the Process info view displays the following kernel-specific information:

- Index range, which defines the kind of kernel process that is running. For example, the value of the index range parameter for a security kernel is 3. These values are defined in the server's jde.ini file.

- Number of outstanding requests for the process
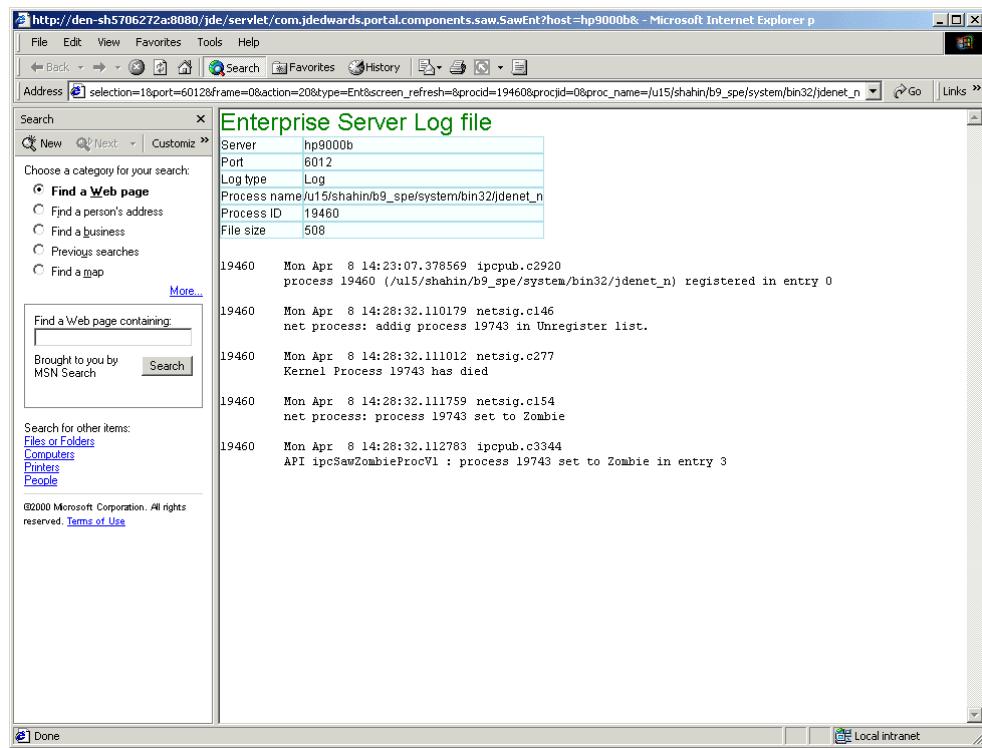
If you choose a queue process, the Process info view displays the following queue-specific information:

- Server on which the UBE is running

- ERP 8.0 environment on the server on which the UBE is running

- Name of the UBE batch queue and its number

Log

From the Server Summary view, you can view the log file for a server process by clicking the magnifying glass icon in the Log column of the table containing the process information.

When you click the magnifying glass icon, an HTML page containing the log file appears.

The HTML page displays the log file with a header that contains the process name, the process ID, and the file size, in kilobytes.

Debug

From the Server Summary view, you can view the debug log file for a server process by clicking the magnifying glass icon in the Debug column of the table containing the process information.

When you click the magnifying glass icon, an HTML page containing the debug log file appears.

Users

If you click a magnifying glass icon in the Users column of the table in the Server Summary view, the Enterprise Server Monitor displays a User List.

The User List contains the user name, the name of the user's machine, and if available, the time the user connected to the process.
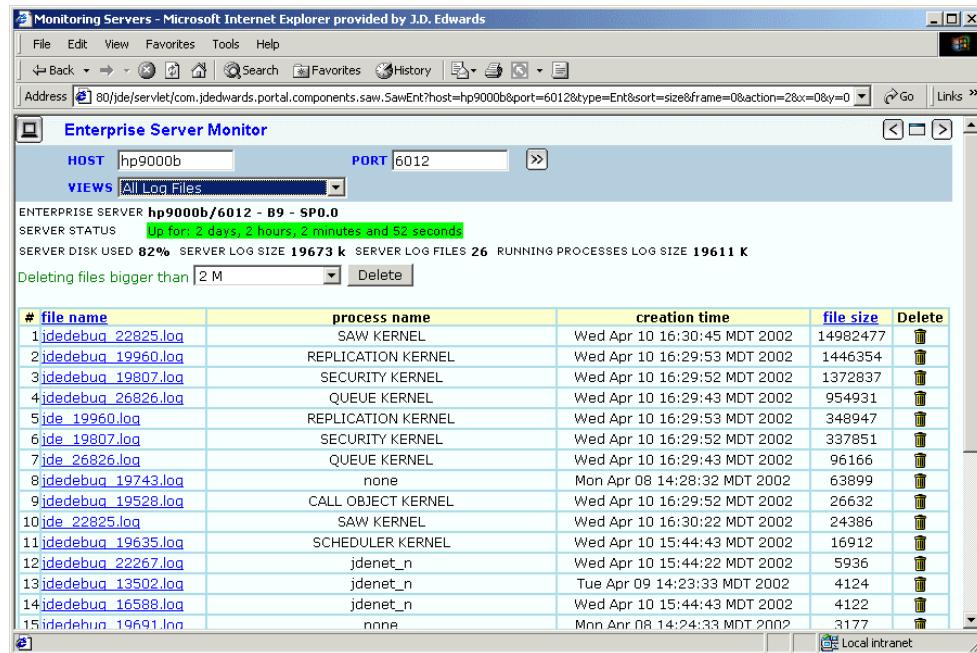
Zombie

Zombie is the status of a process that dies on the server. When a process dies on the enterprise server, a mechanism on the server keeps the dead process in SAW registration shared memory and changes its status from Active to Zombie. The process appears in the process list with a status of Zombie even if a process is created and dies between SAW data-retrieval cycles. Although the process is not present in the operating system on the Server, the process will be listed in the process table until the Administrator removes it.

In the Server Summary view, the row containing the summary information for a process that has died appears in red, and the Zombie parameter column contains a trash can icon. If you have SAW administrative rights, you can click the icon to delete the dead process from the server.

All Log Files View

If you click All Log Files in the combo box in the Enterprise Server Monitor workspace, the Log File Summary view appears.

The Log File Summary view displays the names of all the log files and debug log files on the server, as well as the time each file was created, and the size of each file, in kilobytes. You can use the combo box in the view to set the threshold file size for the files to be deleted. If you have SAW administrative rights, click the Delete button to start the deletion process.

To view a log file or debug log file for a process, you click the URL in the Name column of the table in the Log File Summary view. An HTML page containing the file appears. A header on the page identifies the file name and its size.

If you have SAW administrative rights, you can delete a log file or debug log file by clicking the trash can icon in the Delete column of the table in the Log File Summary view.

For information on assigning SAW administrative rights, see the chapter *Setting up Security Access for SAW* in this section.

Active Log Files View

The Active Log Files view displays log file and debug log file information only on those processes currently running on the server.

Disk Usage View

If you click Disk Usage in the combo box of the Enterprise Server Monitor, the Disk Usage Summary view appears.

The Disk Usage Summary displays the following information on the disks that make up the enterprise server you are monitoring:

- Disk name
- Volume ID
- Used space, in kilobytes
- Free space, in kilobytes
- Percentage of space used
- Type of disk mount\

A green line in the table indicates the disk on which the enterprise server is running. If a line is red, 80 percent or more of the space on the disk has been used.

Monitoring the ERP 8.0 JAS Servers from the Web

The Web Server Monitor provides a unified interface administrators can use to monitor processes on the web server and business functions running on enterprise servers connected to the web server. Using the Web Server Monitor, you can monitor, in real time:

- Web server users and their use of the server
- JDENET connection pools to enterprise servers
- Business functions running on enterprise servers connected to the web server
- Drivers used by the web server to connect to data sources
- Log and debug files

The Web Server Monitor provides a continuous stream of web server data that can aid you in:

- Troubleshooting
- Performance tuning

The Web Server Monitor enables you to monitor a web server when you are running ERP 8.0 on a Java or HTML client. Thus, even with a light or zero client configuration that lacks the Server Administration Workbench executable, you can monitor the web server simply by typing in the server's Universal Resource Locater (URL).

Web Server Monitor Technical Considerations

You use the Web Server Monitor only for monitoring of web server activities. You cannot use it to monitor enterprise servers, although you can monitor the CallObject tasks that a web server submits to an enterprise server. For detailed monitoring of enterprise servers, use the Server Administration Workbench.

The Web Server Monitor will monitor only one server at a time, although you can change your monitoring from one web server to another by typing in the name of a different server.

Accessing the Web Server Monitor

Caution:

The URL is case sensitive. If you enter characters in caps, a Page Not Found error appears.

► **To access the Web Server Monitor**
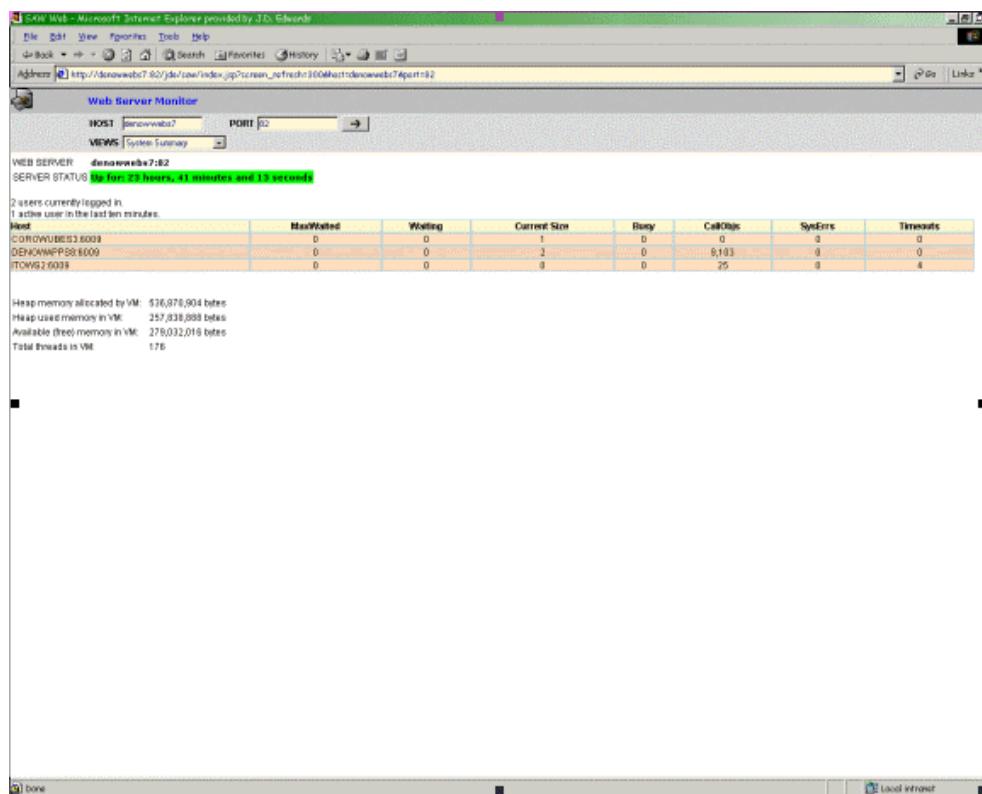
1. Log on to the internet and enter a URL in the address control with the following:

   • Name of the ERP 8.0 web server

   • Directory where the Web Server Monitor files are located

   Example: http://owweb1/jde/saw/sawWeb.html

2. Press the Enter button.

The Web Server Monitor form appears.

Configuring the Web Server Monitor

Using the Configure view of the Web Server Monitor, you can set the values of four monitoring parameters or accept the monitor's default values for the parameters:

- CallObject Timeout, in minutes. The default setting is 1.5 minutes.

- Maximum Host Pool, in number of enterprise server connections. The default setting is 50 connections.

- Maximum JAS Log Retrieve Size, in kbytes. The default setting is 50 kbytes.

- Maximum JAS Debug Log Retrieve Size, in kybtes. The default setting is 50 kbytes.

In addition, the Configure view contains a Flush OCM button. If the Object Configuration Manager mappings on the server change, you can click this button to flush the OCM cache. Subsequent caching will reflect the new OCM mapping.

Note:

The parameter values that you set in the Configure view are not persistent. You must reset them each time that you use the Web Server Monitor.
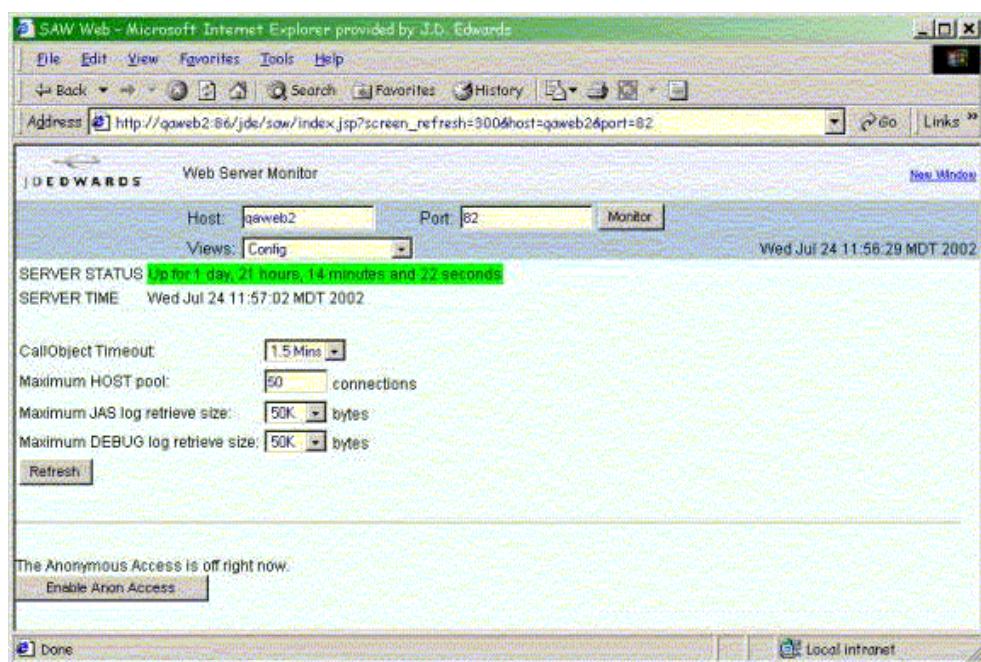
► **To configure the Web Server Monitor**

1. In the System Summary view of the Web Server Monitor, click the scroll button and choose Config.

The Configure view appears.

2. Click the scroll buttons or type in new parameter values to make changes to the following controls:

- CallObject Timeout

- Maximum Host Pool

- Maximum JAS Log Retrieve Size

- Maximum JAS Debug Log Retrieve Size

3. Click the Update button.

4. To flush the OCM cache, click the Flush OCM button.

   After you click the Flush OCM button, the sentence above the button should read, "The OCM cache has 0 entries."

Monitoring the Web Server System

The Web Server Monitor form initially displays system summary information for the web server. The System Summary view offers a quick synopsis of the system's operations at the point in time that you access it. The page will refresh automatically.

The System Summary view displays the following server operation data:

- Length of time the system has been running

- The number of users currently connected to the web server

- The number of web server users who have been active in the last 10 minutes

- Information about enterprise servers connected to the web server

- Statistical data on tasks performed by the virtual machine software

In addition, the System Summary view displays a warning message if the log file exceeds 1 mb in size.

The most detailed information in the System Summary view relates to the enterprise servers connected to the web server. The following table summarizes the information displayed in the table in the System Summary view:

System Summary Table Parameter	Description
Host	Name of the enterprise server connected to the web server and port number.
Max Waited	The number of users waiting. For example, if the maximum number of connections allowed, as defined in the server's jde.ini file, is 10, you see no value for the Max Waited parameter until the eleventh user tries to connect. The Max Waited parameter value then is 1. If another user tries to connect, the value is 2, and so on.
Waiting	Number of users currently waiting for a socket connection. The parameter has no value until the number of users trying to connect exceeds the number of socket connections allowed by the server's jde.ini file.
Current Size	Number of socket connections in the connection pool.
Busy	Number of socket connections currently in use.
CallObjs	Total number of business functions run on the enterprise servers while the system has

been up.

SysErrors	Total number of system errors logged from business functions running on the enterprise servers.
Timeouts	Total number of business functions that timed out while running on the enterprise servers.

For more information on connections to the enterprise server, see *Monitoring Connection Pools* in this chapter. For more information on monitoring business functions running on an enterprise server connected to the web server, see *Monitoring Business Functions Running on Connected Enterprise Servers*, also in this chapter.

To navigate to another view from the System Summary view or from any other view in the Web Server Monitor, you click the scroll button in the upper left-hand corner of the form. A drop-down menu displays each available view in the Web Server Monitor:

Web Server Monitor View	Information Displayed
User List	Data on individual web server users.
CallObject Info	Data on business functions running on each enterprise server connected to the web server.
Log Files	JAS.log, JASdebug.log file information; WebSphere application server information written to the stdout and stderr files.
Environment	Properties of the platform's virtual machine, including its full version and path.
Config	Configuration parameters for the Web Server Monitor. You can change these.
JDENET Pool	Data on pools of enterprise server connections to the web server.
JDBC Pool	Data on database drivers and pools of connections to the database.
Virtual Clients	Data on clients using the HTML interface. The parameter represents a subset of the User List parameter; the User List includes clients using both the HTML and JavaApplet interfaces.
Outstanding Requests	List of all users waiting for a response from the web server.
Thread List	List of all threads, thread groups, and thread pools running on the web server.

Monitoring Web Server Users

The System Summary view displays aggregate information about web server users. The User List view displays data about individual users connected to the web server. The list of users displayed in this view includes users who are currently logged on. The Web Server Monitor updates the user data each time you click the Refresh button.

You can use the User List view to view user data that is not displayed in the System Summary view:

- The maximum number of users allowed on the server

- The maximum number of users who have connected to the server at any point during a session
- The number of user sessions serviced by the server
- The number of minutes a session can be idle before it times out
- The users who are currently active, meaning those who have not timed out of a session
- Active users who have accessed the web server in the last 10 minutes

A table in the User List view displays parameters and values for each user session. The following table summarizes the information displayed in the table in the User List view:

Parameter in Table of User List View	Description
User Name	User's ERP 8.0 login ID.
Environment	The path code and OCM mappings that define the particular environment in which the user is working, such as PDEVNIS2.
Display Type	The way that the ERP 8.0 web page is displayed, such as HTML.
Computer Name	The name of the user's workstation.
Login Time	The time and date the user connected to the ERP 8.0 web server.
Idle Time	The amount of time, in minutes, that a user has been inactive during a ERP 8.0 session. The parameter value is "Active" for any user who has performed an action in ERP 8.0 within the last minute A row is shaded green for users active in the last five minutes.
Host	The enterprise server to which the user has connected during the session. This parameter can be blank.
Agent ID	The workstation's browser type.
Session ID	A unique numerical identifier for each user session.
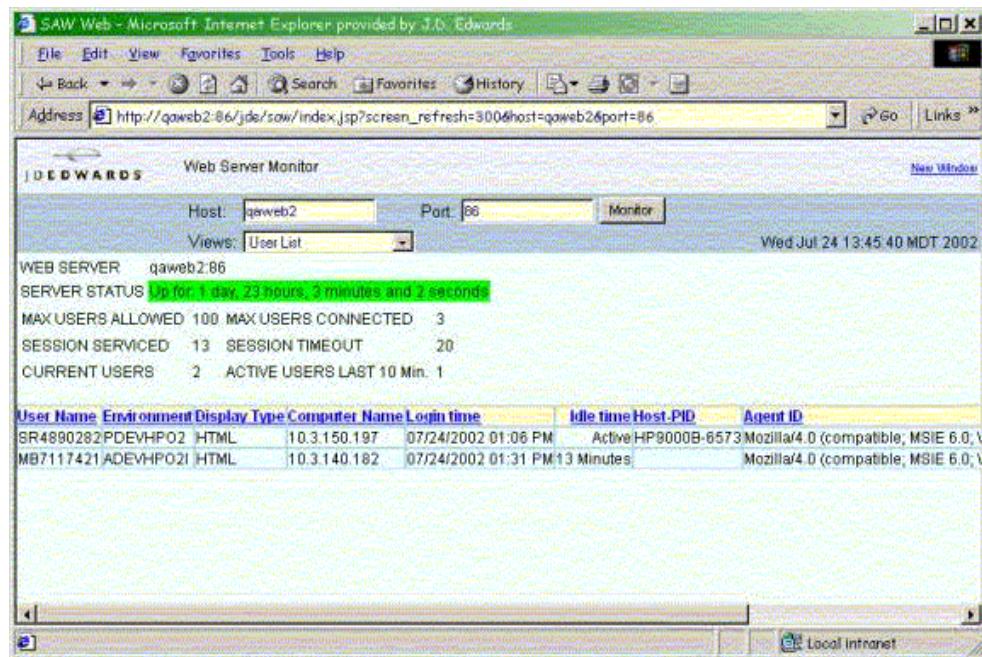
The table provides at a glance user information that can be useful in troubleshooting. For example, you might check the Agent ID parameter to see if the user has a browser that is out of date. You might also correlate problems with business functions running on an enterprise server with a particular environment.

► **To monitor web server users**

1. In the System Summary view of the Web Server Monitor, click the scroll button and choose User List.

The Web Server Monitor displays the User List view.

2. Click the Refresh button to get the latest user information.
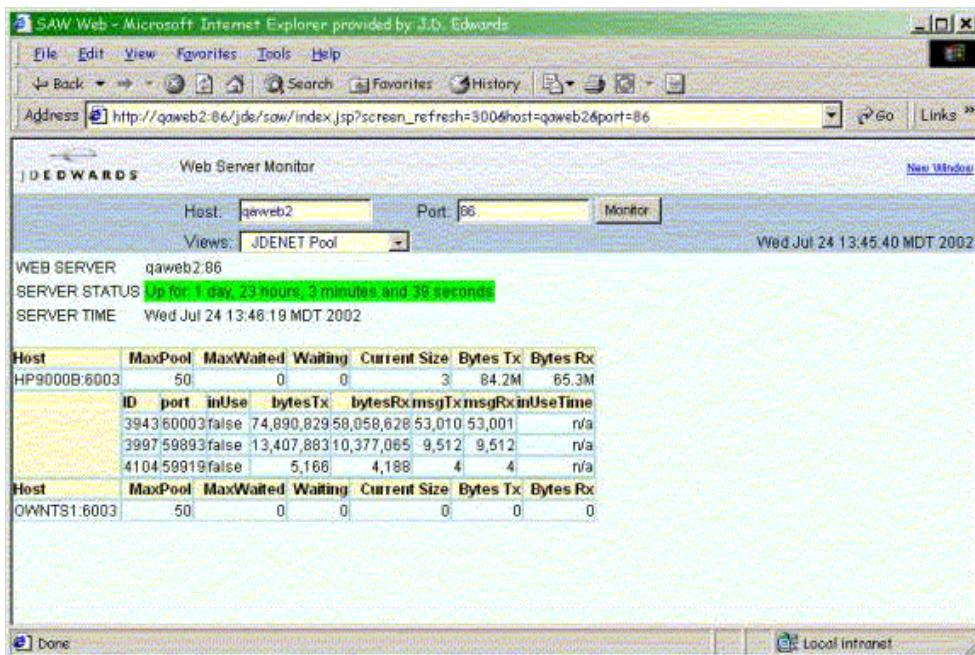
   The Web Server Monitor displays information on users connected to the web server.

3. Click on any table column heading to sort the column data.

Monitoring JDENET Connection Pools

The Web Server Monitor allows you to monitor socket connections made from the web server across the network to an enterprise server, where business functions run.

The JDENET Connection Pool Information view displays connection and messaging data for each enterprise server connected to the web server. The information is displayed in a table.

Note that connection data displayed in the JDENET Connection Pool Information view and the System Summary view correlate. For example, the Current Size parameter value in the System Summary view represents the current number of socket connections made between the web server and an enterprise server. The Connection Pool Information view also displays the Current Size parameter value.

The Connection Pool Information view also displays the maximum number of connections that can be made between the web server and the enterprise server, as well as the number of users waiting for a connection. Information on the volume of data and messages transmitted and received is contained in another set of parameters:

- Bytes Tx, the value of which represents the number of bytes transmitted from the connection socket

- Bytes Rx, the value of which represents the number of bytes received from the connection socket

- msgtx, which represents the number of JDENET messages transmitted from the connection socket

- msgrx, which represents the number of JDENET messages received from the connection socket

► **To monitor connection pools**

1. In the System Summary view of the Web Server Monitor, click the scroll button and choose JDENET Pool.

   The Web Server Monitor displays the JDENET Connection Pool Information view.

2. Click the Refresh button to get the latest connection information.

   The Web Server Monitor displays connection and messaging information for each enterprise server.

Monitoring Business Functions Running on Connected Enterprise Servers

The Web Server Monitor maintains an ongoing, cumulative list of information about each business function that runs on an enterprise server connected to the web server.

The CallObject Information view displays data on each business function that has run on a connected enterprise server during a web server session. The Web Server Monitor separates the business function data by enterprise server and presents the data in sortable lists.

Note that the Web Server Monitor does not perform a periodic flush of the list of business functions. Items in the list continue to accumulate until a server session ends. To make searching easier, you can sort the items in the list by clicking a heading. For example, you can display the list in descending order by amount of time required to run the business function, thereby displaying at the top of the list those that took the most time to run. These business functions might cause performance problems.

The Web Server Monitor displays in red the total number of business function errors for each enterprise server and the total number of errors for each business function.

A table displays business function data for each enterprise server. Each table displays general and cumulative information at the top:

- Server name

- Total number of business functions run on the server

- Total number of system errors

- Number of timeouts that occurred during the running of a business function

The table also displays cumulative data about each type of business function that has run during a server session. The following table summarizes the information displayed for each business function in the CallObject Information view:

Parameter in Table of CallObject Information View	Description
CallObject	Name of the business function.
Called	Total number of times the business function was called for processing on the enterprise server.
maxTime	The maximum time, in milliseconds, that a business function took to run when it was called.
minTime	The minimum time, in milliseconds, that a business function took to run when it was called.
avgTime	The average time, in milliseconds, required to run a business function.
sysErrors	The total number times a business function produced an error. If there is a value for this parameter, it appears in red.
Timeouts	The total number of times that a business function timed out before completion. If there is a value for this parameter, it appears in yellow.

The CallObject Information view also displays the number of business function processes in progress, if any. This number can be important for troubleshooting purposes. A large number of in-progress processes is an indication that the enterprise server is running slowly, and you can investigate the possible causes.

► **To monitor business functions running on connected enterprise servers**

1. In the System Summary view of the Web Server Monitor, click the scroll button and choose CallObject Info.

   The Web Server Monitor displays the CallObject Information view.

2. Click the Refresh button to get the latest connection information.

   The Web Server Monitor displays connection and messaging information for each enterprise server.

3. To find business function errors, choose an enterprise server and click the sysErrors column heading of the table.

   If the calls with errors are not grouped at the top of the table after you click the column heading, click the heading again.

4. Click any of the other column headings to sort the parameter values.

Monitoring Database Connection Pools

The Jdbc Connection Pool Information view allows you to monitor web server connections to the database and the drivers that facilitate the connections.

From the Jdbc Connection Pool Information view, you can view data on each available database connection, including:

- Last used, the value of which represents the number of seconds since a connection was last used

- First access, the value of which represents the number of seconds that have elapsed since a connection was first created.

The Jdbc Connection Pool Information view contains a Pool Cleaner button, which, when you click it, kicks off a thread that goes through all the connections in pools and immediately runs a statement to determine the healthiness of each one. If the Pool Cleaner program finds a connection that does not work, it replaces the connection automatically.

You can also view additional information about an individual database connection by clicking the name of a pool key. The pool keys represent the database connections that meet three criteria:

- Valid connection string, which is the URL for the database

- Valid database user ID

- Valid database password

The Jdbc Connection Information view displays connection information for the pool key you chose.

In addition to the connection string, database user ID, and database password, the Connection Information view displays:

- Product information, which includes the database and version and driver and version

- Connection properties, which lists the database-specific properties used to establish the database connection

- Supports, which are the attributes of the connection
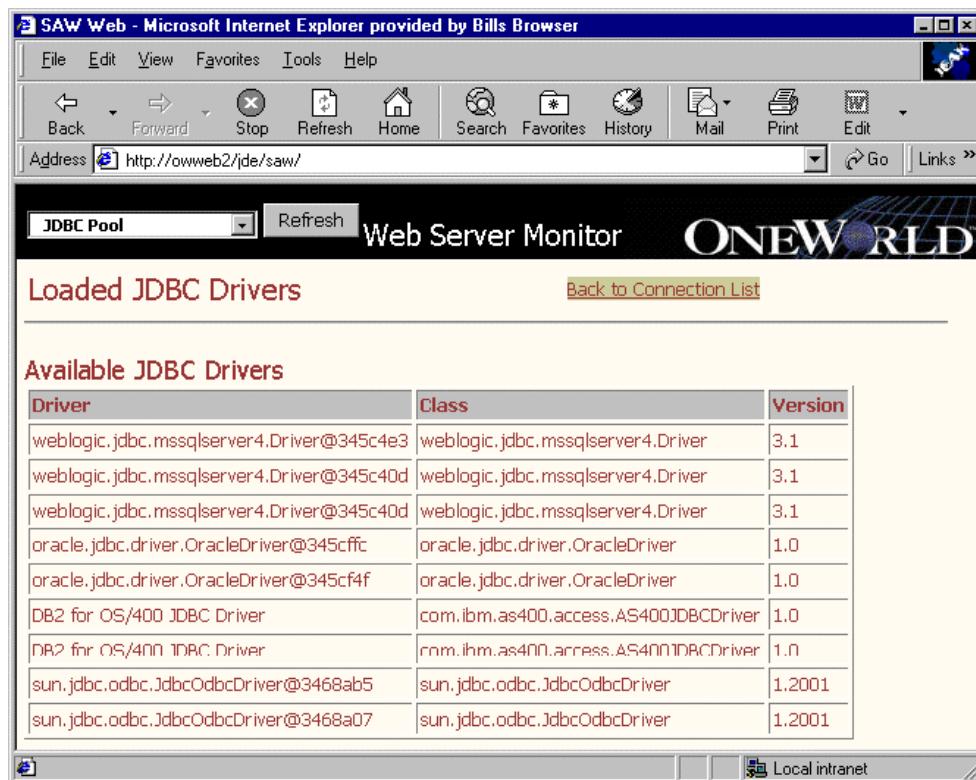
Note:

A message in the Connection Information view indicating that a connection could not be established means either that the connection criteria have not been met or that the data source is unavailable. You might use this information in debugging if you are having trouble running applications.

Finally, you can view the list of database drivers that are available to the web server by clicking the Loaded Drivers heading.
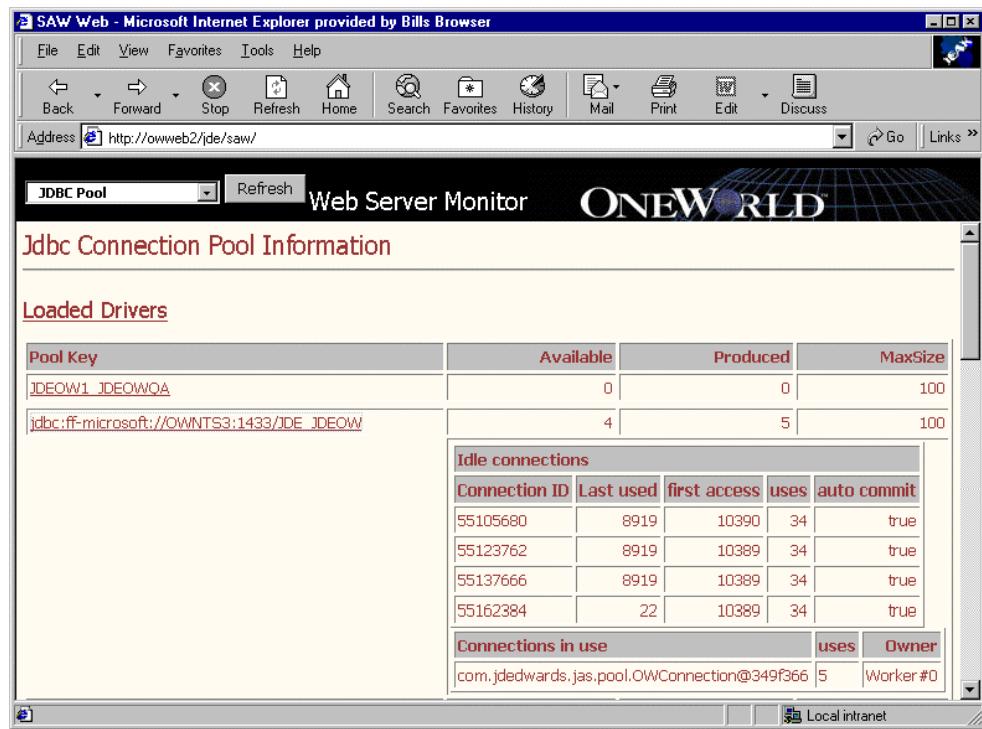
For more information on database connections see *Understanding Java Server jas.ini Settings* in the *ERP 8.0 System Administration* guide.

► **To monitor database connection information**

1. In the System Summary view of the Web Server Monitor, click the scroll button and choose JDBC Pool.

The Jdbc Connection Pool Information form appears.

2. Click the Refresh button to get the latest additions to the files.

3. To view information on an individual database connection, click the name of a connection string under the Pool Key column.

4. To view information on database drivers used to make connections, click Loaded Drivers.

5. If you are experiencing database problems, scroll to the bottom of the view and click the Pool Cleaner button.

Monitoring Web Server Log Files

You can monitor web server log files from the Web Server monitor. From the Log File view, you can view:

- A log file summary, which displays the size of all logs and the last time they were written

- The JAS.log file, which contains information on Java Application Server functions and records server errors

- The JASdebug.log file, which contains detailed information on the tasks running on the Java Application Server, including the SQL statements that were used

- The stdout file, which displays all of the outputs written by Java applications, including instantiation of servlets and business function processes running on the WebSphere Application Server

- The stderr file, which displays the error output from the main WebSphere servlet Java process

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You can also enable the Net Trace function, which offers a detailed view of the JDENET messages. You must enable JASdebug.log to enable Net Trace.
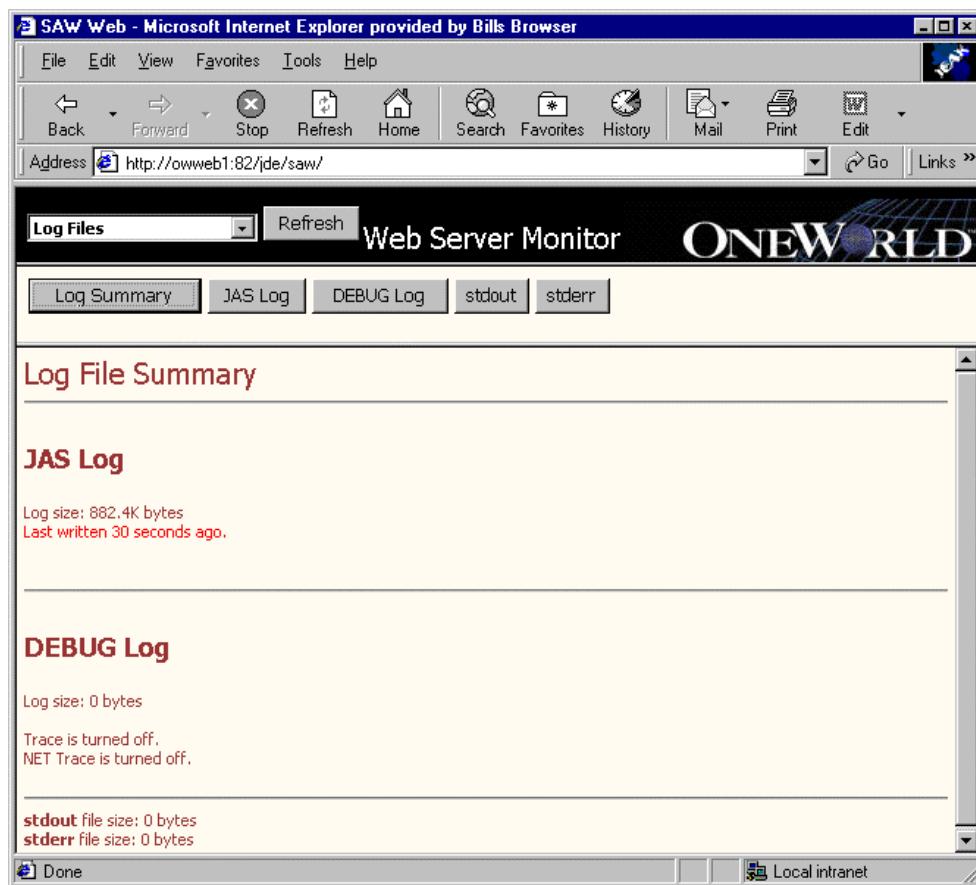
Caution:

Enabling both JASdebug.log and Net Trace produces very large files, which could degrade server performance. Do not configure the Web Server Monitor to write these files unless you are performing a specific debugging task.

The Log Files view contains buttons you use to access log files and log file summaries.

You configure the Web Server Monitor to determine the maximum size of the JAS.log and JASdebug.log files that can be retrieved.

You can also delete JAS.log and JASdebug.log files. However, if you do so, the files are deleted from the server, not from your workstation, and they cannot be retrieved. Do not delete the files unless you have administrative privileges.

► **To monitor web server log files**

1. In the System Summary view of the Web Server Monitor, click the scroll button and choose Log Files.

   The Web Server Monitor displays the log file summary.

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2. Click the Refresh button to get the latest additions to the files.

3. Click the JAS Log or Debug Log buttons to view the entire jas.log or jasdebug.log file.

4. To troubleshoot the log file, click inside the text file and perform a keyword search on "error."

► **To enable Debug.log and Net Trace**

1. On the web server, locate the sawLogButtons.jsp file, which is typically in the \b7\internet\dist\jdewww\saw\ directory.

2. Open the sawLogButtons.jsp file, locate the following parameters and change the values to "true," as follows:

   - boolean includeDeleteButtons = true

   - boolean includeTraceOnOffButtons = true

3. Click Save.

   These parameter changes will also enable the Delete JAS Log and Delete Debug Log buttons in the Log File view of the Web Server Monitor.

4. In the Log File view, choose the Debug Log option.

   The Debug Log and Net Trace options should both be visible, as should the Delete buttons for both JAS Log and Debug Log.

5. If you want to enable Net Trace, choose the Net Trace option.

   You can enable Net Trace only if you have enabled the Debug Log option.

6. Make sure the Delete JAS Log and Delete Debug Log files are visible in the Log File view.

7. Click the Refresh button to update the file.

► **To delete log files**

1. In the System Summary view of the Web Server Monitor, click the scroll button and choose Log Files.

2. Click the Refresh button to get the latest additions to the files.

3. To delete the JAS.log files, click the Delete JAS Log button.

4. To delete the JASdebug.log files, click the Delete Debug Log button.

Troubleshooting with the Web Server Monitor

The available Web Server Monitor views offer data that can be useful to administrators in spotting potential problems. The following table lists Web Server Monitor parameters that you can monitor for troubleshooting purposes:

Parameter	Web Server Monitor View(s)	Parameter Meaning	Possible Problem Indication
MaxWaited	System Summary/JDENET Pool	Number of users demanding socket connections exceeds the number defined in jas.ini if this parameter has a value.	Graphic user interface presentation might be too slow.

Log file size	System Summary	Warning message appears only if file size exceeds 1 mb.	Numerous error messages might be in the log
Agent ID	User List	User's browser.	Browser might be out of date.
In Progress	CallObject Information	Many business functions currently running on enterprise server if the parameter value for the "In Progress" message is anything other than "None."	Enterprise server is running slowly, possibly because of problems with business functions.
Connection could not be established	Connection Information (JDBC Pool)	Message appears only if the server has a problem connecting to the database.	Connection parameters might be wrong or the data source is unavailable.
java.class.path	Environment	Virtual machine path.	Troubleshoot path if processing problems occur.
java.fullversion	Environment	Version of virtual machine.	User might need virtual machine upgrade if processing problems are occurring.

Locations of Key Parameter Values for Web Server Monitor Settings

The parameter values displayed by the Web Server Monitor are defined in various locations in the ERP 8.0 system.

The following table displays selected Web Server Monitor parameters, the Web Server Monitor view in which each is displayed, and the ERP 8.0 location where each Web Server monitor parameter is typically defined.

Web Server Monitor View	Parameter	ERP 8.0 Property	ERP 8.0 File Where Property Is Defined
System Summary	Heap Memory Allocated by VM (Java Virtual Machine)	java.mx	C:\WebSphere\AppServer\properties
Configuration	CallObject Timeout	[JDENET] enterpriseServerTimeout=	jas.ini file
Configuration	Maximum Host Pool	[JDENET] maxPoolSize=	jas.ini file
System Summary	Host		Object Configuration Manager table (F986110)
System Summary	Port (displayed together with Host parameter)	[SERVER] serviceNameConnect	jas.ini file

| User List | Max users allowed | [OWWEB]

MAXUser= | jas.ini file |

| User List | Session Timeout | [CACHE]

UserSession= | jas.ini file |

| Jdbc Connection Information | Jdbc URL | [JDBC URL]

constructed as follows:

<environment>=<jdbc url\|type\|owner\|user\|password> | jas.ini file |

Monitoring OneWorld XPIe Servers from the Web

The OneWorld XPIe Server Monitor allows you to use the web to monitor an XPIe Broker Server. The server-monitoring APIs for ActiveWorks are available in Java code, and ERP 8.0 uses them to provide the OneWorld XPIe Server Monitor.

To monitor a OneWorld XPIe server, you must enter a valid host name and port number in the OneWorld XPIe Server Monitor workspace. From the combo box in the workspace, you can choose from five views:

- ❑ Broker Summary
- ❑ Event Types
- ❑ Client Groups
- ❑ Client States
- ❑ Broker Logs

For detailed information on using ActiveWorks' server administration tools, consult the *ActiveWorks Administration and Analysis Tools* guide.

Broker Summary View

The Broker Summary view allows you to monitor information about one or more brokers running on the Broker Server. The broker provides essential system services, such as receiving, sending, and queuing events. Events are messages sent to and received by resources in the system, including client workstations and other servers.

To view broker summary information, enter a host name and port number in the XPIe Server Monitor workspace, then choose Broker Summary from the comb box and click the Monitor button.

The Broker Summary view appears.

The Broker Summary view contains a table with various parameters, the values of which provide information about one or more brokers running on the server. The following table identifies the parameters and offers a brief explanation of each one:

Parameter in Table of Broker Summary View	Parameter Meaning
Number	The number of the broker.
Broker Name	The name of the broker. The default name is Broker # 1.

Broker Host	The Broker Server on which the broker is running.
Territory	A set of brokers that share information about event types and client groups.
Description	A full description of the broker, provided when the broker is installed on the server.
Event Types	Types of messages received and sent by the broker.
Client States	Information about a client maintained by the broker. Clients connect to brokers.
Client Groups	A list of all client groups on the broker. A client group is a set of properties shared by broker clients.

The Event Types, Client States, and Client Groups parameter columns contain magnifying glass icons you can click to view more detailed information on each one. Each of these parameters has its own view, which you can also access from the comb box in the Broker Summary view or in the XPIe Server Monitor workspace. For more information on these parameters, see the topics *Event Types View*, *Client States View*, and *Client Groups* view in this chapter.

The Broker Summary view also displays:

- Number of non-SSL (Secure Sockets Layer) connections

- Highest number of non-SSL connections

- Number of SSL connections

- Highest number of SSL connections

- Server disk space, in megabytes

You can view details about the server n which the broker is running by clicking the Server Statistics URL.

Event Types View

An event type defines the properties of an event, including the data fields that the event carries, the event's unique name, and a storage type, which defines how the broker stores the event.

The word "events," when it is used in discussing the XPIe Server Monitor, roughly corresponds to the word "messages," as that word is used in discussing the Enterprise Server Monitor. Events are messages exchanged by resources in the system. For example, an event might be processing a purchase order. To process a purchase order, the client and broker communicate.

When you choose Event Types in the combo box of the XPIe Server Monitor workspace and click the Monitor button, the Event Types view appears.

The Event Types view contains a table with various parameters, the values of which provide information about the event types handled by the broker. The following table identifies the parameters and offers a brief explanation of each one:

Parameter in Table of Event Types View	Parameter Meaning
Event Name	The unique name of the event.
Description	A description of the function of each event.
Storage Type	An event attribute that determines how the event is stored in the broker. Storage types are: • Guaranteed, which means that events are stored on disk using a logged commit. • Persistent, which means that events are stored on disk using operating

	asynchronous input/output.
	• Volatile, which means that events are stored in memory.
Time to Live	The amount of time that an event type can exist in the broker.
Fields	The names and types of each data field within the event type.

You can view information on the data fields for each event type by clicking on the magnifying glass icon in the Fields column.

The Event Types Fields view appears.

The Event Types Fields view identifies each field name for the event type, as well as the field type, such as string.

Client Groups View

A client group is a set of broker clients with particular properties. For example, a client group defines the server on which clients access the broker.

When you choose Client Groups in the combo box of the XPIe Server Monitor workspace and click the Monitor button, the Client Groups view appears.

The Client Groups view contains a table with various parameters, the values of which provide information about the client groups that provide control of client access to the broker. The following table identifies the parameters and offers a brief explanation of each one:

Parameter in the Client Groups View	Meaning
Client Group Name	The name of the client group. Each group has a specific set of properties defined using the ActiveWorks Manager.
ACL	Access Control List, which is a list of SSL certificates that define the entities with permission to access the broker or create a client within a client group.
Can Publish	The event types that a client group can publish.
Can Subscribe	The event types that a client group can subscribe to.
Statistics	Additional statistics on the client group, such as how long the group has been on the server and how many events have been published by clients that belong to the group.

Click the magnifying glass icon in the ACL, Can Publish, Can Subscribe, and Statistics columns to view additional information about each of these parameters. For more information about publishing and subscribing to events, consult the *ActiveWorks Administration and Analysis Tools* documentation.

Client States View

A client state is information maintained by the broker about a client connected to the server. For example, the client group to which a client belongs is a client state.

When you choose Client States in the combo box of the XPIe Server Monitor workspace and click the Monitor button, the Client States view appears.

The Client States view contains a table with various parameters, the values of which provide information about the clients connected to the server. The following table identifies the parameters and offers a brief explanation of each one:

Parameter in the Client States View	Meaning
Identifier	A unique identifier for the client connected to the server.
Client Group	The client group to which the client belongs.
App. Name	The name of the application that describes the client's connection to the server.
Access Label	Indicates, if appropriate, the value of the access label required for a client to connect to the client group to which it belongs.
Authenticator	The name of the certification authority that issued the certificate if SSL is enabled for the client.
Can Share	Indicates whether state sharing is enabled. If state sharing is enabled, the number of sessions allowed for a client can be set.
High Seq.	The highest published sequence number used by the client.
Max Shared Connections	The maximum number of server connections that the client can share.
Owner Name	The client's owner's user name.
Sessions	Information about a client session. Click the magnifying glass icon in the Sessions column to view detailed session information.

Broker Log View

You can use the XPIe Server Monitor to view a broker log containing information about events that have run on the server during a specified time. You can view all log messages, or you can limit your view to warnings, alerts, or information messages.

When you choose Broker Log in the combo box of the XPIe Server Monitor workspace and click the Monitor button, the Broker Log view appears.

You can use the combo boxes in the Broker Log to specify:

- The starting date from which you want to view log files

- The maximum number of entries you want to view

- The type of file you want to view

Click the View Log button to see the log file entries.

Monitoring ERP 8.0 with SAW on the AS/400

The Server Administration Workbench (SAW) for the AS/400 uses the menu structure that is standard to the AS/400 interface. Through this interface, SAW provides access to the following information:

Application	Description
Work with Servers	This option allows you to view ERP 8.0 services running on different ports on the same server or on other servers.
Work with Server Processes	This option provides the ability to start, stop, and view ERP 8.0 services for the local port and host only. Otherwise, this option allows viewing only of ERP 8.0 services. You can view information for other servers that run on the same port as the host server, but you can only start and stop services that run on the host server.
Work with	This option allows you to view information about general ERP 8.0 resources on a server.

Server Resources	such as locks and resource users, and disk space resources, such as CPU utilization and disk availability.
Work with Server Log Files	This option provides a list of all log files for ERP 8.0 network, kernel, and batch processes. From this menu, you can view and delete the log files.
Work with Server INI File	This option starts the Source Entry Utility (SEU) to allow you to view and change settings in the local jde.ini file on the local port and host only. Otherwise, this option is not displayed. You cannot access jde.ini files on remote servers.

Note:

The name of the current server and the port for the host server appear at the top of every form in SAW.

Accessing SAW

You can access the Server Administration Workbench (SAW) from the command line.

Before You Begin
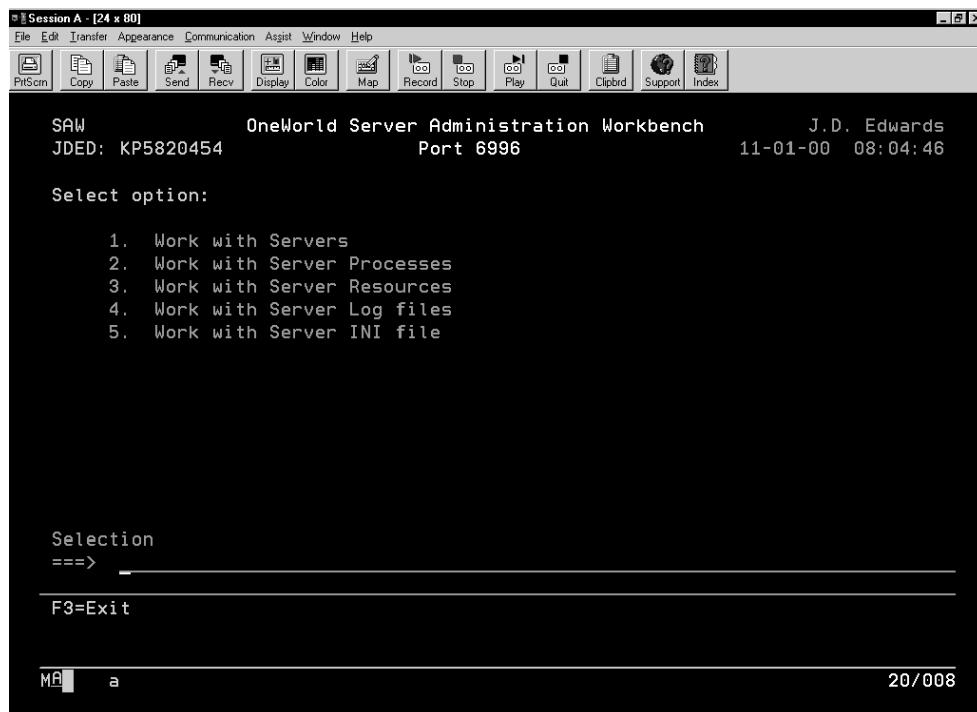
❑ SAW must reside in your ERP 8.0 system library in the library list before you can access SAW from the command line.

► **To access SAW**

On the command line, enter SAW.

The SAW main menu appears.
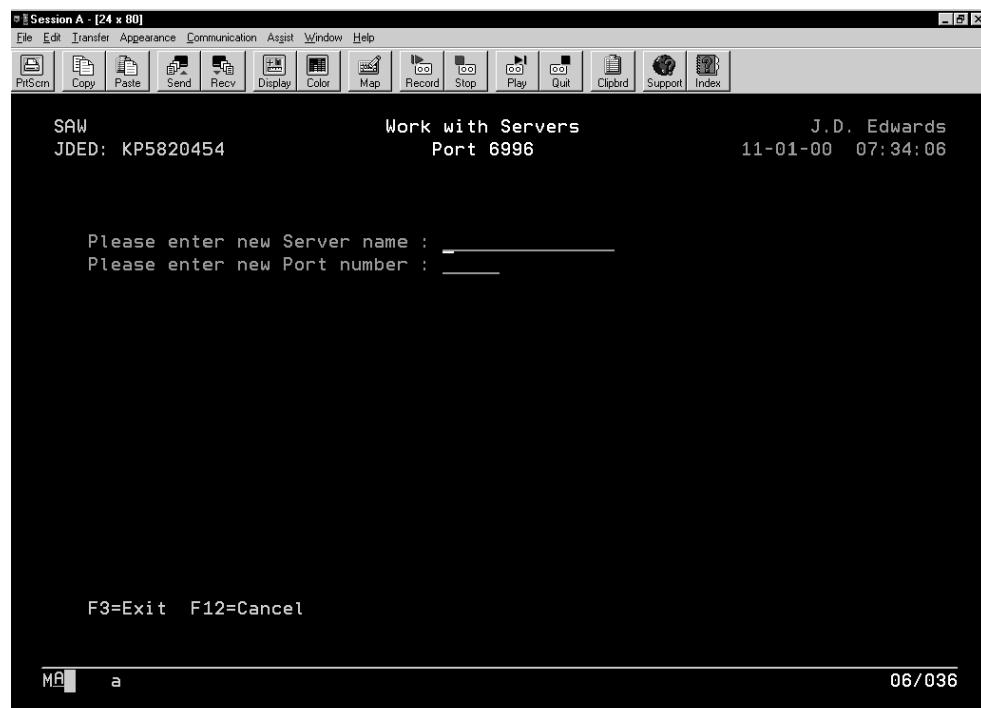
Monitoring Remote ERP 8.0 Servers

The Work with Servers application allows you to change the server and port that you monitor using SAW. ERP 8.0 services do not need to be up on the local port and host to run SAW.

► **To monitor remote ERP 8.0 servers**

1. From the SAW main menu, choose Work with Servers.

The Work with Servers form appears.

2. Enter a new server name in the field.

When a valid server name and port are entered, the ERP 8.0 Server Administration Workbench screen displays the new server name and port shown.

Starting, Stopping, and Displaying ERP 8.0 Server Processes

The Work with Server Processes form allows you to start or stop the local ERP 8.0 server and to display the ERP 8.0 processes currently running for any server on the network. You can only start or stop services for the local server on the local port where SAW was invoked. To start or stop services on remote servers, you must work with the server directly.

Note:

The menu options for starting and stopping ERP 8.0 server processes do not appear when you switch the host or port using the Work with Servers option.
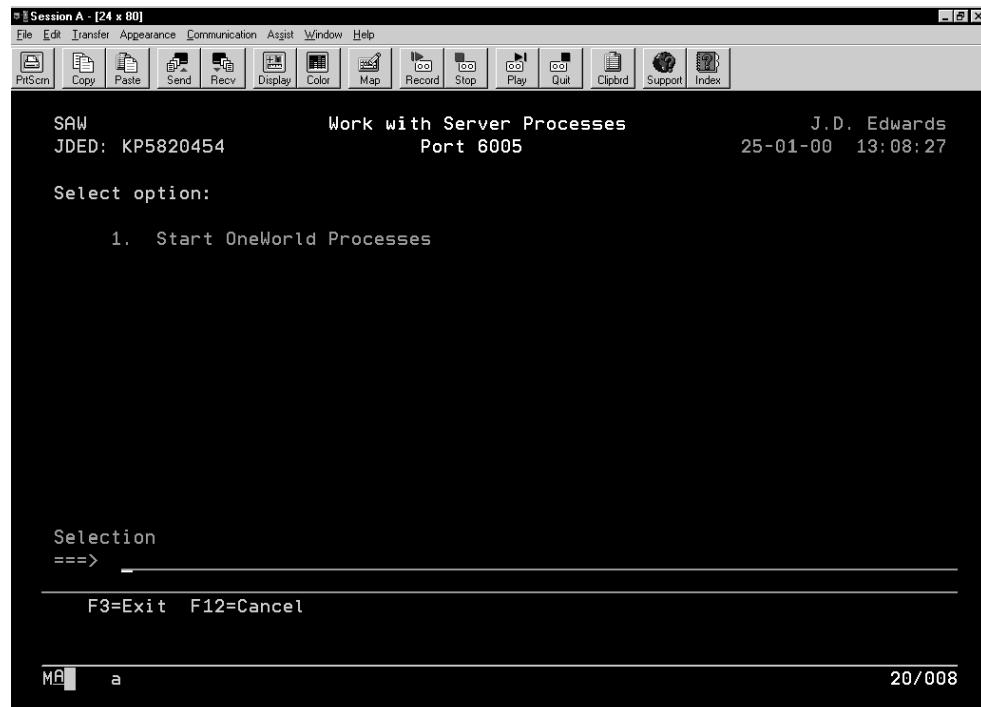
► **To start ERP 8.0 processes on a server**

1. From the SAW main menu, choose Work with Server Processes.

The Work with Server Processes form appears.

2. Choose Start ERP 8.0 Processes.
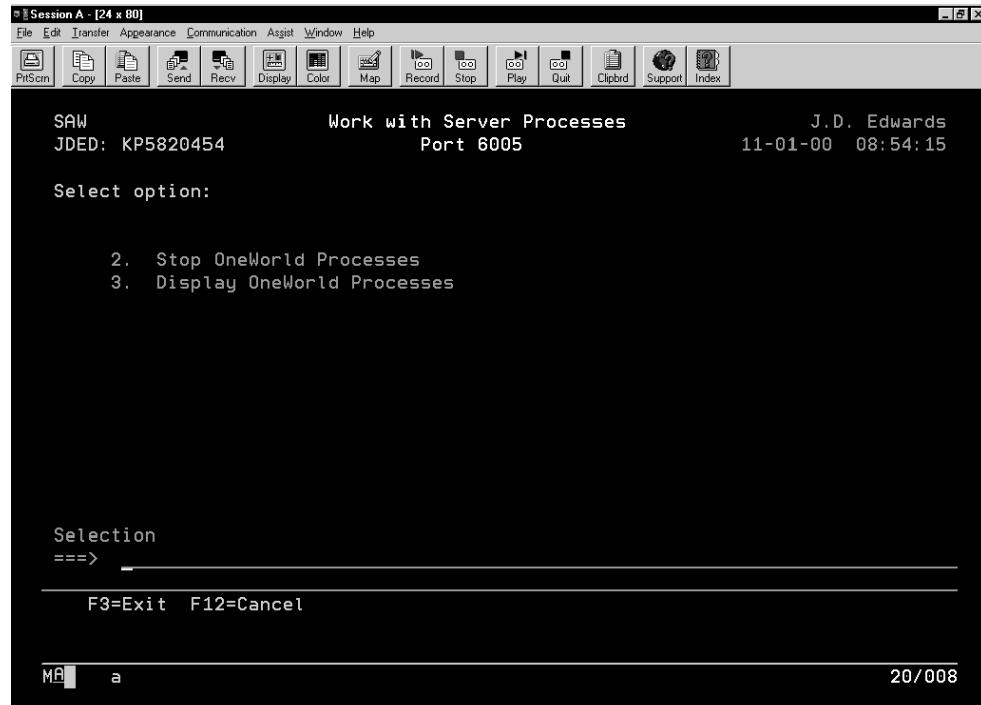
   If ERP 8.0 processes have already been started, this option will not appear on the form.

► **To stop ERP 8.0 processes on a server**

1. From the SAW main menu, choose Work with Server Processes.

The Work with Server Processes form appears.

2. Choose Stop ERP 8.0 Processes.

Caution:

Use caution when you stop ERP 8.0 processes on a server to avoid interrupting important server processes.

If ERP 8.0 processes are not active or if the host or port were not the default when starting SAW, this option will not appear on the form.
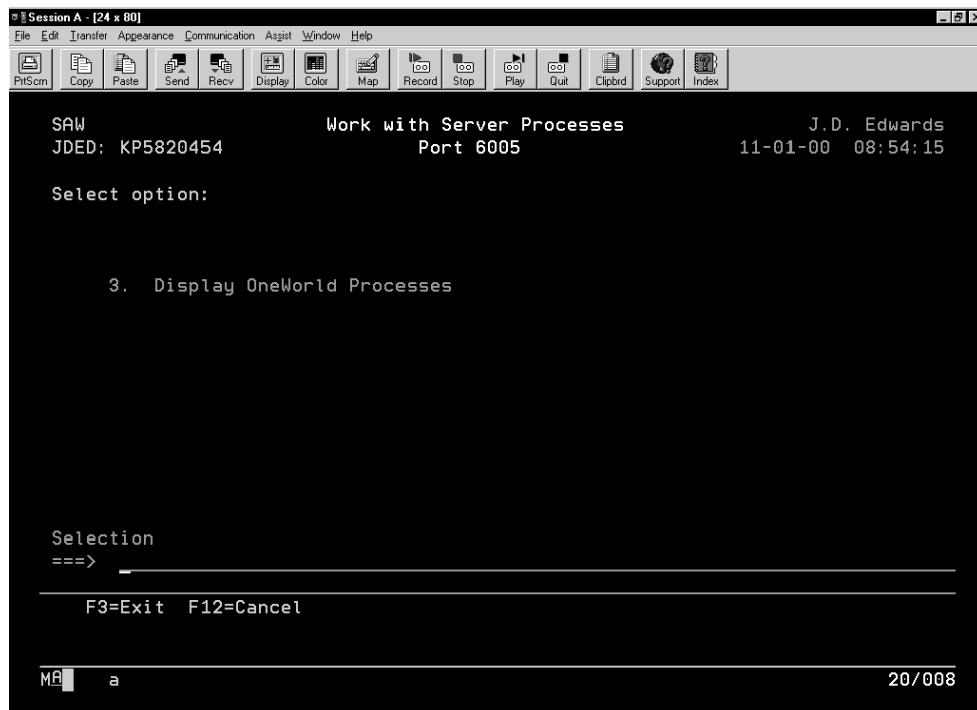
► **To display ERP 8.0 server processes**

    1.   From the SAW main menu, choose Work with Server Processes.

The Work with Server Processes form appears.

```
Session A - [24 x 80]
File  Edit  Transfer  Appearance  Communication  Assist  Window  Help

PrtScrn  Copy  Paste  Send  Recv  Display  Color  Map  Record  Stop  Play  Quit  Clipbrd  Support  Index

  SAW                          Work with Server Processes              J.D. Edwards
  JDED: KP5820454                       Port 6005                  11-01-00  08:54:15

  Select option:


        3.   Display OneWorld Processes




  Selection
  ===>  _


      F3=Exit   F12=Cancel


  MA      a                                                             20/008
```
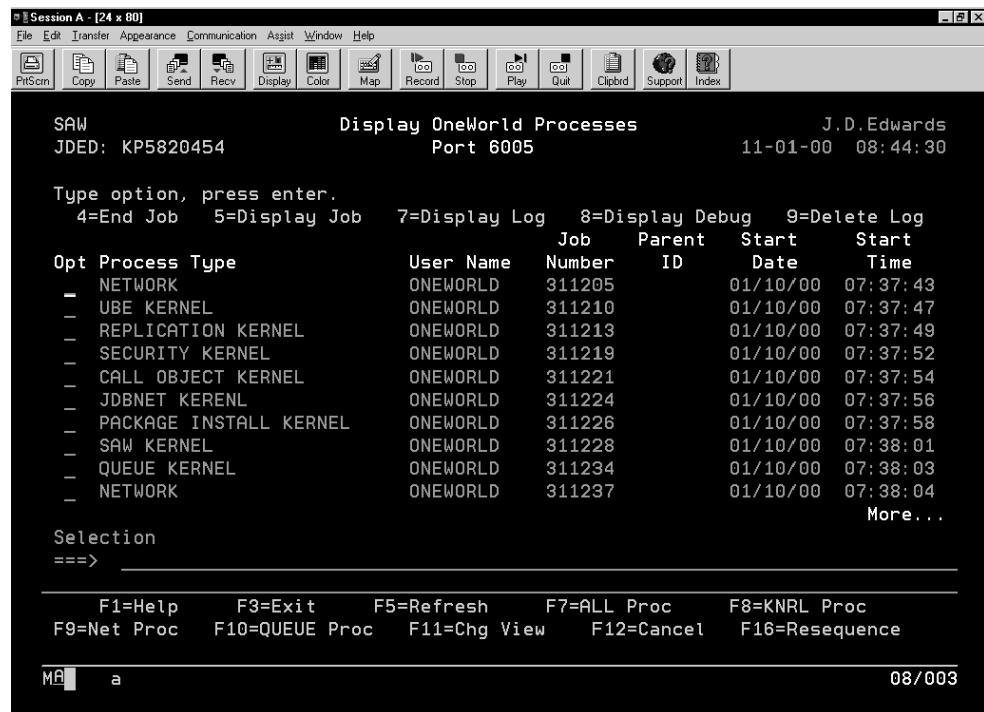
    2.   Choose Display ERP 8.0 Processes.

       The Display ERP 8.0 Processes form appears. On this form you can view information about kernel processes, network processes, and queue processes. You can also display and delete logs for the ERP 8.0 processes. When you display ERP 8.0 processes for the host server, you can end the processes and display detail information about the processes.

       You can filter, sort, and view different information on this form by using key commands and function keys. Press F1 to see a list of these options.

```
 Session A - [24 x 80]
File  Edit  Transfer  Appearance  Communication  Assist  Window  Help

 PrtScn  Copy  Paste  Send  Recv  Display  Color  Map  Record  Stop  Play  Quit  Clipbrd  Support  Index

    SAW                        Display OneWorld Processes              J.D.Edwards
    JDED: KP5820454                   Port 6005             11-01-00  08:44:30


    Type option, press enter.
      4=End Job     5=Display Job    7=Display Log    8=Display Debug    9=Delete Log
                                              Job      Parent   Start      Start
    Opt Process Type                User Name Number    ID      Date       Time
      _   NETWORK                    ONEWORLD  311205           01/10/00  07:37:43
      _   UBE KERNEL                 ONEWORLD  311210           01/10/00  07:37:47
      _   REPLICATION KERNEL         ONEWORLD  311213           01/10/00  07:37:49
      _   SECURITY KERNEL            ONEWORLD  311219           01/10/00  07:37:52
      _   CALL OBJECT KERNEL         ONEWORLD  311221           01/10/00  07:37:54
      _   JDBNET KERENL              ONEWORLD  311224           01/10/00  07:37:56
      _   PACKAGE INSTALL KERNEL     ONEWORLD  311226           01/10/00  07:37:58
      _   SAW KERNEL                 ONEWORLD  311228           01/10/00  07:38:01
      _   QUEUE KERNEL               ONEWORLD  311234           01/10/00  07:38:03
      _   NETWORK                    ONEWORLD  311237           01/10/00  07:38:04
                                                                       More...
    Selection
    ===>    _____

    _____
        F1=Help      F3=Exit     F5=Refresh     F7=ALL Proc     F8=KNRL Proc
     F9=Net Proc   F10=QUEUE Proc   F11=Chg View    F12=Cancel   F16=Resequence

    MA      a                                                        08/003
```

3. If you are viewing processes for the host server, enter 5 in the Opt field in front of a process to view detail information about the process.

► **To display and delete log files for ERP 8.0 server processes**

1. From the SAW main menu, choose Work with Server Processes.

The Work with Server Processes form appears.

2. Choose Display ERP 8.0 Processes.

The Display ERP 8.0 Processes form appears.

```
┌─ Session A - [24 x 80] ─────────────────────────────────────────── _ □ X ┐
│ File  Edit  Transfer  Appearance  Communication  Assist  Window  Help      │
│ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ │
│ │  │ │  │ │  │ │  │ │  │ │  │ │  │ │  │ │  │ │  │ │  │ │  │ │  │ │  │ │  │ │
│ PrtScrn Copy Paste Send Recv Display Color Map Record Stop Play Quit Clipbrd Support Index │
│                                                                              │
│  SAW                    Display OneWorld Processes          J.D.Edwards     │
│  JDED: KP5820454               Port 6005            11-01-00  08:44:30      │
│                                                                              │
│   Type option, press enter.                                                  │
│     4=End Job    5=Display Job   7=Display Log   8=Display Debug  9=Delete Log│
│                                          Job    Parent  Start    Start       │
│   Opt Process Type             User Name Number   ID    Date     Time        │
│    _   NETWORK                  ONEWORLD  311205       01/10/00  07:37:43     │
│    _   UBE KERNEL               ONEWORLD  311210       01/10/00  07:37:47     │
│    _   REPLICATION KERNEL       ONEWORLD  311213       01/10/00  07:37:49     │
│    _   SECURITY KERNEL          ONEWORLD  311219       01/10/00  07:37:52     │
│    _   CALL OBJECT KERNEL       ONEWORLD  311221       01/10/00  07:37:54     │
│    _   JDBNET KERENL            ONEWORLD  311224       01/10/00  07:37:56     │
│    _   PACKAGE INSTALL KERNEL   ONEWORLD  311226       01/10/00  07:37:58     │
│    _   SAW KERNEL               ONEWORLD  311228       01/10/00  07:38:01     │
│    _   QUEUE KERNEL             ONEWORLD  311234       01/10/00  07:38:03     │
│    _   NETWORK                  ONEWORLD  311237       01/10/00  07:38:04     │
│                                                              More...          │
│   Selection                                                                  │
│   ===>  _____          │
│   _____           │
│      F1=Help     F3=Exit    F5=Refresh    F7=ALL Proc    F8=KNRL Proc         │
│   F9=Net Proc   F10=QUEUE Proc   F11=Chg View   F12=Cancel   F16=Resequence   │
│ ──────────────────────────────────────────────────────────────────────────  │
│ MA     a                                                         08/003       │
└──────────────────────────────────────────────────────────────────────────────┘
```

3. In the Opt field in front of a process, enter one of the following values:

   - Enter 7 to view the log file

   - Enter 8 to view the debug log file

   - Enter 9 to delete all log files for the process

   Note:

   If you view log files for a remote server, you see only the data available at the time when you open the log. As a process continues, the system might add data to the log after you open the file. Reopen the log file at a later time to determine whether the system added new data.
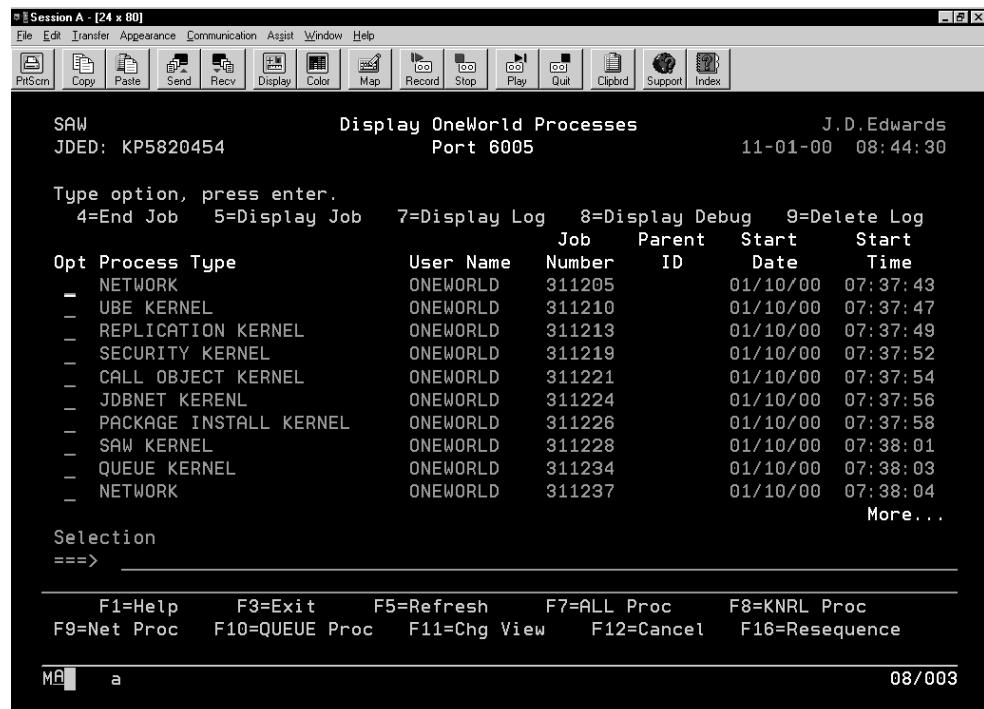
► **To end individual ERP 8.0 server processes**

   Note:

   You can only end ERP 8.0 processes for the host server. You cannot end processes for remote servers.

1. From the SAW main menu, choose Work with Server Processes.

   The Work with Server Processes form appears.

2. Choose Display ERP 8.0 Processes.

The Display ERP 8.0 Processes form appears.

```
Session A - [24 x 80]
File  Edit  Transfer  Appearance  Communication  Assist  Window  Help

[PrtScrn] [Copy] [Paste] [Send] [Recv] [Display] [Color] [Map] [Record] [Stop] [Play] [Quit] [Clipbrd] [Support] [Index]

   SAW                         Display OneWorld Processes              J.D.Edwards
   JDED: KP5820454                    Port 6005                 11-01-00  08:44:30

   Type option, press enter.
     4=End Job    5=Display Job    7=Display Log    8=Display Debug   9=Delete Log
                                                 Job    Parent   Start    Start
   Opt Process Type                User Name   Number     ID      Date     Time
     _   NETWORK                    ONEWORLD    311205           01/10/00  07:37:43
     _   UBE KERNEL                 ONEWORLD    311210           01/10/00  07:37:47
     _   REPLICATION KERNEL         ONEWORLD    311213           01/10/00  07:37:49
     _   SECURITY KERNEL            ONEWORLD    311219           01/10/00  07:37:52
     _   CALL OBJECT KERNEL         ONEWORLD    311221           01/10/00  07:37:54
     _   JDBNET KERENL              ONEWORLD    311224           01/10/00  07:37:56
     _   PACKAGE INSTALL KERNEL     ONEWORLD    311226           01/10/00  07:37:58
     _   SAW KERNEL                 ONEWORLD    311228           01/10/00  07:38:01
     _   QUEUE KERNEL               ONEWORLD    311234           01/10/00  07:38:03
     _   NETWORK                    ONEWORLD    311237           01/10/00  07:38:04
                                                                          More...
   Selection
   ===>  _____

   _____
        F1=Help      F3=Exit     F5=Refresh     F7=ALL Proc     F8=KNRL Proc
     F9=Net Proc   F10=QUEUE Proc   F11=Chg View    F12=Cancel   F16=Resequence

   MA    a                                                           08/003
```

3. Enter 4 in the Opt field in front of the process that you want to stop.

    SAW stops the process and then refreshes the form.

Displaying Server IPC and Disk Space Resources

The Work with Server Resources form provides information about current IPC resources and disk space information on the server. The IPC resources available for viewing are:

Resource	Description
Message queues (MSG)	A message queue allows one process to pass packets to another process.
Single Write Multiple Read (SWMR)	SWMR is a lock that allows only one writer to change data, but multiple readers can access the data. The system grants reader locks if no outstanding writer locks exist. The system grants writer locks if no outstanding reader locks exist.
Shared memory (SHM)	Shared memory is a segment of memory that appears in the address space of more than one process. For example, network processes might use a shared memory segment to monitor what processes exist and the status of those processes.
Mutual exclusion (MTX)	A mutual exclusion lock, or a mutex lock, allows only one process to hold the lock. This is the most common type of lock.
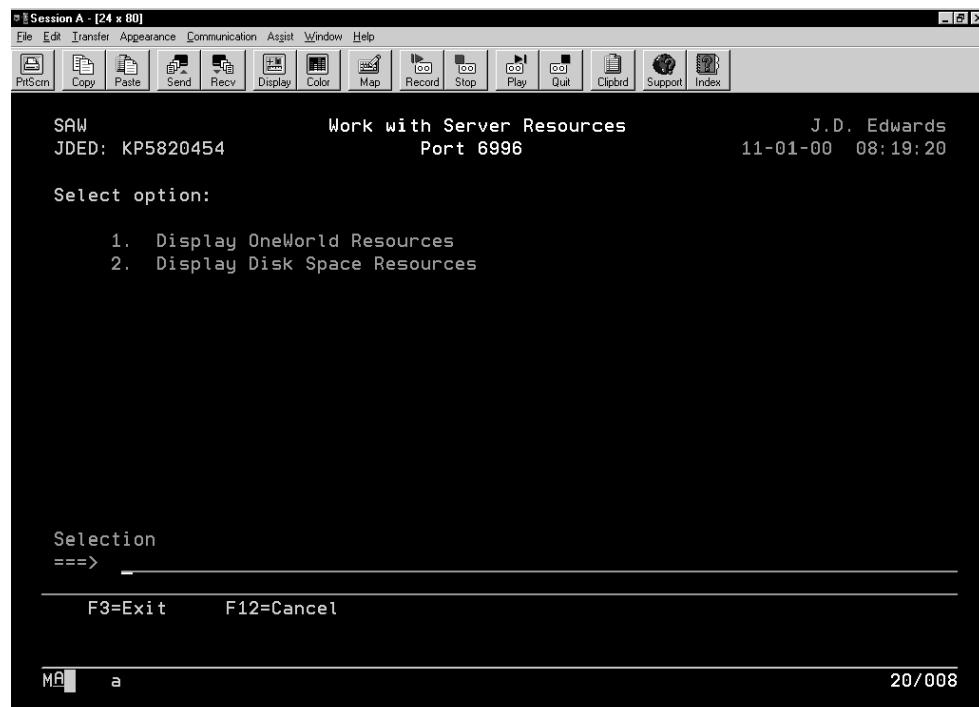
If ERP 8.0 is down on the local port and local host, and you try to display local IPC resources, you will come out of SAW.

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► **To display ERP 8.0 IPC resources**

1. From the SAW main menu, choose Work with Server Resources.

The Work with Server Resources form appears.

2. Choose Display ERP 8.0 Resources.

The Display ERP 8.0 Resources form appears.

```
Session A - [24 x 80]
File  Edit  Transfer  Appearance  Communication  Assist  Window  Help

 PrtScn  Copy  Paste  Send  Recv  Display  Color  Map  Record  Stop  Play  Quit  Clipbrd  Support  Index

  SAW                        Display OneWorld Resources              J.D. Edwards
  JDED: KP5820454                   Port 6996                11-01-00  08:20:14

   Resource Name           IPC ID        Key      IPC Type     User ID

   DDDICT                   -1           -1         SWMR        ONEWORLD
   PKGaccessLock            -1           -1         MTX         ONEWORLD
   GLBLTBLCR                -1           -1         MTX         ONEWORLD
   JdeProcShm               51           45002      SHM         ONEWORLD
   PKGSWMRLock              -1           -1         SWMR        ONEWORLD
   BSFNUPD                  -1           -1         MTX         ONEWORLD
   PackageLock              -1           -1         MTX         ONEWORLD
   DDTEXTCR                 -1           -1         MTX         ONEWORLD
   DDDICTCR                 -1           -1         MTX         ONEWORLD
   Krnl7664ReqQ             178          45010      MSG         ONEWORLD
   Krnl7617ReqQ             151          45005      MSG         ONEWORLD
   Krnl7655ReqQ             176          45008      MSG         ONEWORLD
                                                                  More...
   Selection
   ===>  _____

   _____
     F1=Help      F3=Exit      F5=Refresh      F12=Cancel      F16=Resequence
     F6=Type ALL     F7=Type MSG     F8=Type SWMR     F9=Type SHM     F10=Type MTX

  MA    a                                                          20/008
```

You can filter and sort information on this form by using key commands and function keys. Press F1 to see a list of these options.

► **To display disk space resources**

1. From the SAW main menu, choose Work with Server Resources.

   The Work with Server Resources form appears.

2. Choose Display Disk Space Resources.

   If you display disk space resources for the host server, disk space resource information appears in the Display System Status (DSPSYSSTS) utility.

The following form provides an example of Display System Status:

```
Session A - [24 x 80]
File  Edit  Transfer  Appearance  Communication  Assist  Window  Help

                     Display System Status                     JDED
                                               11.01.00  07:35:24
 % CPU used . . . . . . . . :         0,1   Auxiliary storage:
 Elapsed time . . . . . . . :    00:00:01     System ASP . . . . . . . :     781,6 G
 Jobs in system . . . . . :        4549     % system ASP used  . . :     62,2864
 % addresses used:                            Total  . . . . . . . . . :     781,6 G
   Permanent  . . . . . . :       0,015     Current unprotect used :     18531 M
   Temporary  . . . . . . :       0,094     Maximum unprotect  . . :     19291 M


 System    Pool     Reserved     Max    -----DB-----   ---Non-DB---
  Pool    Size (K)   Size (K)   Active  Fault   Pages   Fault   Pages
    1     882392     563000     +++++    0,0     0,0     1,6     1,6
    2     524288          0       208    0,0     0,0     0,0     0,0
    3     104856          0        70    0,0     0,0     2,5     2,5
    4     104856          0        11    0,0     0,0     0,0     0,0
    5    8659656          0       242    0,0     0,0    13,4    37,7
    6     104856          0        28    0,0     0,0     0,0     0,0
    7     104856          0        70    0,0     0,0     0,0     0,0
                                                                     Bottom
 Press Enter to continue.


 F3=Exit    F5=Refresh    F10=Restart    F11=Display transition data    F12=Cancel
 F21=Select assistance level

 MA      a                                                          01/001
```
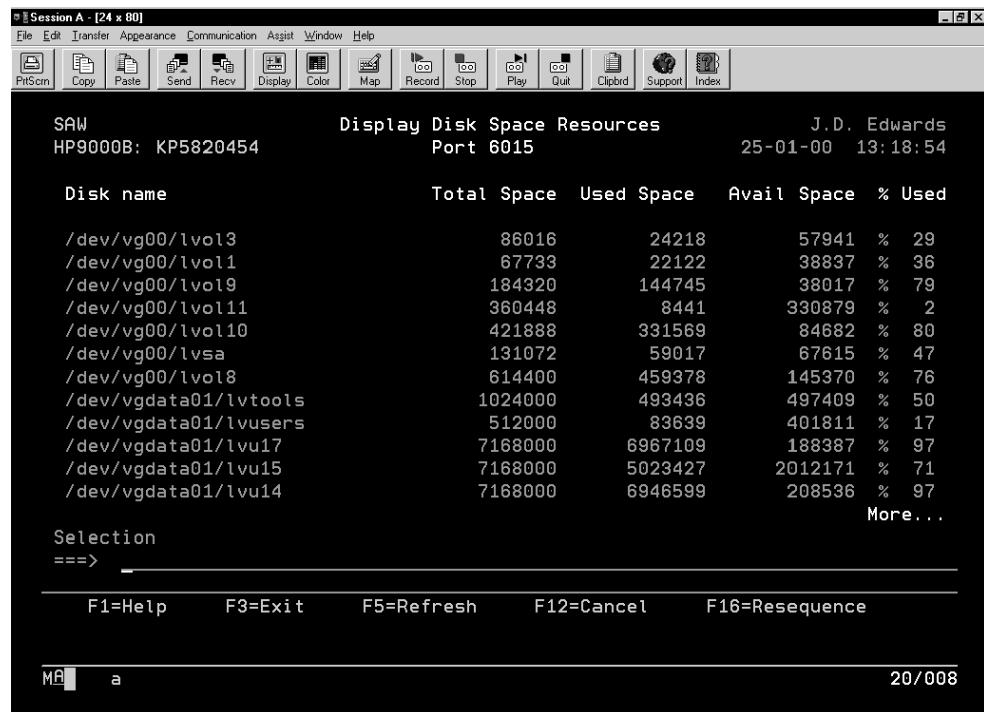
If you display disk space resources for a remote server on the network, the Display
Disk Space Resources form appears to display the disk space resource information.
You can sort information on this form by using key commands and function keys.
Press F1 to see a list of these options.

The following form is an example of Display Disk Space Resources:

```
Session A - [24 x 80]
File  Edit  Transfer  Appearance  Communication  Assist  Window  Help

[PrtScrn] [Copy] [Paste] [Send] [Recv] [Display] [Color] [Map] [Record] [Stop] [Play] [Quit] [Clipbrd] [Support] [Index]

 SAW                         Display Disk Space Resources              J.D. Edwards
 HP9000B: KP5820454                    Port 6015                 25-01-00  13:18:54

  Disk name                        Total Space   Used Space   Avail Space   % Used

  /dev/vg00/lvol3                        86016        24218         57941   %   29
  /dev/vg00/lvol1                        67733        22122         38837   %   36
  /dev/vg00/lvol9                       184320       144745         38017   %   79
  /dev/vg00/lvol11                      360448         8441        330879   %    2
  /dev/vg00/lvol10                      421888       331569         84682   %   80
  /dev/vg00/lvsa                        131072        59017         67615   %   47
  /dev/vg00/lvol8                       614400       459378        145370   %   76
  /dev/vgdata01/lvtools                1024000       493436        497409   %   50
  /dev/vgdata01/lvusers                 512000        83639        401811   %   17
  /dev/vgdata01/lvu17                  7168000      6967109        188387   %   97
  /dev/vgdata01/lvu15                  7168000      5023427       2012171   %   71
  /dev/vgdata01/lvu14                  7168000      6946599        208536   %   97
                                                                         More...

 Selection
 ===>  _

 _____
    F1=Help      F3=Exit      F5=Refresh      F12=Cancel      F16=Resequence
 _____

 MA    a                                                              20/008
```

Displaying, Printing, and Deleting Server Log Files

You can use the Work with Server Log Files option in SAW to access all log files available on a given server.

► **To display, print, and delete server log files**

1. From the SAW main menu, choose Work with Server Log Files.

The Work with Server Log Files form appears.

```
Session A - [24 x 80]
File  Edit  Transfer  Appearance  Communication  Assist  Window  Help

 PrtScrn  Copy  Paste  Send  Recv  Display  Color  Map  Record  Stop  Play  Quit  Clipbrd  Support  Index

 SAW                        Work with Server Log files              J.D. Edwards
 JDED: KP5820454                      Port 6996              11-01-00  08:28:54

 Type option, press enter.
   4=Delete     5=Display      6=Print

 Opt     Size        Date        Time           Name
  _         1      01/10/100    10:33:58       JDEDEBUG_312330.log
  _        42      01/10/100    16:27:37       JDEDEBUG_315218.log
  _         3      01/11/100    07:41:57       JDEDEBUG_316855.log
  _         5      01/11/100    08:28:48       JDEDEBUG_316968.log
  _       601      01/11/100    08:13:34       JDEDEBUG_311243.log
  _         1      01/10/100    07:38:11       JDEDEBUG_311245.log
  _        13      01/10/100    07:39:16       JDEDEBUG_311248.log
  _        54      01/10/100    07:39:27       JDEDEBUG_311249.log
  _       200      01/10/100    07:46:03       JDEDEBUG_311068.log
  _        65      01/10/100    16:26:51       JDEDEBUG_311284.log
                                                              More...
 Selection
 ===>  _____

 _____
    F1=Help    F3=Exit    F5=Refresh      F12=Cancel      F16=Resequence

 _____
 MA   a                                                          08/003
```

This form displays all log files for network, kernel, and batch processes. SAW measures the size of the log files in Kilobytes.

You can sort information on this form by using key commands and function keys. Press F1 to see a list of these options.

2. In the Opt field in front of a process, enter one of the following values:

- Enter 4 to delete the log file

- Enter 5 to view the log file

- Enter 6 to print the log file

Note:

If you view log files for a remote server, you see only the data available at the time when you open the log. As a process continues, the system might add data to the log after you open the file. Reopen the log file at a later time to determine whether the system added new data.

Modifying the Server jde.ini File
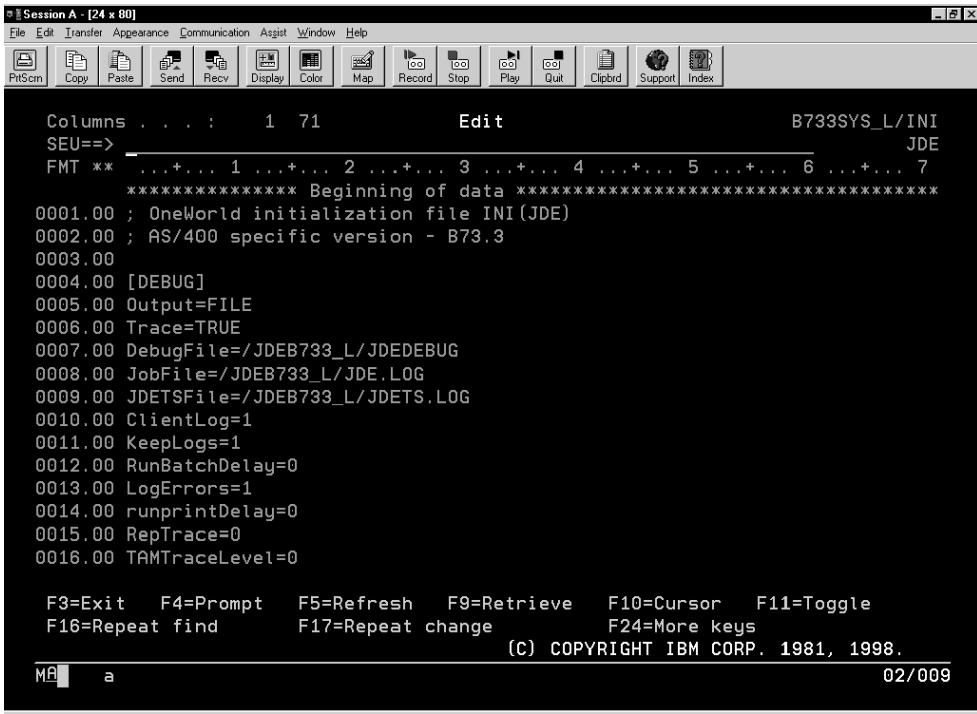
SAW provides access to the jde.ini file for the server that you are using. You can view and modify settings in the jde.ini file *only* on the local host and local port. You cannot administrate the jde.ini file on remote servers.

► **To modify the server jde.ini file**

1. From the SAW main menu, choose Work with Server INI File.

   This option starts the Source Entry Utility (SEU) editor. Within this editor, you can view and modify the local jde.ini file.

The SEU editor appears with the jde.ini file displayed.

2. View and modify the jde.ini file as necessary and then press F3 when you finish.

The Exit form for the SEU editor appears.

```
Exit

  Type choices, press Enter.

      Change/create member  . . . . . . .    N           Y=Yes, N=No
        Member  . . . . . . . . . . . .    JDE_____  Name, F4 for list
        File  . . . . . . . . . . . .    INI_____  Name, F4 for list
          Library . . . . . . . . . . .     B733SYS_L_ Name
        Text  . . . . . . . . . . . . .    _____
  _____
      Resequence member . . . . . . . .    Y           Y=Yes, N=No
        Start . . . . . . . . . . . . .    0001.00     0000.01-9999.99
        Increment . . . . . . . . . . .    01.00       00.01-99.99

      Print member  . . . . . . . . . .    N           Y=Yes, N=No

      Return to editing . . . . . . . .    N           Y=Yes, N=No

      Go to member list . . . . . . . .    N           Y=Yes, N=No



    F3=Exit    F4=Prompt    F5=Refresh    F12=Cancel

  MA    a                                                      05/042
```

3. Save your modifications to the jde.ini file by entering Y in the Change/Create Member field.

   You can disregard the modifications by entering N in this field.

Monitoring ERP 8.0 with SAW on UNIX

The Server Administration Workbench on UNIX provides access to the following information:

- Work with Servers

  This option allows you to view ERP 8.0 services running on other servers on any port.

- Work with Server Processes

  This option provides the ability to start, stop, and view ERP 8.0 services. You can view information for other servers that run on any remote host server, but you can only start and stop services that run on the local host server.

- Work with Server Resources

  This option allows you to view information about general ERP 8.0 resources on a server, such as locks and local resources, and disk space resources, such as disk availability.

- Work with Server Log Files

  This option provides a list of all log files for ERP 8.0 network, kernel, and batch processes. From this menu, you can view and delete the log files.

- Work with Server INI File

  This option starts the Source Entry Utility (SEU) to allow you to view and change settings in the local JDE.INI file. You cannot access JDE.INI files on remote servers.

Note:

The name of the current server and the port for the host server appear at the top of every form in SAW.

The recommended terminal to use when you monitor your configuration with SAW is xterm with a minimum 80 columns and 24 lines (default).

Accessing SAW

You can access SAW from the command line.

▶ To access SAW

On the command line, enter the following command:

```
saw.sh
```
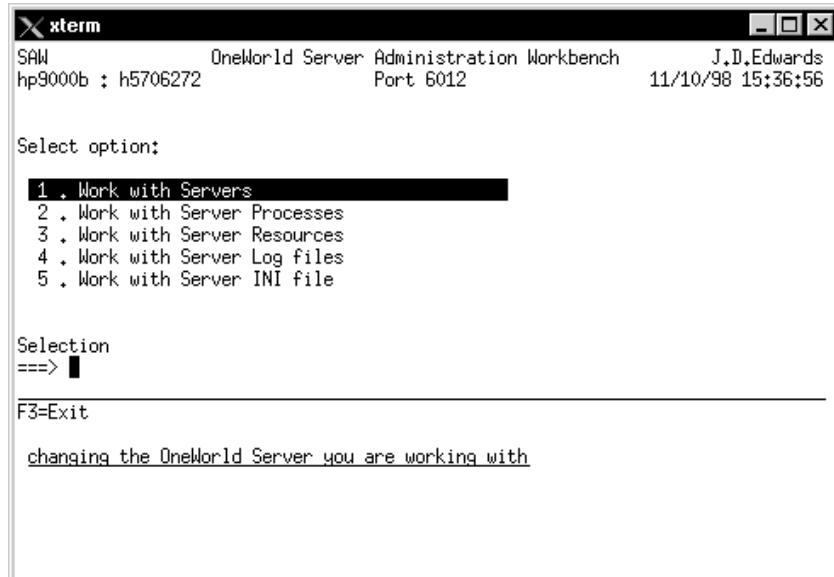
Monitoring Remote ERP 8.0 Servers

This application allows you to change the server that you monitor using SAW. The services on the remote server can run on any port number.
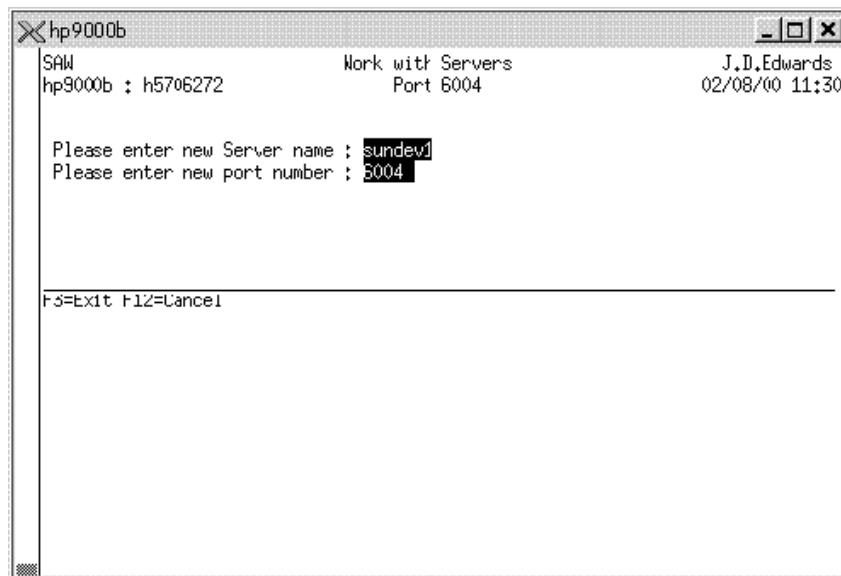
▶ To monitor remote ERP 8.0 servers

1. From the SAW main menu, choose Work with Servers.

You can either use the arrow keys to move focus to the appropriate option and press Enter or enter the number of the option on the command line.

The Work with Servers form appears.

```
╔═══════════════════════════════════════════════════════════════════════╗
║ ╳ hp9000b                                                    _ □ ✕     ║
║ SAW                           Work with Servers           J.D.Edwards  ║
║ hp9000b : h5706272                Port 6004               02/08/00 11:30║
║                                                                         ║
║     Please enter new Server name :  sundev1                             ║
║     Please enter new port number :  6004                               ║
║                                                                         ║
║                                                                         ║
║    ─────────────────────────────────────────────────────────────       ║
║   F3=Exit F12=Cancel                                                    ║
║                                                                         ║
╚═══════════════════════════════════════════════════════════════════════╝
```

2. Enter a new server name and port number.

   When you enter a valid server name, the name of the server replaces the previous server in the upper left corner of the form.

   If you enter a server name that does not exist on the current port, or if the network fails to make a connection, SAW stops the process after fifteen seconds. You need to reset the server using Work with Servers.

Starting, Stopping, and Displaying ERP 8.0 Server Processes
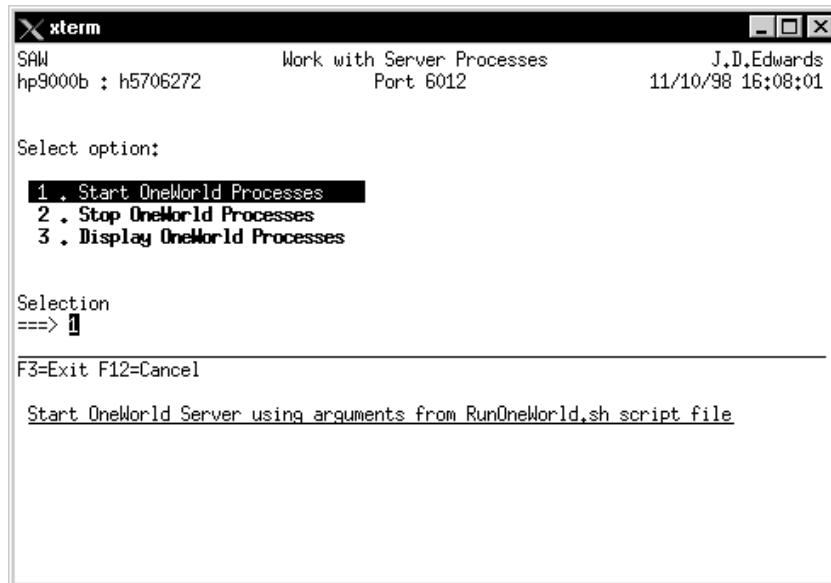
The Work with Server Processes form allows you to start or stop the local ERP 8.0 server and to display the processes currently running for any server and port number on the network. You can only stop kernel and queue services on the local server. To stop services on other servers, you must work with the server directly.

▶ To start a ERP 8.0 server

1. From the SAW main menu, choose Work with Server Processes.

   You can either use the arrow keys to move focus to the appropriate option and press Enter or enter the number of the option on the command line.

239

The Work with Server Processes form appears.

```
X xterm                                                        _ □ ×
SAW                        Work with Server Processes          J.D.Edwards
hp9000b : h5706272                  Port 6012              11/10/98 16:08:01


Select option:

   ▌1 . Start OneWorld Processes▐
    2 . Stop OneWorld Processes
    3 . Display OneWorld Processes


Selection
===> 1

F3=Exit F12=Cancel
_____

  Start OneWorld Server using arguments from RunOneWorld.sh script file
```

2. Choose Start ERP 8.0 Processes.

    If the server is already running, the Stop ERP 8.0 Processes option appears in bold, while the Start ERP 8.0 Processes option appears in a normal font.

► **To stop a ERP 8.0 server**

1. From the SAW main menu, choose Work with Server Processes.

The Work with Server Processes form appears.

```
X xterm                                                        _ □ ×
SAW                        Work with Server Processes          J.D.Edwards
hp9000b : h5706272                  Port 6012              11/10/98 16:36:00


Select option:

    1 . Start OneWorld Processes
   ▌2 . Stop OneWorld Processes▐
    3 . Display OneWorld Processes


Selection
===> 2

F3=Exit F12=Cancel
_____

  Stop OneWorld Processes using arguments from RunOneWorld.sh script file
```

2. Choose the Stop ERP 8.0 Processes option.
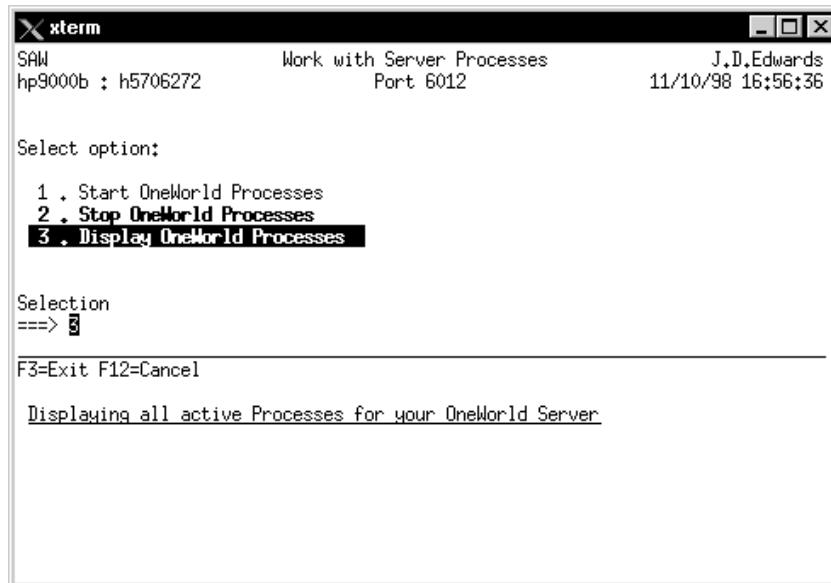
    If the server is not currently running, the Start ERP 8.0 Processes option appears in bold, while the Stop ERP 8.0 Processes option appears in a normal font.

► **To display ERP 8.0 server processes**

1. From the SAW main menu, choose Work with Server Processes.

The Work with Server Processes form appears.

```
╔══════════════════════════════════════════════════════════════════╗
║ ✕ xterm                                              _ □ ✕        ║
╟──────────────────────────────────────────────────────────────────╢
║ SAW                    Work with Server Processes      J.D.Edwards ║
║ hp9000b : h5706272            Port 6012            11/10/98 16:56:36║
║                                                                    ║
║ Select option:                                                     ║
║                                                                    ║
║   1 . Start OneWorld Processes                                     ║
║   2 . Stop OneWorld Processes                                      ║
║   3 . Display OneWorld Processes                                   ║
║                                                                    ║
║                                                                    ║
║ Selection                                                          ║
║ ===> 3                                                             ║
║ ──────────────────────────────────────────────────────────────   ║
║ F3=Exit F12=Cancel                                                 ║
║                                                                    ║
║   Displaying all active Processes for your OneWorld Server         ║
║                                                                    ║
╚══════════════════════════════════════════════════════════════════╝
```
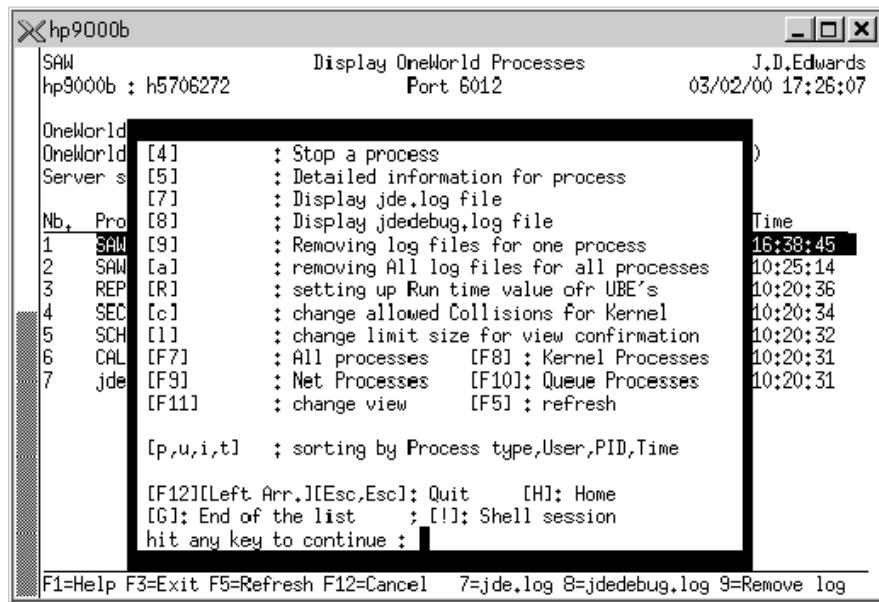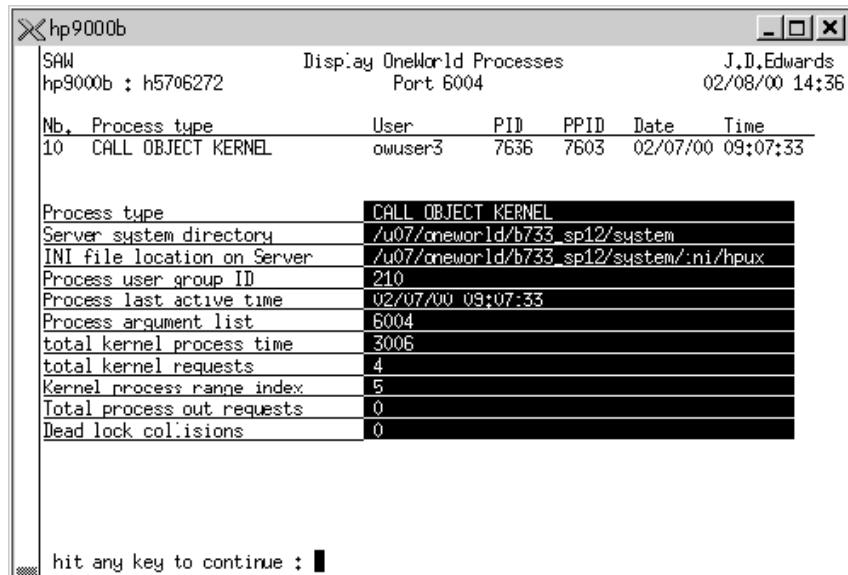
2. Choose Display ERP 8.0 Processes.

    The Display ERP 8.0 Processes form appears. On this form you can view detailed information about kernel processes, network processes, and queue processes. You can also display and delete logs for the ERP 8.0 processes. When you display ERP 8.0 processes for the local host server, you can end the processes.

    You can modify the appearance of this form by using key commands and function keys. Press F1 to see a list of these options.

```
Xhp9000b                                                          _ □ ×
SAW                      Display OneWorld Processes         J.D.Edwards
hp9000b : h5706272             Port 6012             03/02/00 17:26:07

OneWorld
OneWorld  [4]        : Stop a process                           )
Server s  [5]        : Detailed information for process
          [7]        : Display jde.log file
Nb.  Pro  [8]        : Display jdedebug.log file                Time
1    SAW  [9]        : Removing log files for one process        16:38:45
2    SAW  [a]        : removing All log files for all processes  10:25:14
3    REP  [R]        : setting up Run time value ofr UBE's       10:20:36
4    SEC  [c]        : change allowed Collisions for Kernel      10:20:34
5    SCH  [l]        : change limit size for view confirmation   10:20:32
6    CAL  [F7]       : All processes     [F8] : Kernel Processes 10:20:31
7    jde  [F9]       : Net Processes     [F10]: Queue Processes  10:20:31
          [F11]      : change view       [F5] : refresh

          [p,u,i,t]  : sorting by Process type,User,PID,Time


          [F12][Left Arr.][Esc,Esc]: Quit      [H]: Home
          [G]: End of the list     ; [!]: Shell session
          hit any key to continue : █

F1=Help F3=Exit F5=Refresh F12=Cancel    7=jde.log 8=jdedebug.log 9=Remove log
```

- Option 5 allows you to view more detailed information about the chosen process. The following screen is an example of detailed information for a kernel process:

```
Xhp9000b                                                          _ □ ×
SAW                      Display OneWorld Processes         J.D.Edwards
hp9000b : h5706272             Port 6004             02/08/00 14:36

Nb.  Process type              User      PID    PPID   Date      Time
10   CALL OBJECT KERNEL        owuser3   7636   7603   02/07/00 09:07:33


Process type                   CALL OBJECT KERNEL
Server system directory        /u07/oneworld/b733_sp12/system
INI file location on Server    /u07/oneworld/b733_sp12/system/:ni/hpux
Process user group ID          210
Process last active time       02/07/00 09:07:33
Process argument list          6004
total kernel process time      3006
total kernel requests          4
Kernel process range index     5
Total process out requests     0
Dead lock collisions           0




 hit any key to continue : █
```

- All other options on the Display ERP 8.0 Process help form are valid for both local and remote servers.

Note:

You only need to press the key to perform the command. For example, press Shift + G or Shift + H and you automatically go to the end of the list or the beginning of the list respectively.

```
X xterm                                                          _ □ ×
SAW                    Display OneWorld Processes            J.D.Edwards
hp9000b : h5706272              Port 6012               11/10/98 17:09:09

OneWorld all    processes : 5
OneWorld active resources : 15 SHM(4) SEM(0) MSQ(10) MUTEX(1) SWMR(0)
Server system directory   : /u15/shahin/bdev/system

Nb.  Process type                User      PID    PPID   Date      Time
1    SAW Kernel                  h5706272  2894   26896  11/09/98 17:17:25
2    jdenet_n                    h5706272  26896  26895  11/05/98 16:47:13
3    Transaction Manager Kernel  h5706272  26907  26896  11/05/98 16:47:17
4    Security Kernel             h5706272  26931  26896  11/05/98 16:47:21
5    Data Replication Kernel     h5706272  26971  26896  11/05/98 16:47:26

F1=Help F3=Exit F5=Refresh F12=Cancel    7=jde.log 8=jdedebug.log 9=Remove log
```

3. If you are viewing processes for the host server, press 5 to view detail information about the selected process.

▶ **To display and delete log files for ERP 8.0 server processes**

1. From the SAW main menu, choose Work with Server Processes.

   The Work with Server Processes form appears.

2. Choose Display ERP 8.0 Processes.

   The Display ERP 8.0 Processes form appears.

3. Choose a process, then do one of the following:

   • Press 7 to view the log file.

     Allows you to view the jde.log for the chosen process. If the size of the file you want to view is larger than the maximum allowed size, a confirmation form is displayed before viewing this file.

   • Press 8 to view the debug log file.

     Allows you to view the jdedebug.log for the chosen process. If the size of the file you want to view is larger than the maximum allowed size, a confirmation form is displayed before viewing this file.

   • Press F4 to view the jdedebug file using vi.

   • Press 9 to delete all log files for the process.

   • Press the "A" key to delete all log files for *all* processes.

     On the confirmation form that appears, enter Yes.

   • Press the "R" key to change the maximum time allowed for a UBE process to run.

The value is entered in minutes. The default value is 2880 minutes (48 hours). If a UBE process runs for more than this value, the process is marked with the letter R and will be underlined in the process list. This value is only used in SAW to monitor the execution time for UBEs and does not interfere with the execution of the UBE. UBEs are not stopped by SAW if their execution time exceeds this time limit.

- Type c to change the maximum number of collisions allowed for a kernel process.

  If the number of collisions exceeds this number, the process is marked with letter C and underlined in the process list. This value is used only in SAW to monitor the number of collisions for a kernel process and does not interfere with the execution of the process. Kernel processes with the number of collisions set larger than this limit are not stopped by the interface.

  A collision occurs when a kernel is processing a manual commit request and the server receives additional manual commit requests for the same process. If a kernel's number is much larger than other kernels, this information can be a warning for that kernel. The warning can mean the kernel process is taking too long to process the commit request and other requests are waiting for the same kernel. Kernel process collisions are harmless and normal. However, it is not normal to have a high number of collisions for a kernel while additional manual commit requests wait for the same kernel. For collisions, the number of outstanding kernel requests does not increment. The kernel process pulls out the request and inserts it into its own list.
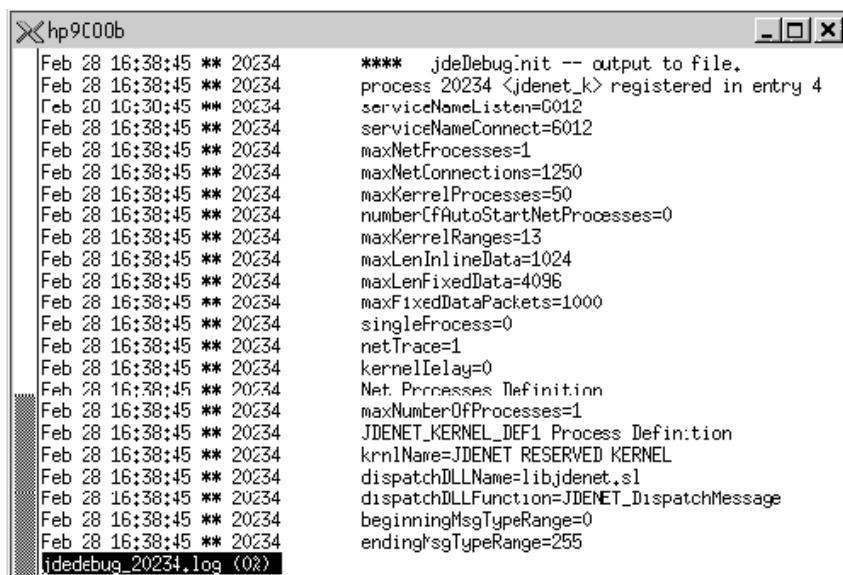
Note:

When you view a log file, press the Space key for the next page of the file. Type q to stop viewing the log.

The following form provides an example of a log file:

► **To stop individual ERP 8.0 kernel and queue processes**

1. From the SAW main menu, choose Work with Server Processes.

   The Work with Server Processes form appears.

2. Choose Display ERP 8.0 Processes.

   The Display ERP 8.0 Processes form appears.

3. Choose the process to stop and press 4. Enter Yes to confirm.

   Option 4 is valid only for the local server. This option allows you to stop a kernel or jdequeue process. This option is not active for a remote server or for jdenet processes.

   SAW removes the process and then refreshes the form.

Displaying Server IPC and Disk Space Resources

The Work with Server Resources form provides information about current IPC resources and disk space information on the server. The IPC resources available for viewing are:

- Message queues (MSG)

  A message queue allows one process to pass packets to another process on the same host.

- Single Write Multiple Read (SWMR)

  SWMR is a lock that allows only one writer to change data, but multiple readers can access the data. The system grants reader locks if no outstanding writer locks exist and grants writer locks if no outstanding reader locks exist.

- Shared memory (SHM)

  Shared memory means that a segment of memory appears in the address space of more than one process. For example, network processes might use a shared memory segment to monitor what processes exist and the status of those processes.

- Mutual exclusion (MTX)

  A mutual exclusion lock, or a mutex lock, allows only one process to hold the lock. This is the most common type of lock.

This section consists of the following tasks:
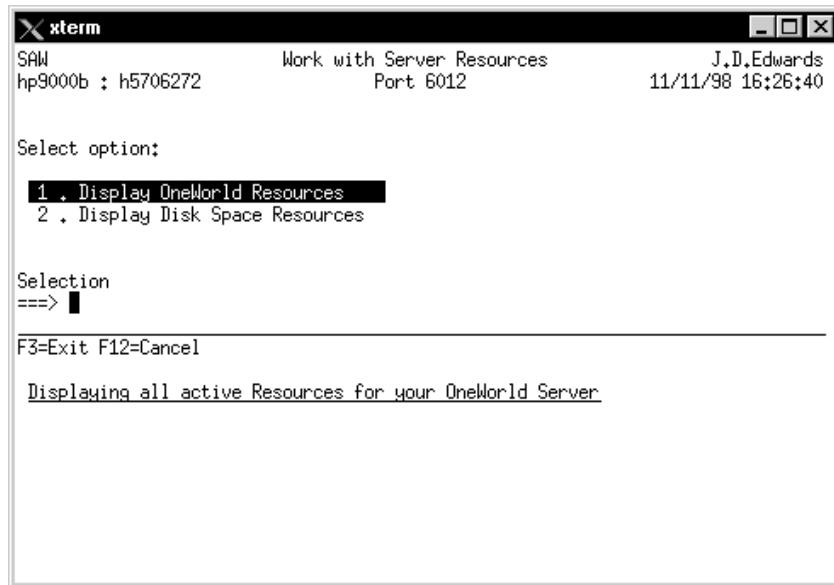
- Display ERP 8.0 IPC resources
- Display disk space resources

► **To display ERP 8.0 IPC resources**

1. From the SAW main menu, choose Work with Server Resources.

The Work with Server Resources form appears.

```
X xterm                                                              _ □ X
SAW                        Work with Server Resources            J.D.Edwards
hp9000b : h5706272              Port 6012                   11/11/98 16:26:40


Select option:

  1 . Display OneWorld Resources
  2 . Display Disk Space Resources


Selection
===>  █
_____
F3=Exit F12=Cancel

 Displaying all active Resources for your OneWorld Server
```

2.   Choose Display ERP 8.0 Resources.

The Display ERP 8.0 Resources form appears.

```
X xterm                                                              _ □ X
SAW                       Display OneWorld Resources             J.D.Edwards
hp9000b : h5706272              Port 6012                   11/11/98 16:35:17

OneWorld ALL  resources    : 15
OneWorld active processes : 5 Krnl (4) Net (1) Queue (0)

Nb. Resource Name              IPC ID    Key    IPC Type  User ID
1   port6012                  2589743   91003   SHM       h5706272
2   Krnl21357RspQ               58460   91003   MSG       h5706272
3   Krnl26931RspQ              112707   91006   MSG       h5706272
4   Krnl26907RspQ               99393   91004   MSG       h5706272
5   Krnl2894RspQ               114706   91001   MSG       h5706272
6   Net26896Q                   78876   91000   MSG       h5706272
7   JdeProcShm               45206558   91001   SHM       h5706272
8   Krnl26971RspQ              370761   91008   MSG       h5706272
9   port6012 Fixed            1615920   91004   SHM       h5706272
10  Krnl26931ReqQ              115780   91007   MSG       h5706272
11  Krnl26907ReqQ               61506   91005   MSG       h5706272
12  Krnl2894ReqQ               106515   91002   MSG       h5706272
13  JDENETGDM port6012          46126   91001   MTX       h5706272
14  port6012 Cfg              9286689   91002   SHM       h5706272
15  Krnl26971ReqQ              112714   91009   MSG       h5706272
_____
F1=Help F3=Exit F5=Refresh F12=Cancel   5=Detailed info█
```

You can modify the appearance of this form by using key commands and function keys.
Press F1 to see a list of these options.

► **To display disk space resources**

1. From the SAW main menu, choose Work with Server Resources.

   The Work with Server Resources form appears.

2. Choose Display Disk Space Resources.

The Display Disk Space Resources form appears.

SAW measures disk space in KB. You can modify the appearance of this form by using key commands and function keys. Press F1 to see a list of these options.

Note:

The underlined disk resource represents the ERP 8.0 disk resource for the current server.

Displaying, Printing, and Deleting Server Log Files

You can use the Work with Server Log Files option in SAW to access all log files available on a given server.

▶ **To display, print, and delete server log files**

1. From the SAW main menu, choose Work with Server Log Files.

The Work with Server Log Files form appears.

```
✕ hp9C0Ob                                                                      _ □ ✕
 SAW                          World with Server Log files            J.D.Edwards
 hp90C0b : h5706272                     Port 6012              02/08/00 15:56:25
 current directory : /home/h5706272
 debug   directory : /u15/shahin/bdev/system/bin32/log
 log     directory : /u15/shahin/bdev/system/bin32/log
 Number of files : 103  (current limit 50 K)

 Nb.       Size    Date      Time         Name
 1          171    02/C8/00  15:14:43     jde_4929.log
 2          171    02/C8/00  15:14:43     jde_4925.log
 3          171    02/C8/00  15:14:42     jde_4921.log
 4          171    02/C8/00  15:14:40     jde_4917.log
 5          171    02/C8/00  15:14:40     jde_4913.log
 6          171    02/C8/00  15:14:39     jde_4908.log
 7          171    02/C8/00  15:14:39     jde_4904.log
 8          171    02/C8/00  15:14:38     jde_4896.lng
 9          171    02/C8/00  15:14:36     jde_4888.log
 10         171    02/C8/00  15:14:35     jde_4877.log
 11         171    02/C8/00  15:14:35     jde_4869.log
 12         171    02/C8/00  15:14:34     jde_4861.log
 13         171    02/C8/00  15:14:44     jde_4937.log
 14         171    02/C8/00  15:12:43     jde_3791.log

 F1=Help F3=Exit F5=Refresh F12=Cancel    4=Remove 5=Display 6=Print
```

This form displays all log files for currently running network, kernel, and batch processes including log files for previously run processes. SAW measures the size of the log files in KB.

Press F1 to see a list of options for this screen.

2. Choose a log file, then do one of the following:

- Press 4 to delete one or more log files on the server.

  To get a list of options explaining how you can remove files, press the F1 key. When log files are removed, they are marked with <Deleted> in the log list at the end of each line. These files are marked <Deleted>, but they are not actually deleted until you refresh the form by pressing the F5 key. This allows you to undo a remove if necessary. Once you choose F5 to refresh the form, the files are deleted from the server.

The following form shows how log files look after they have been marked for deletion but before F5 is chosen.

```
X hp9C00b                                                                    _ □ X
SAW                          World with Server Log files              J.D.Edwards
hp9C00b : h5706272                    Port 6012                  02/08/00 15:57:31
current directory : /home/h5706272
debug   directory : /u15/shahin/bdev/system/bin32/log
log     directory : /u15/shahin/bdev/system/bin32/log
Number of files : 103  (current limit 50 K)

Nb.       Size    Date      Time       Name
1         171     02/08/00  15:14:43   jde_4929.log <Deleted>
2         171     02/08/00  15:14:43   jde_4925.log <Deleted>
3         171     02/08/00  15:14:42   jde_4921.log <Deleted>
4         171     02/08/00  15:14:40   jde_4917.log <Deleted>
5         171     02/08/00  15:14:40   jde_4913.log <Deleted>
6         171     02/08/00  15:14:39   jde_4908.log <Deleted>
7         171     02/08/00  15:14:39   jde_4904.log <Deleted>
8         171     02/08/00  15:14:38   jde_4896.lng <Deleted>
9         171     02/08/00  15:14:36   jde_4888.log <Deleted>
10        171     02/08/00  15:14:35   jde_4877.log <Deleted>
11        171     02/08/00  15:14:35   jde_4869.log
12        171     02/08/00  15:14:34   jde_4861.log
13        171     02/08/00  15:14:44   jde_4937.log
14        171     02/08/00  15:12:43   jde_3791.log

F1=Help F3=Exit F5=Refresh F12=Cancel    4=Remove 5=Display 6=Print
```

- Press 5 to view the log file.

- Press 6 to print the log file.

- Type b to remove all log files bigger than the current size limit.

  The current size limit appears at the top of the form. You can undo the remove by pressing b again before refreshing the form. Once you refresh the form using F5, the files you marked are deleted from the server.

- Type l to set the size limit for retrieving log files.

  The number is entered in kilobytes. Log files can be big on the server and choosing to view them, especially if you are monitoring a remote server, can be time consuming. Before viewing or transferring a log file, SAW checks the log file's size. If the log file exceeds the size limit, SAW verifies that you do want to view the file.

Note:

When you view a log file, press the Enter key for the next page of the file. Type q key to stop viewing the log. You can press F4 to view the chosen file using vi.

Working with the Server JDE.INI File
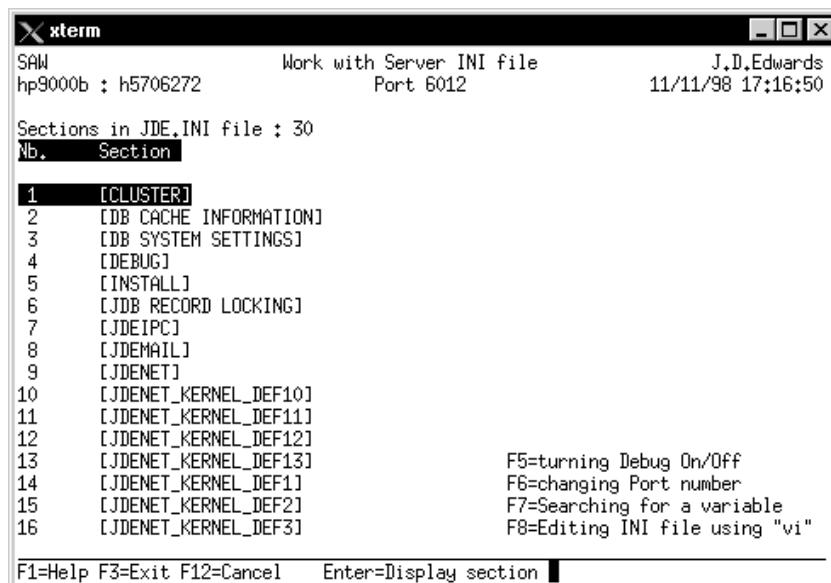
SAW provides access to the local JDE.INI file. You can view and modify settings in the JDE.INI file *only* on the local server. You cannot administrate the JDE.INI file on remote servers.

▶ To modify the server JDE.INI file

1. From the SAW main menu, choose Work with Server INI File.

The Work with Server INI File form appears.

```
╔═══════════════════════════════════════════════════════════════╗
║ ✕ xterm                                             _ □ ✕      ║
╠═══════════════════════════════════════════════════════════════╣
║ SAW                    Work with Server INI file    J.D.Edwards║
║ hp9000b : h5706272             Port 6012        11/11/98 17:16:50║
║                                                               ║
║ Sections in JDE.INI file : 30                                 ║
║ Nb.    Section                                                ║
║                                                               ║
║ 1      [CLUSTER]                                              ║
║ 2      [DB CACHE INFORMATION]                                 ║
║ 3      [DB SYSTEM SETTINGS]                                   ║
║ 4      [DEBUG]                                                ║
║ 5      [INSTALL]                                              ║
║ 6      [JDB RECORD LOCKING]                                   ║
║ 7      [JDEIPC]                                               ║
║ 8      [JDEMAIL]                                              ║
║ 9      [JDENET]                                               ║
║ 10     [JDENET_KERNEL_DEF10]                                  ║
║ 11     [JDENET_KERNEL_DEF11]                                  ║
║ 12     [JDENET_KERNEL_DEF12]                                  ║
║ 13     [JDENET_KERNEL_DEF13]    F5=turning Debug On/Off       ║
║ 14     [JDENET_KERNEL_DEF1]     F6=changing Port number       ║
║ 15     [JDENET_KERNEL_DEF2]     F7=Searching for a variable   ║
║ 16     [JDENET_KERNEL_DEF3]     F8=Editing INI file using "vi"║
║ ─────────────────────────────────────────────────────────── ║
║ F1=Help F3=Exit F12=Cancel    Enter=Display section ▮        ║
╚═══════════════════════════════════════════════════════════════╝
```

2. Choose a section and then press Enter.

   A form appears that lists the settings for the JDE.INI section.

   If you don't know the section in which a variable resides but you know the name of the variable, press F7 to perform a search on the variable. SAW returns a list of sections in which the variable resides.

3. Choose a setting and then press F6.

   The Changing Value for Current Variable form appears.

4. Enter a new value for the setting and then press any key to return to the settings list.

5. Press the left arrow key to return to the sections list.

▶ To edit the server JDE.INI file

1. From the SAW main menu, choose Work with Server INI File.

   The Work with Server INI File form appears.

2. Press F8.

The vi editor opens to display the full JDE.INI.

3. Change the JDE.INI file as necessary and then save and quit vi.

Note:

See UNIX online manual for the commands available in the vi editor. To access the manual, type man vi at the UNIX prompt.

▶ To turn on or turn off debugging

1. From the SAW main menu, choose Work with Server INI file.

   The Work with Server INI File form appears.

2. Press F5.

The Turning Debug On/Off form appears, informing you that debugging was either turned on or off.

```
┌─────────────────────────────────────────────────────────────────┐
│ ✕ xterm                                              _ □ ✕        │
│ SAW                   Work with Server INI file       J.D.Edwards │
│ hp9000b : h5706272          Port 6012            11/11/98 17:55:32│
│ Secti ┌───────────────────────────────────────────────┐          │
│ Nb.   █                                                █          │
│       █          ┌─Turning debug On/Off─┐              █          │
│  1    █                                                █          │
│  2    █  current value of [DEBUG].Output is "FILE"     █          │
│  3    █  current value of [DEBUG].Trace is "TRUE"      █          │
│  4    █  Debug has been turned off by setting          █          │
│  5    █                                                █          │
│  6    █  [DEBUG].Output = NONE                         █          │
│  7    █  [DEBUG].Trace = FALSE                         █          │
│  8    █                                                █          │
│  9    █                                                █          │
│ 10    █                                                █          │
│ 11    █                                                █          │
│ 12    █                                                █          │
│ 13    █                                                █          │
│ 14    █                                                █          │
│ 15    █  hit any key to continue : █              le   █          │
│ 16    █                                          "vi"  █          │
│       └───────────────────────────────────────────────┘          │
│ F1=Help F3=Exit F12=Cancel    Enter=Display section              │
└─────────────────────────────────────────────────────────────────┘
```

3. Press F5 again to reset debugging to the previous setting.

```
┌─────────────────────────────────────────────────────────────────┐
│ ✕ xterm                                              _ □ ✕        │
│ SAW                   Work with Server INI file       J.D.Edwards │
│ hp9000b : h5706272          Port 6012            11/11/98 17:55:44│
│ Secti ┌───────────────────────────────────────────────┐          │
│ Nb.   █                                                █          │
│       █          ┌─Turning debug On/Off─┐              █          │
│  1    █                                                █          │
│  2    █  current value of [DEBUG].Output is "NONE"     █          │
│  3    █  current value of [DEBUG].Trace is "FALSE"     █          │
│  4    █  Debug has been turned on by setting           █          │
│  5    █                                                █          │
│  6    █  [DEBUG].Output = FILE                         █          │
│  7    █  [DEBUG].Output = TRUE                         █          │
│  8    █                                                █          │
│  9    █                                                █          │
│ 10    █                                                █          │
│ 11    █                                                █          │
│ 12    █                                                █          │
│ 13    █                                                █          │
│ 14    █                                                █          │
│ 15    █  hit any key to continue : █              le   █          │
│ 16    █                                          "vi"  █          │
│       └───────────────────────────────────────────────┘          │
│ F1=Help F3=Exit F12=Cancel    Enter=Display section              │
└─────────────────────────────────────────────────────────────────┘
```

► **To change the port number of the server**

1. From the SAW main menu, choose Work with Server INI File.

   The Work with Server INI File form appears.

2. Press F6.

The Changing Port Number Value form appears.

```
X xterm                                                          _ □ ☒
SAW                     Work with Server INI file          J.D.Edwards
hp9000b : h5706272              Port 6012               11/11/98 17:55:58

Secti┌──────────────────────────────────────────────────────────────┐
Nb.  │                                                                │
     │                                                                │
 1   │                  Changing port number value                   │
 2   │   current value of port number is "6012"                      │
 3   │                                                                │
 4   │   Please enter new value for port number =                    │
 5   │   port number = 5020                                          │
 6   │                                                                │
 7   │                                                                │
 8   │                                                                │
 9   │                                                                │
10   │                                                                │
11   │                                                                │
12   │                                                                │
13   │                                                                │
14   │                                                              le│
15   │                                                             "vi"│
16   └──────────────────────────────────────────────────────────────┘

F1=Help F3=Exit F12=Cancel    Enter=Display section
```

3. Enter a new port number.

   The JDE.INI file immediately reflects the changed port number, but you must stop
   and restart the server to access information based on the new port number.

Monitoring ERP 8.0 with ERP 8.0 Knowledge Module

BMC Software has a product called PATROL, which allows companies to monitor and detect
errors across large networks and a variety of third-party software packages, including J.D.
Edwards ERP 8.0. The PATROL console offers a single interface for data monitoring and
collection across an entire distributed enterprise.

If you are using PATROL to monitor your system, you can use the ERP 8.0 Knowledge
Module (OWKM) to monitor the processes on your ERP 8.0 server. OWKM uses a command
line interface (CLI) to call JDESAW APIs, which retrieve server information and return the
data to the CLI. The CLI, in turn, sends the information to OWKM, which displays the
information on the PATROL console.

The following table lists the components of the OWKM solution and summarizes the role of
each component:

Component	Role
JDESAW	Dynamic link library containing SAW APIs, which retrieve data about OW servers running locally or remotely.
OWKM	Program that sends a request from a ERP 8.0 administrator to a CLI, receives the returned server data, and displays the data in the PATROL console.
CLI	Standalone, running program that receives a ERP 8.0 administrator's request from OWKM, calls JDESAW APIs, receives server data from the JDESAW APIs, formats the data, and sends it back to OWKM.

System and network administrators can read and analyze on the PATROL console the following types of information about ERP 8.0 servers:

- Whether a process on the server is active or inactive

- Log files for a process, including number of server log files, number of print queue log files, total log files, server log file size, total log file size, server log file percentage, print queue log file percentage, and total log file percentage

- Total number of server processes

- CLI statuses of OK, no data, partial data, or corrupted data

- For kernel processes, the process status, outstanding requests, and processing time

- For network processes, the process status, processing time, incoming connections, and outgoing connections

- For interprocess communication resources, the total number of resources and number of resources for each type

- For disk resources, free space, used space, and percentage of disk used

- For each instance of ERP 8.0, whenever applicable, the time variations of these parameters, displayed in a graph

The PATROL console, as it is used to monitor ERP 8.0 servers, displays icons for each server component. You can double click these icons to monitor each component. In addition, you can choose OWKM commands for each component to gather additional data about each one.

Operating System-Specific Considerations

You can monitor ERP 8.0 servers using OWKM and the PATROL console regardless of the operating system you use. However, the monitoring setups for each operating system differ slightly.

The following table summarizes the operating system considerations for monitoring ERP 8.0 servers with OWKM and PATROL.

Operating System	Consideration
AS/400	Because PATROL has not been developed for AS/400 systems, you monitor the AS/400 server by using PATROL and a ERP 8.0 client install from a Windows NT workstation.
Windows NT	To monitor ERP 8.0 servers running on Windows NT, you can either install PATROL on the monitored server and monitor the local server, or you can use a remote workstation with a ERP 8.0 install of PATROL.
UNIX	To monitor ERP 8.0 servers running on UNIX, you can either install PATROL on the monitored server and monitor the local server, or you can use a remote workstation with a ERP 8.0 install of PATROL.

Adding OWKM Files to the PATROL Environment

You add the OWKM files to the PATROL environment automatically, on either a Windows NT or UNIX system, by running an installation script.

► **To add OWKM files to the PATROL environment automatically**

1. Run the installation script.

    For Windows NT, run the script called OW_install_km.bat with the name
    PATROL_DIRECTORY as the argument of the script:

cd: c:\b7\system\owpatrol\owkm\psl

OW_install_km.bat <PATROL_DIRECTORY>

    For UNIX, run the script called OW_install_km.sh with the name
    PATROL_DIRECTORY as the argument of the script:

cd c:/u10/oneworld/system/owpatrol/owkm/psl

OW_install_km.sh <PATROL_DIRECTORY>

Loading OWKM Files

This procedure explains how to load the OWKM files so the SYSTEM_SETUP icon appears
in the PATROL console. Once ERP 8.0 and PATROL are set up, you will use this icon to
access the information about your servers. This procedure needs to be done only once to
configure your system.

► **To load OWKM files**

1. On the PATROL console, choose File, then Load KM.
2. Choose OW_ALL.kml.

    The SYSTEM_SETUP icon should appear in the PATROL console. If you
    accidentally repeat this procedure at a later time, choose Skip All to bring up the
    SETUP icon.

Adding a Host

Before you can monitor ERP 8.0 servers using OWKM and PATROL, you must use the
PATROL console to enter information about the host machine. Once you have entered the
required information, an icon for the host appears in the PATROL console. You can monitor
information about the host by double clicking its icon.

► **To add a host**

1. On the PATROL console, from the Hosts menu, choose Add.
2. On the Add Hosts form, complete the following fields:

    * Host Name

      Enter the name of the local workstation.

    * Computer Class

      From the list, choose the name of the operating system for the local workstation.

    * Connection Mode

This option specifies the network protocol for the agent. If you started PATROL in operator mode, this field is disabled. If you started PATROL in developer mode, you can check this option to change the alarms and other features.

- Protocol

  This option specifies the mode of communication with the PATROL console. Use the default value.

- Port

  This option specifies the port number used by PATROL to run on the system. It is not the same as the port number used by the ERP 8.0 server. Use the default value unless there is a conflict. If there is a conflict, choose an unused port number.

- Username
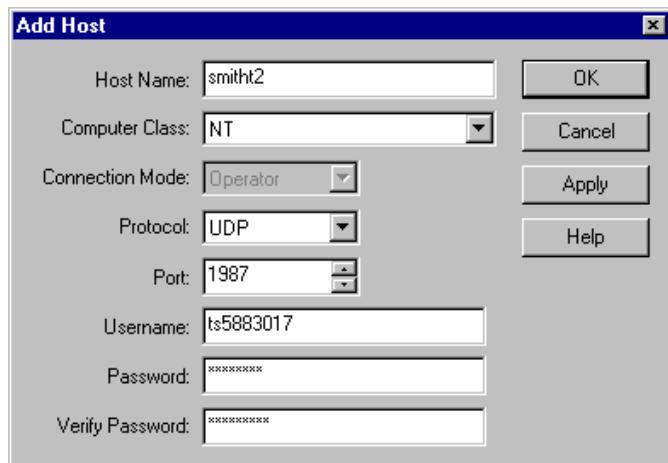
  Enter your network user name.

- Password

  Enter your network password.

- Verify Password

Reenter your network password.

3. Click OK.

4. In the PATROL console, double click the PatrolMainMap icon or expand the node.

   An icon labeled with the name of the host that you added appears in the PATROL console.

Adding a ERP 8.0 Server
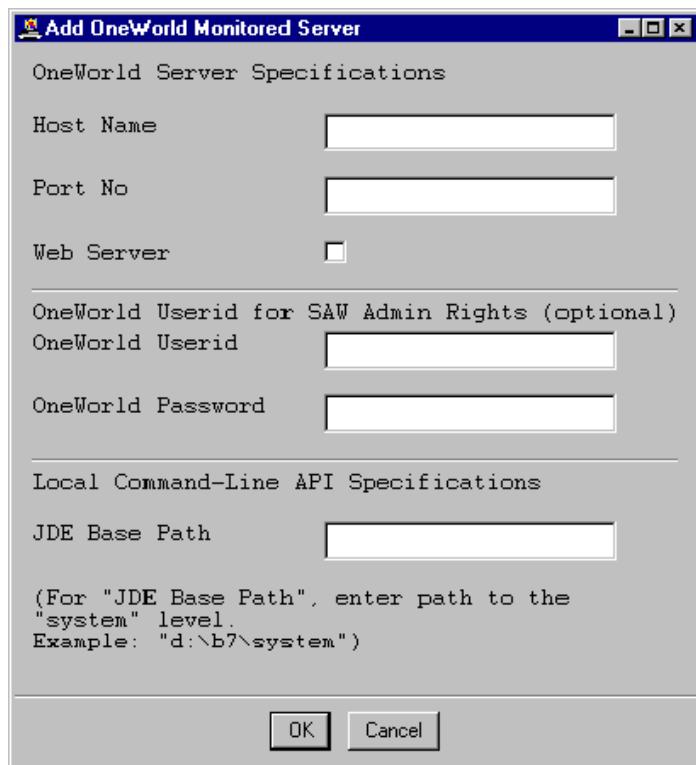
Before you can monitor ERP 8.0 servers using OWKM and PATROL, you must enter information about each server. After you enter the information, an icon for each server appears in the PATROL console.

► **To add a ERP 8.0 server**

1. In the PATROL console, right click the MainMap icon, then choose:

   - KM Commands

   - Configure

   - ERP 8.0 Monitored Servers

2. In the Configure ERP 8.0 Monitored Servers form, choose the Add option and click Execute.

The Add ERP 8.0 Monitored Server form appears.

3. In the Add ERP 8.0 Monitored Server form, complete the following fields:

   - Host Name

     Enter the name of the local or remote server.

   - Port Number

     Enter the server's port number.

   - Web Server

     Choose this option if you are monitoring a web server.

   - ERP 8.0 Userid

     Enter your ERP 8.0 ID.

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- ERP 8.0 Password

  Enter your ERP 8.0 password.

- JDE Base Path

  Enter the path to the ERP 8.0 installation directory on your local workstation. The CLI, which communicates with any local or remote server that you monitor, is installed under this directory. For example, for Windows NT, you might enter d:\b7\system. For UNIX, you might enter /u15/oneworld/system.

4. Click OK.

   After you add a server to be monitored, OW_SYSTEM is added to the MainMap icon, indicating that you have configured at least one server.

Configuring OWKM

After you have added ERP 8.0 servers for monitoring, you can configure OWKM from the PATROL console. You configure OWKM to set, for example, how frequently the CLI retrieves data from the server or the maximum log size you want to retrieve.

Some OWKM configuration settings are persistent, meaning that they remain until you change them. Others are nonpersistent, meaning that they revert back to default status each time you restart PATROL.

Persistent settings are:

- Max Log Size to Retrieve
- Max Log Lines to Display
- Send Alarm Event When Server Bounced
- UBE Alarm Timeout

Nonpersistent settings are:

- Data Request Timeout
- Log Request Timeout
- Preserve Non-Error Log Files

The following table lists and briefly describes each OWKM configuration parameter:
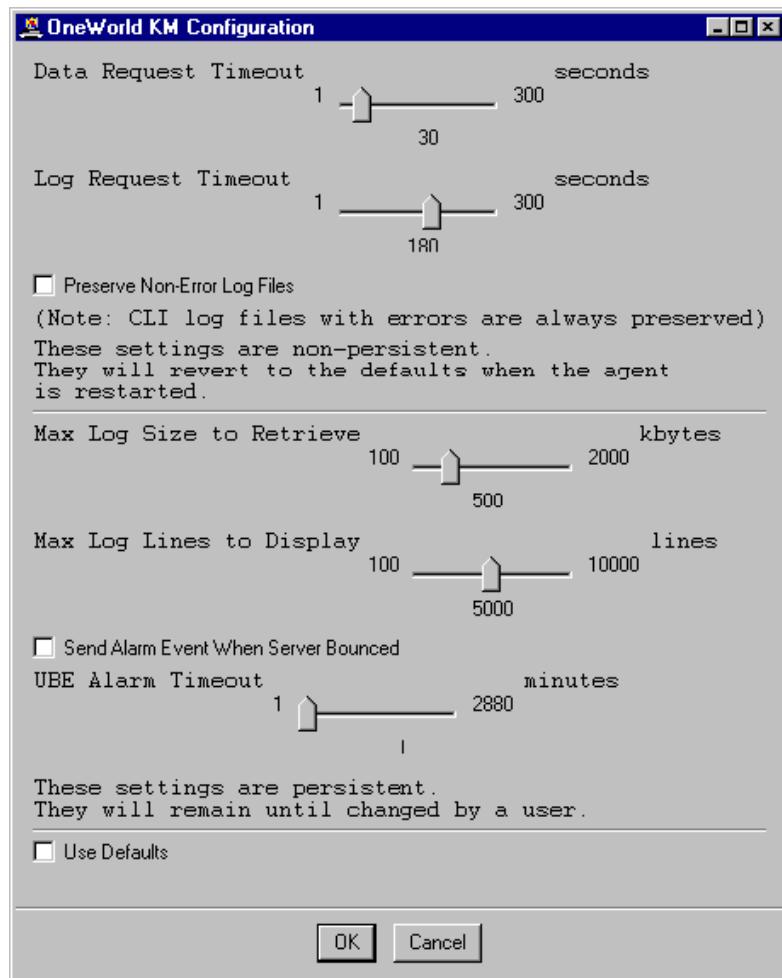
OWKM Configuration Parameter	Explanation
Data Request Timeout	Number of seconds to wait to retrieve data from the server. Value range is 1 to 300 seconds. Default is 30 seconds.
Log Request Timeout	Number of seconds to wait to retrieve log files from the server. Value range is 1 to 300 seconds. Default is 180 seconds.
Preserve Non-Error Log Files	Creates a JDEDEBUG log file each time the CLI retrieves data from the server. Use for debugging purposes only, as the CLI process will create a large number of files in your system. Default is off.
Max Log Size to Retrieve	Determines how many bytes from the bottom of the log file the CLI retrieves from the server. Range is 100 to 2,000 kbytes. Default is 100 kbytes.
Max Log Lines to Display	Determines how many lines of a log file will be displayed in the PATROL console. Range is 100 to 10,000 lines. Default is 5,000 lines.
Send Alarm Event When Server Bounced	Sends an alarm whenever a server you are monitoring is bounced. Default is off.
UBE Alarm Timeout	Sends an alarm if a UBE runs longer than the value you set. Range is 1 to 2,880 minutes. Default is 60 minutes.
Use Defaults	Retrieves and sets default values for each configuration parameter after you choose the option and click OK. Default is off.

► **To configure OWKM**

1. In the PATROL console, right click the OW_SYSTEM icon, then choose:

   - KM Commands

   - Configure

   - ERP 8.0 KM (CLI)

The ERP 8.0 KM Configuration form appears.

OneWorld KM Configuration

Data Request Timeout   seconds
1   300
30

Log Request Timeout   seconds
1   300
180

☐ Preserve Non-Error Log Files

(Note: CLI log files with errors are always preserved)

These settings are non-persistent.
They will revert to the defaults when the agent
is restarted.

Max Log Size to Retrieve   kbytes
100   2000
500

Max Log Lines to Display   lines
100   10000
5000

☐ Send Alarm Event When Server Bounced

UBE Alarm Timeout   minutes
1   2880

These settings are persistent.
They will remain until changed by a user.

☐ Use Defaults

[OK] [Cancel]

2. In the ERP 8.0 KM Configuration form, make any necessary changes to the following configuration settings:

- Data Request Timeout

- Log Request Timeout

- Preserve Non-Error Log Files

- Max Log Size to Retrieve

- Max Log Lines to Retrieve

- Send Alarm Event When Server Bounced

- UBE Alarm Timeout

- Use Defaults

3. If you want to retrieve the default values for each setting, choose the Use Defaults option and click OK.

4. Review all configuration settings and click OK.

Enterprise Server Components Monitored by OWKM

After you add a server to be monitored by OWKM and PATROL, the PATROL console displays the name of the server. You can expand the server name node or double click the icon to reveal the monitored components. A yellow, blinking component icon indicates warning status. A red, blinking component icon indicates alarm status. For instance, if a disk runs out of space, the disk icon blinks red. If you expand the Disks icon node, the disk that has run out of space also blinks red.

The following table lists and briefly describes each monitored enterprise server component and briefly describes what PATROL and OWKM monitor for each one:

Component	Explanation
CLI_Status	Indicates if the CLI is communicating with the server. If the status is OK, communication is occurring properly. If there is a CLI error or the server is down, the CLI_Status icon blinks to indicate the problem.
Detailed Status	Provides summary information of all the other components.
Disks	Displays disk usage on the server.
INI	Allows users to view the ERP 8.0 server jde.ini file. SAW administrators can edit the file, if necessary.
Logs	Displays all the log and debug log files generated by ERP 8.0 server processes.
Processes	Displays information about ERP 8.0 processes monitored on each server, including business functions, jdenet, jdequeue, replication, SAW, Scheduler, and security.
Resources	Displays information about ERP 8.0 interprocess communication resources, such as shared memory, message queues, and semaphores.

The PATROL console also displays subcomponents of the Disks, Logs, Processes, and Resources components. You can expand the node for each of these components and double click a subcomponent to view information about it. For example, if you expand the Disks node, you reveal nodes for each disk on the server. If you double click an icon for a particular disk, you can view detailed status information about the disk, as well as data about the percent used, free space, and used space on the disk.

Monitoring Enterprise Servers Using KM Commands

The KM Commands menu item is a ERP 8.0-specific addition to PATROL features. The menu appears when you right click some icons in the PATROL console. KM Commands give you additional monitoring options for selected server components.

Note:

You can choose any available enterprise server component for monitoring by right clicking the server icon and choosing KM Commands and View.

The following table lists and summarizes the KM Commands options for each enterprise server component in the PATROL console:

Component	KM Commands Parameters	Comments
Server	• View • Refresh Parameters • Stop Monitoring • Detailed Status	• View: Allows user to choose an individual server component and view information about it. • Refresh Parameters: Gets server information immediately rather than waiting the normal time of one minute. • Stop Monitoring: Deletes the server from the list of servers to be monitored by PATROL and OWKM. • Detailed Status: Displays information on Disks, Logs, Processes, and Resources components in one form.
Disks	• View • Detailed Status	• View: Allows user to view a list of disks and the percentage used for each. Choose a disk and click View Details for host, port, path, mount point, and usage data.
INI	• View • Edit	• View: Allows users only to view the server's jde.ini file. • Edit: Allows users with SAW administrator privileges to edit the server's jde.ini file.
Logs	• View • Detailed Status	• View: Displays lists of log files, debug files, server logs, and print queue logs. Users can sort, select, and delete logs. Select an individual log and click Execute to view the log. • Detailed Status: Displays log type, file count, and disk usage information.
Processes	• View • Detailed Status • Clear Missing Process Alarms	• View: Displays list of processes with options to view details, view error log, view debug log, or delete logs. • Detailed Status: Displays process ID, type and name of each process. • Clear Missing Process Alarms: Allows an administrator to delete blinking (alarm) icons for failed processes.
Resources	• View • Detailed Status	• View: Displays list of resource names and types. Select a resource and click View Details to view additional information about the resource, including the processes used, the time, and the state of the process, such as unlocked. • Detailed Status: Displays each resource name and type.

Monitoring ERP 8.0 Enterprise Server Components

After you have configured OWKM, you are ready to use the PATROL console to monitor ERP 8.0 enterprise server components.

Monitoring ERP 8.0 Enterprise Server Components from the PATROL Console

You can monitor the components of each enterprise server that you have added for monitoring.

► To monitor ERP 8.0 enterprise server components from the PATROL console

1. In the PATROL console, double click the OW_SYSTEM icon.

2. Double click an enterprise server icon to view the components monitored by PATROL and OWKM.

3. Double click one of the following component icons to view its status:

   - CLI_Status

   - Detailed Status

   - Disks

   - Logs

   - Processes

   - Resources

Editing the Enterprise Server jde.ini File

If you have SAW administrator privileges, you can edit the enterprise server's jde.ini file from the PATROL console. Without administrator privileges, you are permitted only to view the file.

► To edit the enterprise server jde.ini file

1. On the PATROL console, double click an enterprise server icon.

2. Right click the INI icon and choose:

   - KM Commands

   - Edit

   The enterprise server's jde.ini file appears.

3. Edit and save the file.

Monitoring ERP 8.0 Enterprise Server Log Files

You can access and view the log files for each enterprise server that you monitor from the PATROL console. You can also sort and select the files using options in the ERP 8.0 Server Log Files form.

► To monitor ERP 8.0 enterprise server log files

1. On the PATROL console, double click an enterprise server icon.

2. Right click the Logs icon and choose:

   - KM Commands

   - View

   - All Server Logs

The ERP 8.0 Server Log Files form appears.

```
OneWorld SERVER Log Files on sundev1(Port 6012)                    _ □ ×

Log List List
|--Num--|---Size----|----Date------Time----|-----Log Name-----|-----Process-----|
    1.      153591    2000/06/14 14:09:49    jdedebug_13812.log   SAW
    2.      741497 *  2000/06/14 14:09:46    jdedebug_13809.log   jdequeue
    3.      741497 *  2000/06/14 14:09:46    jdedebug_13808.log   jdequeue
    4.      741497 *  2000/06/14 14:09:46    jdedebug_13807.log   jdequeue
    5.      741497 *  2000/06/14 14:09:46    jdedebug_13806.log   jdequeue
    6.     1506024 *  2000/06/14 14:04:43    jdedebug_13821.log   REPLICATION
    7.      715254 *  2000/06/14 14:04:41    jdedebug_13813.log   SECURITY
    8.         173    2000/06/14 14:04:25    jde_13821.log        REPLICATION
    9.      736141 *  2000/06/14 14:04:21    jdedebug_13792.log   SCHEDULER
   10.         481    2000/06/14 14:04:21    jde_13792.log        SCHEDULER
   11.         140    2000/06/14 14:04:17    jdedebug_13818.log   jdenet_n
   12.          95    2000/06/14 14:04:17    jde_13818.log        jdenet_n
   13.         177    2000/06/14 14:04:16    jde_13813.log        SECURITY
   14.         165    2000/06/14 14:04:14    jde_13812.log        SAW
   15.         139    2000/06/14 14:04:10    jdedebug_13811.log   jdenet_n
   16.          94    2000/06/14 14:04:10    jde_13811.log        jdenet_n
   17.         217    2000/06/14 14:04:10    jde_13809.log        jdequeue
   18.         217    2000/06/14 14:04:10    jde_13808.log        jdequeue
   19.         217    2000/06/14 14:04:10    jde_13807.log        jdequeue
   20.         217    2000/06/14 14:04:10    jde_13806.log        jdequeue

 ⊙ View Log              Number of Log Files: 24
 ○ Sort by Size          Total Disk Space:    5.80 MB
 ○ Sort by Date
 ○ Sort by Name          * = Log size exceeds maximum to retrieve (500MB)
 ○ Select by Number
 ○ Reverse Selections
 ○ Clear Selections
 ○ Delete Selected Logs


                        [ Execute ]   [ Close ]
```

3. To change the view of the list of logs, choose one of the options in the form:

- View Log

- Sort by Size

- Sort by Date

- Sort by Name

- Select by Number

- Reverse Selections

- Clear Selections

4. To view a log file, select the log, choose the View Log option, and click Execute.

    The ERP 8.0 web server log file or debug file appears in the PATROL console.

5. To search the file, right click inside the file, choose Find and enter a word to search for, such as "Error," and a direction to search, either up or down.

    Note: Remember that the maximum size of the file you can retrieve when you use this form is set when you configure OWKM. If the size of the file you want to retrieve exceeds this size, you will need to reconfigure OWKM and increase the value of this parameter.

Viewing Log Files for a ERP 8.0 Enterprise Server Process

You can monitor a ERP 8.0 enterprise server process and view the related log files.

▶ **To view log files for a ERP 8.0 enterprise server process**

1. In the PATROL console, choose a server whose processes you want to monitor and double click the icon.

2. Double click the Processes icon.

3. Right click a process and choose:

   - KM Commands

   - View

   - Log File or Debug Log File

   PATROL displays the contents of the log file or debug log file.

Deleting Log Files for a ERP 8.0 Enterprise Server Process

You can delete the log or debug log files for a ERP 8.0 enterprise server process. You should do this periodically to free up space on your disk.

▶ **To delete log files for a ERP 8.0 enterprise server process**

1. In the PATROL console, select a process whose log file you want to delete.

2. Right click the process icon and choose:

   - KM Commands

   - Delete

   - Log File or Debug Log File

3. In the Confirmation form, click Yes if you are sure you want to delete the file.

Viewing ERP 8.0 Enterprise Server Disk Information

You can view disk information for each server you monitor from the PATROL console.

▶ **To view ERP 8.0 enterprise server disk information**

1. On the PATROL console, double click the icon for the server whose disk information you want to view.

2. Right click a disk icon and choose:

   - KM Commands

   - View

   The ERP 8.0 Disks form appears.

3. Select the name of a disk and click the View Details button.

   The Disk Detailed Status form appears, containing the following disk information:

   - Host

   - Port

- Name

- Volume

- Used space

- Free space

- Percent used

- Mount Point

4. Click OK to exit the form.

> **Note:**
>
> Clicking Detailed Status after KM Commands launches the Detailed Status form, which allows you to view disk name, mount point, used space, free space, and percent used.

Changing Alarm Ranges

Some server component settings have alarm ranges that are adjustable by administrators. The alarm settings determine when a component will blink yellow, indicating a warning status, or blink red, indicating an alarm status. In order to change the alarm status, you must run the PATROL console as a developer, not as an operator.
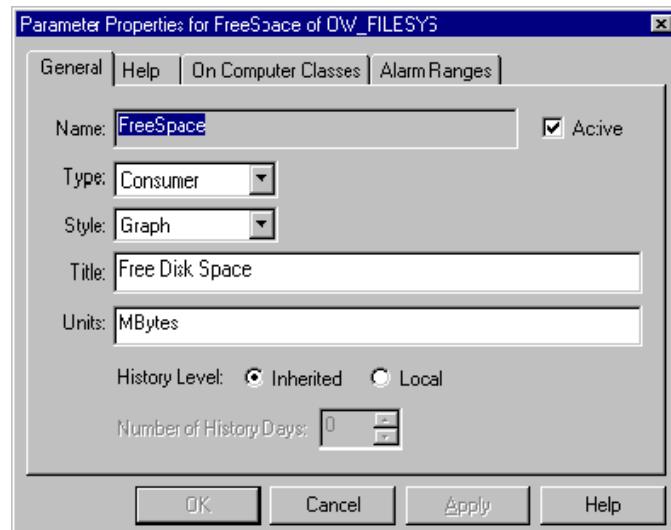
► **To change alarm ranges**

1. Log on to PATROL as a developer.

2. On the PATROL console, click the KM tab.

3. Expand the Knowledge Module and Application Classes nodes.

4. Choose an Application Class, such as OW_FILESYS, and expand the node.

5. Expand the Parameters node.

6. Double click a parameter.

The Parameter Properties form appears.

7. Click the Alarm Ranges tab.

8. Change the alarm ranges by making any necessary adjustments to the following controls:

    -   Border, which is the range of valid values for the alarm

    -   Alarm 1, which sets the range for a warning

    -   Alarm 2, which sets the range for an alarm

9. Click Apply.

You can use PATROL and OWKM to monitor web servers as well as enterprise servers. When you add a web server to be monitored, the PATROL console again displays the name of the server, and you can view the monitored components by clicking the server icon node or by double clicking the icon. The PATROL console again indicates a warning status for a component with a yellow, blinking icon, and an alarm status for a component with a red, blinking icon.

Monitoring ERP 8.0 Web Server Components

You can use BMC PATROL and OWKM to monitor web server components, including logging files, users, and connection pools.

Web Server Components Monitored by OWKM

The following table lists each monitored web server component and briefly describes what PATROL and OWKM monitor for each one:

Component	Explanation
CLI_Status	Indicates if the CLI is communicating with the server. If the status is OK, communication is occurring properly. If there is a CLI error or the server is down, the CLI_Status icon blinks to indicate the problem.
Detailed Status	Provides summary information for all the other components.
Server Status	Indicates whether the web server you are monitoring is running or not.
Connection Pools	Provides information on all the ERP 8.0 enterprise servers that users connect to through the web server.
Users	Displays information on all the users connected to the web server.

The PATROL console also displays subcomponents of the Connection Pools and Users components. You can expand the node for each of these components and double click a subcomponent icon to view more information about it. For example, if you expand the Connection Pools node, you reveal nodes for each each enterprise server that users connect to through the web server. If you double click an icon for a particular enterprise server, you can view detailed status information about the enterprise server, as well as data on the number of business functions running on that server.

Monitoring Web Servers Using KM Commands

The KM Commands menu item is a ERP 8.0-specific addition to PATROL features. The menu appears when you right click some icons in the PATROL console. KM Commands give you additional monitoring options for selected web server components.

Note:

You can choose any available web server component for monitoring by right clicking the server icon and choosing KM Commands and View.

The following table lists and summarizes the KM Commands options for each web server component in the PATROL console:

Component	KM Commands Parameters	Comments
Server	- View - Delete - Set Logging Flags - Refresh Parameters - Stop Monitoring - Detailed Status	- View: Allows user to choose an individual web server component and view information about it. - Delete: Allows user to delete the log file and debug log file for the monitored web server. - Setting Log Flags: Allows user to enable or disable logging for JAS and network files. - Refresh Parameters: Gets server information immediately rather than waiting the normal time of one minute. - Stop Monitoring: Deletes the server from the list of servers to be monitored by PATROL and OWKM. - Detailed Status: Displays information on Users and Connection Pools components in one form.
Connection Pools	- View - Detailed Status	- View: Displays list of enterprise servers connected to the web server. Select an enterprise server and click View Details for a list of all business functions running on the enterprise server. - Detailed Status: Displays in one form business function data for all enterprise servers connected to the web server.
Users	- View - Detailed Status	- View: Displays list of users logged on to the web server, by user ID and machine name. Select a user and click View Details for additional user data. - Detailed Status: Displays in one form data about each user logged on to the web server, including user ID, web server host, enterprise server host, environment, log-in time, browser name, and machine name.

Monitoring ERP 8.0 Web Server Components from the PATROL Console

You can monitor the components of each web server that you have added for monitoring.

▶ **To monitor ERP 8.0 web server components from the PATROL console**

1. In the PATROL console, double click the OW_SYSTEM icon.

2. Double click a web server icon to view the components monitored by PATROL and OWKM.

3. Double click one of the following component icons to view its status:

   - CLI_Status

- Connection Pools

- Detailed Status

- Server Status

- Users

Monitoring ERP 8.0 Web Server Log Files

There is not a separate component icon for web server logs in the PATROL console. You access the files from the web server icon.

► To monitor ERP 8.0 web server log files

1. In the PATROL console, right click the server icon and choose:

   - KM Commands

   - View

   - Logs

   - Log File or Debug File

   The ERP 8.0 web server log file or debug file appears in the PATROL console.

2. To search the file, right click inside the file, choose Find and enter a word to search for, such as "Error," and a direction to search, either up or down.

Deleting ERP 8.0 Web Server Log Files

You can delete ERP 8.0 web server log and debug logs. Again, you access the command to delete the files from the web server icon.

► To delete ERP 8.0 web server log files

1. In the PATROL console, right click the server icon and choose:

   - KM Commands

   - Delete

   - Log File or Debug File

2. In the Confirmation form, click Yes if you are sure you want to delete the file.

Setting Logging Flags

The Set Logging Flags parameter allows you to enable or disable the log files for the JAS server and for the network. Note that you cannot view the web network files from the PATROL console. When you view the log files for the server, the PATROL console simply notifies you that the the network trace is turned on.

► To set logging flags

1. In the PATROL console, right click the server icon and choose:

   - KM Commands

   - Set Logging Flags

2. In the Set Web Log Flags form, choose the following options if you want to enable JAS and network server logging:

- Enable Java Server Log

- Enable Net Server Log

3. Click OK.

An Information form notifies you whether or not the flag was set successfully.

Monitoring ERP 8.0 Web Server Users

You can monitor the users who are currently logged on to ERP 8.0 web servers. You can select an individual user and view data about that user, or you can view, in a single form, data about all the logged-on users.

► To monitor ERP 8.0 web server users

1. In the PATROL console, double click the web server icon.

2. Right click the Users icon and choose:

- KM Commands

- View

The ERP 8.0 Web Users form appears.

3. Select a user and click the View Details button.

The User Detailed Status form appears.

```
User Detailed Status                                    _ □ ×

Web User Details:

User Id:          JT5986593
Web Server Host:  owweb2
Web Server Port:  80
Session Id:       30662829733666651904
Envinronment:     PDEVNIS2
Computer Name:    trimblej.jdedwards.com
Display Type:     Portal
Browser Name:     Mozilla/4.0 (compatible; MSIE 5.0; Win32)
Login Time:       Wed Jun 14 12:06:57 2000
Idle Time:        15 hrs 53 mins 8 secs

User Connections

OneWorld Host    Port   Kernel PID
---------------- -----  ----------
OWNTS1           6005   621

                        [ OK ]
```

4. Click OK.

To view in a single form data on all of the users, choose KM Commands and Detailed Status.

Monitoring ERP 8.0 Web Server Connection Pools

You can monitor the connection pools of enterprise servers that are connected to the ERP 8.0 web server. You can select an individual enterprise server and view business data about business functions running on that server, or you can view, in a single form, business function data about all the enterprise servers connected to the ERP 8.0 web server.

You monitor the following types of information about enterprise servers connected to web servers:

- Names of business functions that have run on an enterprise server during a server session
- Minimum time required to run a business function
- Maximum time required to run a business function
- Average time required to run a business function
- Number of timeouts that occurred during the running of a business function
- Number of system errors that occurred during the running of a business function
- Number of application errors that occurred during the running of a business function
- Number of times a business function was called during a server session

▶ **To monitor ERP 8.0 web server connection pools**

1. In the PATROL console, double click the web server icon.
2. Right click the Connection Pools icon and choose:
   - KM Commands
   - View

   The ERP 8.0 Connection Pools form appears

3. Select an enterprise server and click the View Details button.

   The Connection Pools Detailed Status form appears.

4. Click OK.

   To view in a single form data on all the enterprise servers connected to the ERP 8.0 web server, choose KM commands and Detailed Status.
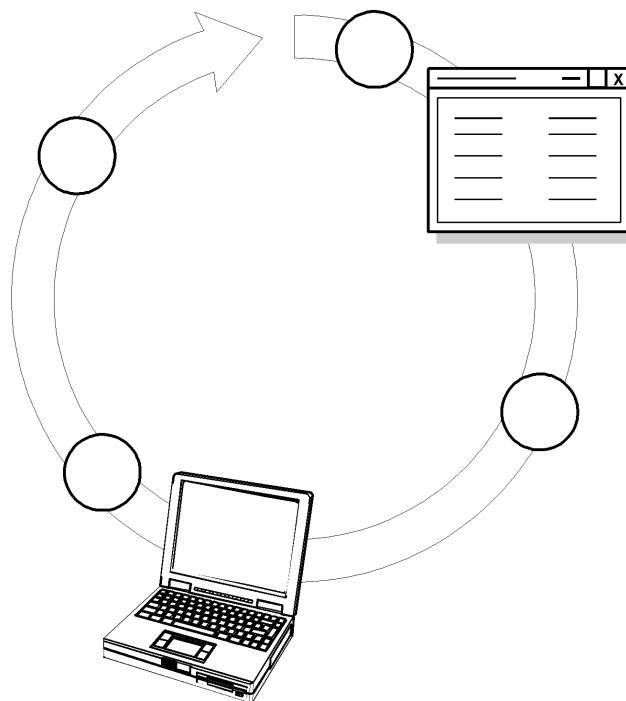
ERP 8.0 on Windows NT Terminal Server Edition

Windows NT Terminal Server Edition (TSE) provides an excellent solution for ERP 8.0 in a WAN environment. TSE allows you to set up multiple terminal server client machines that need only contain the TSE client software. You can use less powerful machines to function as terminal server clients. These clients connect to a machine set up with TSE software. Multiple users can simultaneously connect to the same terminal server to run ERP 8.0.

Understanding Windows NT Terminal Server Edition

Windows NT Terminal Server Edition (TSE) is a multiuser extension to the Microsoft Windows NT family of operating systems. TSE allows users to share an application that resides on the terminal server. The terminal server performs all the processing for an application and then sends a picture of the screen to the client terminal. Only keystrokes and mouse movement occur at the terminal. These movement commands travel through the network to the server, which returns the modified screen to the terminal.

The following provides an example of the TSE process flow:

Step 1: ERP 8.0 client applications execute on terminal server.

Step 2: The terminal server sends the video for the user interface across any connection.
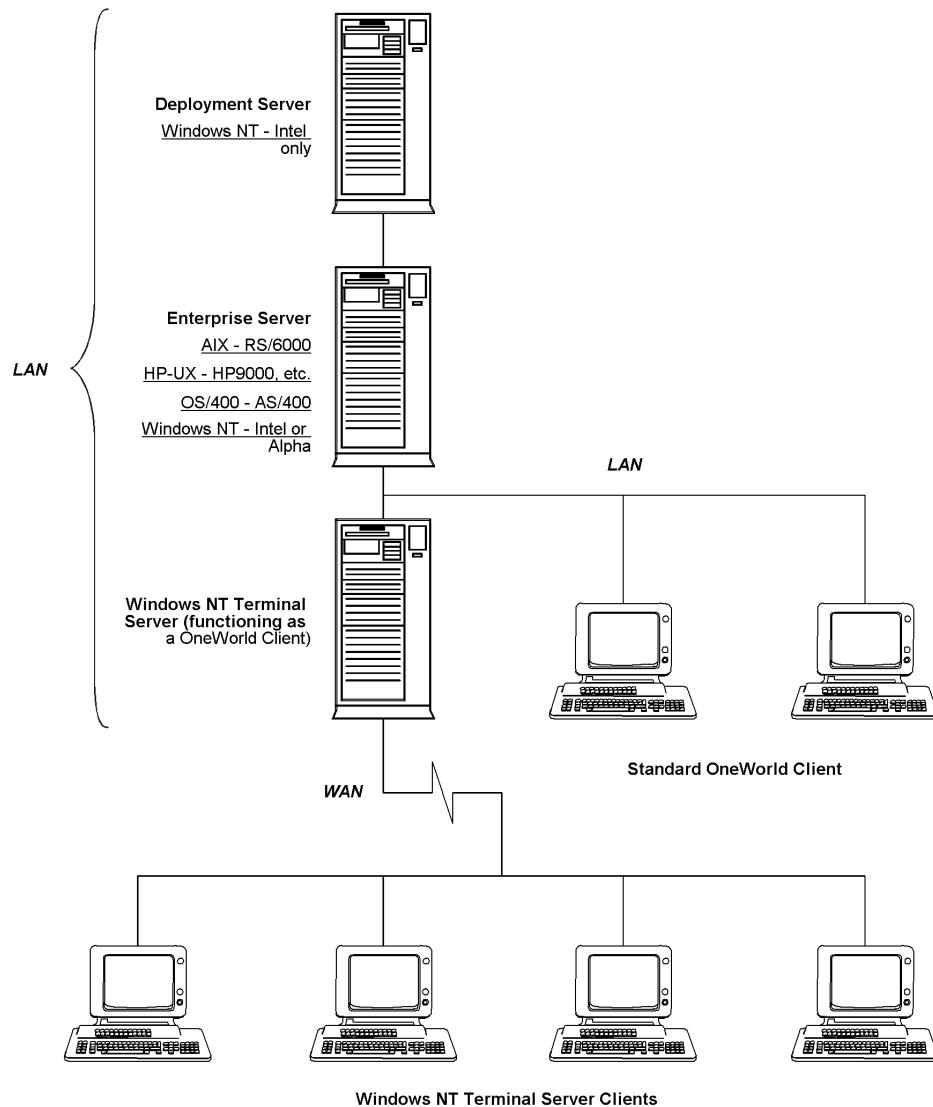
Step 3: The terminal server client displays the user interface.

Step 4: The terminal server client sends actions, such as keystrokes and mouse movement, back to the terminal server where processing occurs.

By sending only the information necessary to re-create the screen and convey mouse and keyboard events, TSE provides LAN-like performance over WAN and dialed connections.

TSE allows you to set up multiple users to work with a single client installation of ERP 8.0. By sharing a single copy of ERP 8.0 on the terminal server, you reduce the costs of deployment and administration.

The following illustration provides an example of a ERP 8.0 configuration with a terminal server:

Note:

Sun-Solaris can be added to the list of enterprise servers that can run in a ERP 8.0 configuration with a terminal server.

Incorporating Citrix MetaFrame with TSE

TSE provides multiuser technology that uses a presentation protocol called Remote Desktop Protocol (RDP). RDP, based on the International Telecommunications Union T.120 protocol, is a viable option if you plan to use only Win16/Win32 clients in an uncomplicated configuration.

If your network comprises multiple platforms and requires optimum performance, Citrix offers a product called Citrix MetaFrame with multiuser technology that provides additional functionality to TSE, such as load-balancing and the support of more client platforms. MetaFrame utilizes the Independent Computing Architecture (ICA) presentation protocol on which Citrix based WinFrame, a successful multiuser product for Windows NT 3.51.

Note:

If you start ERP 8.0 as a specified application through ICA, you cannot view the jde.ini, jde.log, and jdedebug.log files.

The following table lists the capabilities of TSE RDP and MetaFrame:

Capability	TSE RDP	MetaFrame
Client Platforms	TSE client software runs on the following platforms: • Windows 16-bit • Windows 32-bit • Some RDP-equipped Windows terminals • Windows CE	MetaFrame runs on the following platforms: • DOS • Windows 16-bit • Windows 32-bit • X-Term • MacIntosh • Solaris • Windows CE • Some ICA-equipped network computers • Some Internet browsers as a plug-in
Network Topologies	TSE RDP supports the TCP/IP standard.	MetaFrame supports the following standards: • IPX • SPX • PPP • NetBIOS
Load-balancing	Windows 2000 supports load balancing.	You can purchase an option for MetaFrame that provides load-balancing capabilities.
Encryption	N/A	You can purchase an option for MetaFrame that provides the encryption of ICA traffic.
Capability	**TSE RDP**	**MetaFrame**
CCPDD:cut/copy/paste/drag/drop	Windows 2000 supports cut, copy, paste, drag, and drop.	MetaFrame allows CCPDD between the session window and the underlying Windows desktop.
Device Mapping	TSE RDP allows you to map local devices for printing through a work-around.	MetaFrame allows you to map devices local to the TSE client from the terminal server. For example, you can locally map hard drives, fax modems, and printers.

| Session Shadowing | Windows 2000 supports remote control. | With MetaFrame loaded, TSE supports an administration tool called session shadowing. Session shadowing helps administrators audit remote sessions. You might also use session shadowing for video conferencing and in a support desk role. |

TSE Restrictions in Multiuser Mode

Starting with version B73.2.1 SP9, ERP 8.0 is "TSE-aware." TSE-aware means that when you deploy ERP 8.0 as a client on a terminal server, ERP 8.0 automatically recognizes the terminal server and configures itself to run in multiuser mode. Because of the configuration required by multiuser mode, the following restrictions apply to ERP 8.0 terminal server users:

- Disabled development with Form Design Aid, Report Design Aid, and Table Design Aid, including Object Management Workbench check-in and check-out capabilities

Note:

The restriction on development does not prevent new versions of existing applications, but only the modification of current applications and the creation of new applications. The reason for this restriction is that Microsoft recommends against using Visual C++ remotely through TSE under any circumstances. Also, a complete set of development specifications (500+ MB) defeats the purpose of a thin client.

- Disabled local processing for batch applications

  All batch applications process on a separate batch server to avoid an impact to performance on the terminal server.

- Disabled Just-In-Time-Installation (JITI)

  Because you deploy a full client package to the terminal server, JITI is not recommended. For more information, see "Specification Files are Locked" in the chapter "Troubleshooting ERP 8.0 on Windows NT Terminal Server Edition" in this guide.

- Disabled intensive specification file access

  Applications that intensively access specification files, such as the Universal Table Browser application, are not active due to the strain put on the terminal server when the application retrieves data. Also, file level locking could prevent access to data in the specification files for other users.

A standard ERP 8.0 configuration and a ERP 8.0 terminal server configuration are not mutually exclusive within an enterprise. You can mix a standard configuration with a terminal server configuration to maximize your overall ERP 8.0 performance. For example, you can use a standard ERP 8.0 configuration over a LAN and use a terminal server configuration to support remote sites across a WAN.

Hardware Requirements for the Terminal Server

See the chapter *ERP 8.0 Hardware and Software Requirements* in the *ERP 8.0 Installation Guide* for complete information about the hardware requirements for the terminal server.

Hardware Requirements for the Terminal Server Client

See the chapter *ERP 8.0 Hardware and Software Requirements* in the *ERP 8.0 Installation Guide* for complete information about the hardware requirements for the terminal server client.

Network Considerations

The terminal server must reside on the same local area network (LAN) as the enterprise server or database server, or both. Include one normal ERP 8.0 client on the LAN to verify ERP 8.0 performance and function. Normal ERP 8.0 LAN requirements apply.

For a wide area network (WAN), you must use a 56 KB or faster line.

Performance Considerations

When you add any ICA session, change the "Window Colors" display properties to 16 color mode or to the lowest setting that your software and hardware allow. You can access display properties from the Control Panel or by right-clicking on your Windows desktop.

Also, for your Citrix setup, you need to choose the "Compress data stream" and "Cache bitmaps to disk" options. See the appropriate Citrix documentation for more information about how to modify these settings.

Setting Up ERP 8.0 on the Terminal Server

Because ERP 8.0 is "TSE-aware," running ERP 8.0 on a terminal server is almost identical to running a standard ERP 8.0 client. "TSE-aware" means that when ERP 8.0 performs certain processes, such as creating log files and running UBEs, ERP 8.0 functions designed specifically for TSE check whether ERP 8.0 resides on a terminal server. If these functions detect a terminal server, ERP 8.0 automatically switches to multiuser mode. In multiuser mode, ERP 8.0 processes data while simultaneously protecting data integrity and maintaining performance on the terminal server. Multiuser mode also masks any of the multiuser activity from a user so that a terminal server session of ERP 8.0 looks no different from a standard ERP 8.0 client session.

Before you can use ERP 8.0 on a terminal server, you must perform certain setup steps. The following list defines these steps:

► To set up ERP 8.0 on the Terminal Server

1. Install Windows NT Terminal Server Edition on the machine that you will use as your terminal server. Refer to the Microsoft documentation for information about how to set up Windows NT Terminal Server edition software.

2. Install Microsoft Terminal Server Client software onto the machines that you will use as terminal server clients. You can connect to the terminal server from the Terminal Server Client option on the Programs menu. This file also resides in the Terminal Server Client subdirectory in the Program Files directory. Refer to Microsoft documentation for information about how to set up Terminal Server Client software.

3. Depending on the type of database you use, you might need to install software so that your client can properly connect with the server where the database resides.

Install the following software on the terminal server as necessary. See *ERP 8.0 Hardware and Software Requirements* in the *ERP 8.0 Installation Guide* for complete information about any additional requirements or service packs needed to run each of the software packages listed:

- Oracle for Windows NT
- SQL Server client
- Client Access
- DB2 Connect

4. Install a *full* package of ERP 8.0. You need to install a full package because ERP 8.0 on the terminal server is multiuser. If you install a partial package, multiple users will simultaneously experience Just-In-Time-Installation, which will negatively impact performance on the terminal server.

After you perform these steps, you should be able to successfully run ERP 8.0 from terminal server client machines.

Troubleshooting ERP 8.0 on Windows NT Terminal Server Edition

This chapter provides details of the following situations that can exist when you run ERP 8.0 on a Microsoft Windows NT Terminal Server Edition (TSE):

See Also

- ❑ Microsoft Windows NT Terminal Server Edition installation documentation
- ❑ *ERP 8.0 on Windows NT Terminal Server Edition* in the *Server and Workstation Administration Guide*

ERP 8.0 UBE Output Security on TSE

Issue:

ERP 8.0 TSE user send PDF files by default from the enterprise server to the their local \b7\PrintQueue directories using the Work with Servers (P986116) application. Users choose View PDF from the row exit menu of the Submitted Job Search form. Because the files are saved to a user's local PrintQueue directory, another user can view the PDF file in Windows NT Explorer or in Adobe Acrobat.

Resolution

You can relocate the PrintQueue directory by adding the following section to the jde.ini file:

```
[NETWORK SETTINGS]
OutputDirectory=C:\WTSRV\Profiles\USERNAME\Windows
```

Server administrators need to make the jde.ini file modification of each user on each TSE so that the PDF output points to each individual's user profiles directory. With the PrintQueue directory located in the user profiles directory, the PDF files are protected by Windows security. Only server and system administrators have access to the files.

Submit UBE Locally to TSE

Issue:

Users cannot locally submit UBEs to run on the TSE because of resource constraints such as CPU power.

Resolution:

Users can run UBEs on a dedicated TSE or during hours when no other ERP 8.0 users are using the machine. Complete the following task to submit a UBE locally and run it on the TSE:

▶ **To submit a UBE locally and run it on the TSE**

1. On the System Administration Tools menu (GH9011), choose Logical Data Sources (P986115).

2. In the Logical Data Sources form, choose the TSE machine name with System as the data source and click Select.

3. In the Work with Data Sources form, click Add.

4. In the Data Source Revisions form, complete the following fields:

   - Data Source User (enter DB, for Local Data Source)

   - Data Source Name (enter TSE Local)

   - Data Source Type (enter A, for Access)

   - DLL Name (enter JDBODBC.DLL)

   - Database Name (enter OneWorld Local)

   - Server Name (enter LOCAL)

   - Platform (enter LOCAL)

5. When you run the UBE on the TSE, in the Work with Batch Versions from, choose the report you want to run and click Select.

6. In the menu bar of the Version Prompting form, choose Form and Advanced.

7. In the Advanced Version Prompting form, choose the Override Location option and click OK.

8. In the Version Prompting form, choose the Data Selection option and click Submit.

9. In the JDE Data Sources form, choose TSE Local as the data source and click Select.

Import/Export between ERP 8.0 and Microsoft Excel

Issue:

Importing a Microsoft Excel spreadsheet into a ERP 8.0 grid intermittently fails when users are running TSE.

Resolution:

J.D. Edwards recommends using Microsoft Office 2000 on TSE. To install Microsoft Office 2000 in a TSE environment, please access the following URL: http://www.microsft.com/Office/ORK/2000/Two/3053.htm. You install a single of Microsoft Office 200 on the TSE. Multiple users then connect to the server and run Microsoft office from the server.

Specification Files Are Locked

Issue:

In the following circumstances, ERP 8.0 users get a message box that states that a specification file is currently unavailable:

- When another ERP 8.0 session on the same TSE machine performs a data dictionary Just-In-Time-Installation (JITI).

- When another ERP 8.0 session receives a TSE run-time error dialog box. Generally, this type of error occurs when a memory violation occurs.

In both of the above cases, the specification file or files are locked. The specification files will be unlocked when either the TSE completes the JITI process or a user closes the TSE run-time error dialog box.

Resolution:

To prevent the specification files from being locked when ERP 8.0 performs a JITI, reduce the frequency that ERP 8.0 performs JITIs. Complete the task appropriate to your release number to change the frequency of JITIs:

- Reduce JITI frequency (B73.2 and B73.3)

- Reduce JITI frequency (B73.3.1, B73.3.2, and B73.3.3)

▶ To reduce JITI frequency (B73.2 and B73.3)

1. On a non-TSE workstation, create the business function B98CRTGL.

2. Go to Design and type GenGlbltblSpec in the Function Name field.

3. Choose the row and then from the Row menu, choose Parameters.

4. Type D9800330, click Find, and then click Select.

5. Click OK.

6. On the Business Function Design form, click OK.

7. Copy the B98CRTGL.c to the ..\b7\PRODB732\source directory and B98CRTGL.h to the ..\b7\PRODB732\include directory.

8. On the Business Function Source Librarian form, click the Build button.

    Verify that the project configuration in BusBuild is Optimize.

9. Create a report (UBE) without a business view. On this report, create a group section that calls B98CRTGL (business function created in step 1).

    Note:

    Parameter passing is not necessary.

10. Create a version of the UBE and then run the version locally on the workstation. Copy the full glbltbl.ddb and glbltbl.xdb to the TSE machines.

    The UBE should take less than an hour, during which time, you will see that the JITI process is running on the machine. The UBE generates the full GLBLTBL specification in the ..\b7\PRODB732\spec directory.

► **To reduce JITI frequency (B73.3.1, B73.3.2, and B73.3.3)**

Run the Generate global table spec (R98CRTGL) batch application on a non-TSE ERP 8.0 client to generate full GLBLTBL specification files. Copy the full glbltbl.ddb and glbltbl.xdb to the TSE machines.

User Cannot Restart ERP 8.0

Issue:

Occasionally, when a memory violation occurs in a ERP 8.0 TSE session, the terminal server might prevent the user from restarting ERP 8.0. The administrator must then sign onto the terminal server and end the OEXPLORER.exe process for the user from the Task Manager. After the administrator ends this process, the user can sign on to ERP 8.0 again.

Resolution:

When a run-time exception occurs, ERP 8.0 should immediately exit. To instruct ERP 8.0 to immediately exit in this situation, set the following jde.ini setting to False:

```
 [INTERACTIVE RUNTIME]

EXCEPTION_Enabled=False
```

Issue:

Logging off versus disconnecting.

Resolution:

Users should always log off their TSE session rather than disconnecting. Logging off shuts down all processes completely for the user.

Shortcuts Do Not Work in E-Mail Messages

Issue:

Workflow provides the ability to send shortcuts to ERP 8.0 applications via e-mail messages. This function does not work when the e-mail application, such as Microsoft Outlook, is not currently active on the terminal server. When the e-mail application invokes the shortcut, the operating system attempts to launch the shortcut on the local machine and not on the terminal server.

Resolution:

Run the e-mail application on the same terminal server machine as ERP 8.0 resides.

Data Selection and Sequencing Criteria Lost

Issue:

The following situation occurs when two or more users are signed on to the same terminal server using the same pathcode.

The first user submits a batch application from Batch Versions, changes the data selection criteria, and then stops at the printer screen. The second user then goes into Batch Versions to submit the same version of the batch application, changes the data selection criteria, and then stops at the printer screen. When the users click OK to send the batch application to the enterprise server for processing, the data selection criteria for the second user overrides the selection criteria for the first user.

Resolution:

A modification to batch processing in ERP 8.0 now saves data selection and sequencing criteria in memory rather than in specification files.

Run-Time Error Occurs During Server Connection Test

Issue:

The Server Administration Workbench (SAW) application receives a run-time error when SAW performs a server connection test.

Resolution:

This situation occurs when the user who performs the connection test does not possess the authority to access the pinging mechanism on the target machine.

ERP 8.0 Development Tools Are Disabled

Issue:

ERP 8.0 development tools are disabled on the terminal server.

Resolution:

Currently, J.D. Edwards instructs customers to perform all development on non-TSE machines.

Users Experience Problems Accessing ERP 8.0

Issue:

Only administrators can run ERP 8.0.

Resolution:

This situation is a result of how ERP 8.0 was installed on the terminal server.

Administrators should use the Add/Remove Programs application on the Control Panel to install ERP 8.0 on the terminal server. During installation, make sure that you choose the "All users begin with common application settings" option on the Change User Option dialog box. This option ensures that the terminal server maintains ERP 8.0 specific files, such as the jde.ini file, across user profiles.

Log Path is Incorrect

Issue:

The log path in the jde.ini for individual users is incorrect.

Resolution:

The ERP 8.0 installation program sets the WTSLogs setting to False. Users should change this setting to True after ERP 8.0 installation and before any users run ERP 8.0.

When the WTSLogs setting is True, the output log directories for each user point to the home directory of the user rather than to the root directory of the drive. The output log directories settings are also defined in the jde.ini file.

Shortcut Path is Incorrect

Issue:

The shortcut path on the terminal server is incorrect. This situation occurs when the terminal server uses the server-based profiles.

Resolution:

The resolution involves "Shortcuts Created Under TSE 4.0 Resolve to UNC Paths." For more information, see the following web address:

- http://support.microsoft.com/support/kb/articles/Q195/8/87.ASP

Only One User Can Log in to ERP 8.0

Issue:

The main ERP 8.0 window fails to appear after entering the password for all other users.

Resolution:

For B73.3.2 with Service Pack 10 or greater, place the ERP 8.0 command line switch "/NoLogo", located in the ERP 8.0 shortcuts, on the desktop and on the Start menu if not already present. Separated by a space, append the text to the end of the line in the "Target" edit box of the shortcut properties window. Do not include the quotation marks. This will prevent the display of the splash screen. There is no resolution for ERP 8.0 version B73.3.2 Service Pack 9.

ERP 8.0 on a Cluster

High availability clusters provide redundancy of software and hardware so that a single point of failure will not interrupt service. If a failure occurs, the clustering software automatically detects the problem and shifts to an alternate machine without ending processes and interrupting your enterprise.

Clustering allows ERP 8.0 processes running on a machine that fails to continue running without interruption on a second machine. The second machine has a setup that supports the given processes. Essentially, ERP 8.0 "moves" to the alternate machine without requiring you to restart a process that was active on the machine that failed.

Note:

Each node in the cluster must have the appropriate software and hardware to ensure that processing successfully moves from server to server.

Make sure you understand the clustering software and the tasks necessary to implement the software on a given platform.

Hp-UX Clustering

Hewlett-Packard provides two mutually exclusive software products to manage high availability clusters:

- Hewlett-Packard Multi-Computer/ServiceGuard (MC/ServiceGuard)
- Hewlett-Packard Multi-Computer/LockManager (MC/LockManager)

  You must use MC/LockManager when you use Oracle Parallel Server (OPS).

You will set up only one of these products for your HP-UX cluster.

ERP 8.0 requires a named IP address for workstations to connect with a server. With the Hewlett-Packard clustering software, you can assign a "floating" IP address that can move from node to node within the cluster. You should enter this IP address into the WINS or DNS database so that workstations can access the address. If your enterprise servers are not using DNS to resolve host names, you must also add the floating IP address to the /etc/hosts file on each node in the cluster where ERP 8.0 might run.

Note:

If you do not assign a floating IP address, then whenever ERP 8.0 moves to another node in the cluster, the workstations will be unable to connect with the servers.

Introduction

Hewlett Packard (HP) provides two mutually exclusive software products to manage high availability clusters:

- Multi–Computer/ServiceGuard (MC/ServiceGuard)

- Multi–Computer/LockManager (MC/LockManager)

You must use MC/LockManager when you use Oracle Parallel Server (OPS).

ERP 8.0 requires a named IP address for workstations to connect with a server. With the HP clustering software, you can assign a "floating" IP address that can move from node to node within the cluster. You should enter this IP address into the WINS or DNS database so workstations can access the address. Also, you must add the floating IP address to the */etc/hosts* file on each node in the cluster where ERP 8.0 might run.

If you do not assign a floating IP address, you will need to change the configuration of each workstation whenever ERP 8.0 moves to another node in the cluster.

Configuring Oracle Parallel Server (OPS)

Oracle Parallel Server (OPS) allows concurrent database access from multiple nodes in a cluster. If you use OPS, you must install MC/LockManager, not MC/ServiceGuard. If you are using MC/ServiceGuard, complete the task titled "Setting Up an Oracle Package."

► **To set up Oracle Parallel Server and MC/LockManager**

This task describes how to set up OPS and MC/LockManager. For more information, refer to the Hewlett Packard documentation on setting up OPS and MC/LockManager.

1. Install Oracle client software on each node in the cluster where it might run. The ERP 8.0 database should be created on shared disks, or on a machine outside the cluster, so that it can be accessed from multiple nodes.

2. Create a package in MC/ServiceGuard with no services.

   This package should be set up with an associated IP address so that it can be reached from any node where it might run. This package should also specify the shared volume group on which the ERP 8.0 database will reside.

3. Edit the package control script to add the Oracle startup and shutdown commands. The following code sample provides an example of the *customer_defined_run_cmds* function from a package control script:

```
        function customer_defined_run_cmds
{
# ADD customer defined run commands.
        export ORACLE_HOME=/u01/app/oracle/product/8.0.5
        export ORACLE_SID=jde1
        export ORAENV_ASK=NO
        . $ORACLE_HOME/bin/oraenv
        su oracle -c '$ORACLE_HOME/bin/lsnrctl start'
        su oracle -c '$ORACLE_HOME/bin/svrmgrl' <<EOF1
        connect internal
        startup
        exit
EOF1
        test_return 52
}
```

4. You can use these same steps to enter the Oracle shutdown commands into the customer_defined_halt_commands section of the package control script.

Setting Up an Oracle Package for MC/ServiceGuard

If you use MC/ServiceGuard, you should set up a package for Oracle. An Oracle package allows the Oracle processes to move from one node to another when a node fails or during scheduled maintenance.

You do not need to perform this step if you use MC/LockManager.

▶ **To set up an Oracle package for MC/ServiceGuard**

1. Install Oracle on each node in the cluster.

   Create the ERP 8.0 database on shareable disks so that multiple nodes can access the database.

2. Create a package in MC/ServiceGuard with no services.

   You should set up this package with an IP address so that any node on the cluster can access and run the package. This package should also specify the shared volume group where the ERP 8.0 database will reside.

3. Edit the package control script to add the Oracle startup and shutdown commands.

   The following code sample provides an example of the customer_defined_run_cmds function from a package control script:

```
Function customer_defined_run_cmds

{

# ADD cusomter defined run commands.

Export ORRACLE_HOME=/u01/app/oracle/product/8.0.5

Export ORACLE_SID=jde1

Export ORAENV_ASK=NO

.$ORACLE_HOME/bin/oraenv

su oracle '$ORACLE_HOME/bin/svrmgr1'<<EOF1

connect internal

startup

exit

EAOF1

Test return 52

}
```

   You can use the same steps to enter the Oracle shutdown commands into the customer_defined_halt_commands section of the package control script.

Setting Up a ERP 8.0 Package

The standard ERP 8.0 enterprise server software requires minimal modifications to function in a cluster. These modifications include the following items:

- Enterprise server jde.ini

- owenv script file in the $SYSTEM/bin32 directory

- Package control script

► To set up a ERP 8.0 package for a cluster

1. In the server jde.ini file, locate the [CLUSTER] section, then change the following setting:

```
[CLUSTER]
PrimaryNode=Package IP name
```

Variable Value	Description
ERP 8.0 Package IP Name	This value represents name given to the IP address that is associated with the ERP 8.0 package that you are creating.

2. Change the owenv script file in the $SYSTEM/bin32 directory. The *owenv* script file contains the settings for various UNIX environment variables required by ERP 8.0.

3. Create a package using SAM.

Note:

You can also use the command line to create a package. See HP documentation for details.

For ERP 8.0, set up a package with an associated floating IP address, but with *no services*. This setup is necessary because the cluster manager needs to start services without environment variables under the root user. To run properly, ERP 8.0 requires you to set environment variables. This setup also allows you to utilize the ERP 8.0 installation defaults and the start and end scripts provided by J.D. Edwards.

Depending on the needs of your enterprise, you might want to install ERP 8.0 on a shared volume group. This setup allows multiple nodes in a cluster to access a single version of ERP 8.0, but only one node at a time. This setup also allows you to easily update ERP 8.0 through server package installations.

4. Using SAM, modify the package control script on each node to start and stop ERP 8.0.

Note:

You might need to vary the control scripts for different nodes in the cluster to configure different volume group names or path names. In this case, you must edit the scripts on each node individually instead of using SAM.

The following code sample provides an example of the *customer_defined_run_cmds* function from a package control script:

```
function customer_defined_run_cmds

{

# ADD customer defined run commands

# wait 60 seconds for Oracle to come up

sleep 60

. /home/jde/owenv

su jde << EOF1

mv $OWHOME/log/jde*.log $OWHOME/log/oldlogs

cd $SYSTEM/bin32

RunOneWorld.sh

EOF1

test_return 51

}
```

The following code sample provides an example of the customer_defined_halt_cmds function from a package control script:

```
function customer_defined_halt_cmds

{

# ADD customer defined halt commands.

. /home/jde/owenv

su jde << EOF2

cd $SYSTEM/bin32

EndOneWorld.sh

sleep 15

rmics.sh

EOF2

test_return 52

}
```

The following list provides explanations for these functions:

- sleep 60

  The "run" function first waits 60 seconds for Oracle processes to start. HP states that you should set the *PKG_SWITCHING_ENABLED* parameter to *NO* for applications that access OPS. This setting prevents these applications from starting before OPS is active. If you use the sleep command in your script, you do not need to modify this setting. You can remove the sleep command from the script when you use the control script for a backup node with OPS running.

  . /home/jde/owenv

  This line runs the *owenv* script provided by J.D. Edwards to set up UNIX environment variables. The *owenv* script resides in the *$SYSTEM/bin32* directory. You must edit this script to ensure that the correct setup exists for all

necessary environment variables for ERP 8.0 and Oracle. In these examples, the script has been moved to the home directory of the jde user. The script might need to move to the home directory if you use a different SID to access Oracle from different nodes.

su jde

This line switches to the user ID that owns the ERP 8.0 processes. If you omit this line, the root user owns the ERP 8.0 processes.

mv $OWHOME/log/jde*.log $OWHOME/log/oldlogs

This line moves any logs in the ERP 8.0 log directory to a backup log directory, which you create. This command is particularly important if your ERP 8.0 instance resides on a shared disk where a "failed over" instance of ERP 8.0 will use the same physical disk space as the failed instance. You might consider adding the command *rm $OWHOME/log/oldlogs/** before this line to clean out any older versions of ERP 8.0 logs.

RunOneWorld.sh; EndOneWorld.sh

These are the standard start and stop scripts that J.D. Edwards provides for the UNIX enterprise server.

The directory that contains the package control script also contains the *control.sh.log* file, which contains the results of starting and stopping a package. This file is the first place to check if problems arise when you start or stop a package. In particular, it will contain any output or error messages from the customer–defined commands you might enter.

Maintaining Multiple Instances of ERP 8.0

There are several considerations when you run multiple instances of ERP 8.0 in a clustered environment. Even though each instance might begin on a separate node, a situation might arise when multiple instances need to run on the same node. When this happens, communication to each ERP 8.0 instance must occur on a different port number, or service name, and each instance must use a different range of IPC keys. The following parameters in the jde.ini file control these settings:

```
[JDENET]
serviceNameListen=Service Name or Port Number
serviceNameConnect=Service Name or Port Number
[JDEIPC]
startIPCKeyValue=Numeric Value
```

Variable Value	Description
Service Name or Port Number	The service name parameters can use an actual port number or the name of a service that you enter into the /etc/services file.
Numeric Value	The IPC key values should differ by at least 1000 between any two ERP 8.0 instances.

Troubleshooting HP-UX Clustering

Problems with Oracle Parallel Server (OPS)

Complete the following steps if you experience problems with OPS:

- Verify that the cluster software is operational. OPS requires the cluster software to start before OPS can start.

- Verify that DLM is enabled in the DLM configuration. Oracle Group Management Services (OGMS) will not start if DLM is disabled.

ERP 8.0 Does Not Start

Do the following steps if ERP 8.0 fails to start:

- When you start ERP 8.0 using the package control script, first check the control script log for errors. Look for errors in the script that occur before the *RunOneWorld.sh* command.

- Check the *OneWorldlog* directory for log files. If none reside, verify that the ERP 8.0 processes exist in the proper directory and that you correctly set the *$SYSTEM* environment variable.

- If the log file names are in all capital letters, the *$JDE_BASE* environment variable might be set incorrectly. If you incorrectly set this environment variable, the process will be unable to locate the *jde.ini* file.

- Verify whether an entry exists in the */etc/hosts* table for the floating IP address. If no entry exists, *jdenet_n* will start, but all other processes will return the following message in the log: *239–gethostbyname returned Connection refused.*

- If no entry for the floating IP address exists that the workstation can reference, it will fail to connect and return the following message in the log: *11001–gethostbyname returned 11001 (WSAHOST_NOT_FOUND): The host was not found.*

Problem with Workstation Connection to a ERP 8.0 Server; Endnet Works Improperly on the Server

You must associate an IP address to the ERP 8.0 package. The package must be operational for the IP address to be active. Otherwise, workstations will not connect to the server and endnet will not work properly on the server.

ERP 8.0 Does Not Work From the Package Control Script

Oracle must be operational and the owenv must reference the proper SID for ERP 8.0 to work from within the package control script.

Package Does Not Switch to the Backup Node Upon Failure or Removal From the Cluster

You must enable automatic switching in the package failover options. If you do not enable this setting, the package will not switch to the backup node when the node fails or you remove the node from the cluster. If you do not want the package to switch, for example, you might want to stop ERP 8.0, you can disable this flag and then halt the package.

Package Halt Fails

If ERP 8.0 does not end cleanly during a package halt, the package halt might fail. This could occur if Oracle is not operational or if ERP 8.0 cannot access the database. You might need to change the test condition in the package control script, or add commands to search for leftover JDE processes and end them.

Placement of the owenv File

Generally, the owenv file should *not* reside on the shared disk. Different environment settings, particularly ORACLE settings, might exist depending on which node you run a package. If you placed the ERP 8.0 bin32 directory on a shared disk, move the owenv file to another directory.

HACMP for AIX Clustering

This chapter explains how to set up a cluster environment using High Availability Cluster Multi-Processor (HACMP) software. If a failure occurs, HACMP provides a transparent recovery for critical applications. You can configure a cluster using any RS/6000 processor and a variety of network adapters and disk subsystems to satisfy your LAN, disk capacity, and performance requirements.

Shared File Considerations

Be careful when you delete or write to shared files. You might want to move old log files, rather than delete them. If you move a package running on a shared file system from one node to another, the new instance of ERP 8.0 references the logs and files from the old instance.

How HACMP Works

HACMP for AIX (Version 4.2) allows customers to automatically detect system failures and recover users, applications, and data on backup systems, minimizing downtime to minutes or seconds. In addition, using HACMP for AIX virtually eliminates planned outages, since users, applications and data can be moved to backup systems during scheduled system maintenance. HACMP Version 4.2 adds new features such as the Cluster Single Point of Control (CSPOC) and Dynamic Reconfig, which allows the system administrator to add users, files, and security functions without stopping mission-critical jobs.

HACMP provides several configuration options, including the following:

- Idle standby for up to seven processors being backed up by a single processor.

- Rotating standby for up to seven processors backed up by a standby processor in a predefined or contention takeover sequence.

- Mutual takeover for up to eight processors backing each other up by sharing the application workloads.

- Concurrent access for up to eight processors working on the same jobs and sharing the same data.

The configuration flexibility of HACMP allows customers to choose the cluster topology and database manager that best suits the requirements of their computing environment. IBM states that HACMP can support both concurrent and parallel data access within a common cluster. HACMP also operates with the new Parallel Database Products such as IBM's DB2 Parallel Edition and Oracle 8 Parallel Server.

Several components make up the HACMP environment, including the following:

- Nodes

  Nodes are the core of an HACMP cluster. A node is a processor that runs the AIX operating system, HACMP, and the mission-critical software. Software execution can be spread over several nodes for system load balancing. In the event of a failover, HACMP executes customer-defined scripts that will establish environments and start specific software packages on a standby node.

- Shared external disk

  Shared external disks are disks that are physically connected to multiple nodes. The shared disks store mission-critical data, which is shared among processes running on separate nodes.

- Networks

  Networks are the independent components of HACMP. TCP/IP is the protocol with which HACMP was designed to function. It has been tested with ethernet, token ring, and Fiber Distributed Data Interface (FDDI) topology.

- Network adapters

- Clients

Installation Considerations

Installing the HACMP cluster requires that you crate login accounts and use Oracle Standard Enterprise Database Management System (DBMS).

User Login Accounts

A major consideration when setting up HACMP and ERP 8.0 are the user accounts. When these accounts are created, they are given unique user IDs and unique group IDs. When a node fails over to another node, these unique IDs are matched to names in the /etc/passwd and /etc/group files. If there are no matches, the unique user and group values are then used as IDs. This can create problems with access and security.

To avoid this problem, prior to starting the installation or configuration of ERP 8.0, create all user accounts and groups on all nodes that will be used in the cluster environment. Use the same unique number for all users and the same unique number for all groups. The easiest way to do this is to use the add user/group function found in the HACMP extension of SMIT.

If ERP 8.0 has already been installed, use the existing user and group ID numbers to create accounts on the nodes that are defined in the resource group.

Oracle Database

Oracle Standard Enterprise DBMS is used in the HACMP configuration explained in this chapter. The resource control scripts are coded to start and stop the database using standard Oracle program calls. These scripts can be easily modified to allow for changes in database start and stop procedures as well as the introduction of commands for Oracle Parallel Server. To minimize installation and configuration problems, have the database administrator review the commands in the control scripts to ensure that they are correct for your installation.

Creating Group and User Accounts

By performing this operation using the add group/user option in the HACMP component of SMIT, all user accounts and group assignments are synchronized across all nodes. This ensures that when the resource disk volume groups remount on the failover system, the user and group IDs match.

▶ **To create group and user accounts**

1. Verify that HACMP is running on all nodes within the resource group.

2. Select a unique ID number that can be assigned to the new group and user that you want to create.

3. Verify your selection by searching all password and group files on the node where the new user and group will be created.

4. Enter the following command on the command line:

smit hacmp

5. From the menu, choose Cluster System Management, then Cluster Users & Groups, then Groups, and then Add a Group to the Cluster.

6. Choose the resource group to which you want to add the new group. The resource group identifies the nodes that will need to be updated. Next, add a group called ERP 8.0 and assign it the unique ID number that you chose.

7. Press Enter.

8. From the Cluster Users & Groups panel, choose Users and then Add a User to the Cluster.

9. Choose the same resource group that you chose above for adding a group.

10. Add a user "oneworld," assign it the pre-selected unique ID number, and choose the ERP 8.0 group.

11. Repeat this procedure for the Oracle sign on, creating the group "dba".

Setting Up ERP 8.0 for HACMP

The standard ERP 8.0 enterprise server software requires only minimal modifications to function in a cluster, including editing the enterprise server JDE.INI file, the owenv script, the start resource control script, and the stop resource control script.

► **To edit the owenv script**

1. In Windows Explorer, go to the /$SYSTEM/bin32 directory and open the owenv file.

2. Edit the bold lines shown below:

```
#! /bin/ksh
## set OWHOME to point to the base install path for ERP 8.0
export OWHOME=/ow2/jdedwardsoneworld/b734
## set ENVIRON to the path code from which you want to run business
functions
export ENVIRON=MSTR
## set up the path to your ERP 8.0 system and path code
export SYSTEM=$OWHOME/system
export APPDEV=$OWHOME/$ENVIRON
## set JDE_BASE to teh location of your JDE.INI file
export JDE_BASE=$SYSTEM/ini/aix

## set up the Oracle environment
export ORACLE_HOME=/u01/app/oracle/product/8.0.5
export ORACLELIB=$ORACLE_HOME/lib
## the remaining variables point to libraries and executables
```

```
export SHLIB_PATH=$SYSTEM/lib:$APPDEV/bin32:$ORACLELIB:$SYSTEM/libv32
export LD_LIBRARY_PATH=$SHLIB_PATH

export PATH=$PATH:$SYSTEM/bin32
```

3. Save and close the file.

► To edit the start resource control script

1. In Windows Explorer, go to the /$SYSTEM/bin32 directory and open the StartResource.sh file.

2. Edit the bold lines as shown below:

```
#_____
#Global Variables
#_____
#
#export PATH=$PATH
#
Set environment variables
#
./usr/sbin/cluster/scripts/owenv
#
loop=0
StartUpError=false
ORACLEPROCESS="oracle"
OWStartupDir=$SYSTEM"/bin32"
StartUpLog=$OWStartupDir"/OWStartup.log"
ORACLE_UID=oracle
APP_UID=oneworld
LOGFILES=$OWStartupDir"/jde*.log"
```

The first bold line executes the script that sets various required ERP 8.0 environment variables. This script, as well as others, will be relocated into the scripts directory as described in the *Control Scripts* section under *Creating an Application Server*.

ORACLE_UID and APP_UID are the login ID names for Oracle and ERP 8.0. These are used in the script so that the respective applications are started with the proper application ownership.

Note: This script is delivered with these IDs undefined. If the script is executed, an error message will be generated.

3. Save and close the file.

► To edit the stop resource control script

1. In Windows Explorer, go to the /$SYSTEM/bin32 directory and open the StartResource.sh file.

2. Edit the bold line as shown below:

```
#_____

#Global Variables

#_____

export PATH=$PATH:.

#

# Set environment variables

#

./usr/sbin/cluster/scripts/owenv

LogicalVolumn=/ow2

ShutdownDir=$SYSTEM"/bin32"

StartUpLog=$OWStartupDir"/OWStartup.log"

APP_UID=oneworld
```

Similar to the script modification described in the previous procedure, the APP_ID needs to have the login ID of the application owner. In this example, oneworld owns the application.

3. Save and close the file.

Creating an Application Server

The application server is a method that invokes predetermined actions of applications. The server is called in the cluster startup or shutdown sequence and executes predefined scripts depending on what activity is occurring. As part of the cluster installation and configuration process, and application server must be created and the access path to the control scripts defined.

Before You Begin

The control scripts that are included with ERP 8.0 are located in the /$SYSTEM/bin32 directory. These scripts are basic in nature and can be modified to address different requirements as needed. Before you can create an application server, you must move the scripts to a non-shared disk directory.

► To move the control scripts

1. Sign in as root and enter the following commands:

```
#export SYSTEM=<OneWorld system directory path>
```

where ERP 8.0 system directory path is the path to your ERP 8.0 system directory. An example of the path is /ow2/jdedwardsoneworld/b733/system.

```
# cd /usr/sbin/cluster

# mkdir scripts

# cd scripts
```

Be sure to include the periods, preceded by a single space, in the following commands:

```
# cp $SYSTEM/bin32/StartResource.sh .

# cp $SYSTEM/bin32/StartResource.sh .

# cp $SYSTEM/bin32/owenv .

# chmod 755 *
```

2. Repeat step 1 on all failover nodes and FTP over the modified script files.

► **To define an application server**

1. From the command line, enter the following command:

```
# smit hacmp
```

2. From the menu, choose Cluster Configuration, then Cluster Resources, then Define Application Servers, and then Add an Application Server.

3. Complete the following fields:

   - Server Name

     Enter OneWorldSrv. This adds a label to the resource server that controls the starting and stopping of ERP 8.0.

   - Start Script

     Enter the path of the StartResource.sh script - for example, /usr/sbin/cluster/scripts/StartResource.sh.

   - Stop Script

     Enter the path of the StopResource.sh script - for example, /usr/sbin/cluster/scripts/StopResource.sh.

4. Press Enter.

► **To define cluster resources**

This procedure explains how to let HACMP know that you have defined an application server. This is so that HACMP will know to use the server during a cluster-related event. Within the cluster parameters display is a field in which this resource is defined.

1. From the command line, enter the following:

   # smit hacmp

2. From the menu, choose Cluster Configuration, then Cluster Resources, and then Change/Show Resource for a Resource Group.

3. Choose the resource group - for example, ERP 8.0.

4. On Configure Resources for a Resource Group, in the Application Server field, enter the name of the application server that you defined in the previous procedure.

Maintaining Multiple Instances of ERP 8.0

There are several considerations when you run multiple instances of ERP 8.0 in a clustered environment. Even though each instance might begin on a separate node, a situation might arise when multiple instances need to run on the same node. When this happens, communication to each ERP 8.0 instance must occur on a different port number or service

name, and each instance must use a different range of IPC keys. The following parameters in the JDE.INI file control these settings:

```
[JDENET]
ServiceNameListen=Service Name or Port Number
ServiceNameConnect=Service Name or Port Number
```

```
[JDEIPC]
StartIPCKeyValue=Numeric Value
```

Variable Name	Description
Service Name or Port Number	The service name parameters can use an actual port number or the name of a service that you enter into the /etc/services file.
Numeric Value	The IPC key values should differ by at least 1000 between any two ERP 8.0 instances.

Troubleshooting AIX Clustering

This section explains how to work through several basic problems that can occur with AIX clustering.

ERP 8.0 Does Not Start

Follow these steps if ERP 8.0 fails to start:

- When you start ERP 8.0 using the control script, first check the control script log for errors.

- Check the ERP 8.0 log directory for log files. If no log files reside in the directory, verify that the ERP 8.0 processes exist in the proper directory and that you correctly set the $SYSTEM environment variable.

- If the log file names are in all capital letters, the $JDE_BASE environment variable might be set incorrectly. If so, the process will not be able to locate the JDE.INI file.

  To resolve this, verify whether an entry exists in the /etc/hosts table for the floating IP address. If no entry exists, jdenet_n will start, but all other processes will return the following message in the log:

Error 239 -- gethostbyname returned Connection refused

- If no entry for the floating IP address exists that the workstation can reference, the workstation fails to connect and returns the following message in the log:

11001 -- gethostbyname returned 11001 (WSAHOST_NOT_FOUND): The host was not found

▶ To edit the enterprise server JDE.INI file

1. Open the enterprise server's JDE.INI file.
2. Edit the following line in the [CLUSTER] section so it looks like this:

[CLUSTER]

Primary Node=*Resource IP Name*

where Resource IP Name represents the IP address associated with the ERP 8.0 server. This IP is not a UNIX server IP, but is a separate address given to this resource. This address must be defined on all servers to which this resource may failover.

3. Save and close the JDE.INI file.

Resource Does Not Switch to the Backup Node Upon Failure

Verify that the control scripts are in the correct directory and set to be executable. Verify that the application server name is correct in the resource group.

Resource Shutdown Request Fails

Check the OWShutdown script log to determine why the shutdown request failed. This log is located in the /$SYSTEM/bin32 directory.

- If ERP 8.0 does not end cleanly during a failover, the node will not failover. This failure might occur if Oracle is not operational or if ERP 8.0 cannot access the database. You might need to change the test condition in the resource control script, or add commands to search for leftover JDE processes and end them.

- If the script is failing during the unmount of the file system, you may need to add a delay between the fuser command and unmount command. The fuser command should remove any processes accessing the file system. Adding a one-second delay will allow this command to complete before the unmount is attempted.

Sun Solaris Clustering

This chapter explains how to set up ERP 8.0 to work with Sun's clustering software. This software provides higher availability for your applications because it allows you to recover almost instantaneously from a power failure or hardware problem. It also allows applications to be available during scheduled downtime.

This documentation assumes that you have successfully installed Oracle and the SUNClustering software. If you are having trouble with either of these products, you should contact Oracle or Sun as needed.

Requirements for Clustering on Sun

You must have a disk that is accessible to all machines in the cluster, and this disk must be large enough to accommodate your ERP 8.0 installation. If you wish to place the database on the same cluster as well, the database file must also be placed on a shared disk accessible to all machines in the cluster (although not necessarily on the same shared disk as the one that the ERP 8.0 server is on).

The SUNClustering 2.2 or greater API is recommended.

ERP 8.0 Installation Considerations

If ERP 8.0 has not already been installed, install ERP 8.0 following the procedures in the *ERP 8.0 Installation Guide for UNIX-Based Operating Systems*. Make sure you install ERP

8.0 on a disk that is accessible to all machines in the cluster. When the installation process asks for the name of your enterprise server, use the logical host name of the cluster.

If ERP 8.0 has already been installed, change your ERP 8.0 data sources to reference the cluster name. Also, change any references to the enterprise server name in both the client and server jde.ini files to reference the cluster name.

Clustering Scripts and How to Modify Them

Four cluster-specific scripts are delivered with ERP 8.0:

- SunStartResource.sh
- SunStopResource.sh
- owenv
- SunOracleMgr.sh

These scripts can be found in the system/bin32 directory under the base ERP 8.0 installation directory. Each script is explained below.

SunStartResource.sh

This script runs whenever a node in the cluster starts the ERP 8.0 service. It must be registered with the SUNClustering software and should handle everything that needs to happen when the ERP 8.0 service starts or is switched from one node to another. See "Registering ERP 8.0 with SUNClustering" in this chapter for more information.

The following task explains how to modify the SunStartResource.sh script to work with a cluster.

► **To modify the SunStartResource.sh script**

1. Under Global Variables, there is a call to /suncldata/oneworld/b733_sp7/system/bin32/owenv. Change /suncldata/oneworld/b733_sp7/ to the same path that OWHOME was set to in the owenv script.

2. Set the APP_UID to the user name that ERP 8.0 is to be run under.

3. Set ORACLE_UID to the user that is to run Oracle if the database is on the same cluster as ERP 8.0.

4. If you are using Oracle, uncomment the section under "Check for ORACLE running" and "Check to see if ORACLE started/running."

SunStopResource.sh

This script runs whenever a node in the cluster stops the ERP 8.0 service. It is also registered with the SUNClustering software, and should handle shutting down various processes and any cleanup that needs to happen when the ERP 8.0 service is stopped.

The following task explains how to modify the SunStopResource.sh script to work with a cluster.

1. Under Global Variables, change the call to /suncldata/oneworld/b733_sp7/system/bin32/owenv to the same thing that is in the SunStartResource.sh script.

2. Set APP_UID and ORACLE_UID to the users running ERP 8.0 and Oracle, respectively. These values will be the same as in SunStartResource.sh.

3. Under the "Shutdown ERP 8.0" section, set LOGDIR to be the location where all the log files are located.

owenv

This script sets various UNIX environment variables that are needed by ERP 8.0. The script is called from within the SunStartResource.sh and SunStopResource.sh scripts.

The following task explains how to modify the owenv script to work with a cluster.

▶ **To modify the owenv script**

1. Set OWHOME to be the base directory of ERP 8.0 - for example, /suncldata/oneworld/b733_sp7/.

2. Set ENVIRON to the pathcode that you are using - for example, PROD or CRP.

3. Once OWHOME and ENVIRON are set, SYSTEM, APPDEV, AND JDE_BASE should be correct.

4. Set ORACLE_HOME to be the location of the ORACLE installation on the machine, for example, /suncldata/app/oracle/product/8.0.5.

5. Set ORACLE_SID as needed.

SunOracleMgr.sh

This script may be needed if you are running the database on the same cluster as the ERP 8.0 server. If you are not running the database on the same cluster, then you can ignore this section.

The following task explains how to modify the SunOracleMgr.sh script.

▶ **To modify the SunOracleMgr.sh script**

1. In the Setup Global Variables section of the script, set ORACLE_UID to the user ID that is used to start Oracle.

2. Set ORACLE_HOME to the appropriate value for your Oracle installation.

Registering ERP 8.0 with SUNClustering

The following task explains how to register ERP 8.0 with the SUNClustering software.

▶ **To register ERP 8.0 with SUNClustering**

1. To register ERP 8.0 with SUNClustering, log in as the root user and type the following command:

   /opt/SUNWcluster/bin/hareg -r[*service name*] -m start_net=[*absolute path of SunStartResource.sh*] -mstop_net=[*absolute path of SunStopResource.sh*]

where *service name* can be anything you want, but you may want to make it something easy to remember like "oneworld" since you will need to use that name when modifying ERP 8.0's registry with SUNClustering.

2. Type the following command with no options:

    /opt/SUNWcluster/bin/hareg

    If the line containing the service name you assigned to ERP 8.0 contains "off," then type the following command:

    /opt/SUNWcluster/bin/hareg -y [*service name*]

    This sets the data service to "on" which allows the data service to switch physical hosts when appropriate.

3. To test whether the cluster switches, type the following command:

    /opt/SUNWcluster/bin/haswitch

    Also, try pulling the plug on the current active host.

Note:

You should *not* use "reboot" or "shutdown" on the primary node as a test as doing so will result in an error and not in a switchover.

Windows NT Clustering

This section provides information regarding the installation of ERP 8.0 on Microsoft Cluster Services (MSCS).

Note:

For more information about how to install and set up a Microsoft cluster, see the appropriate Microsoft documentation.

Before You Begin

- ❑ You should partition your disk array to logically divide the software components. Typically, you will set up the following partitions:

  - A partition that contains the cluster software

  - A partition that contains the ERP 8.0 database

  - A partition that contains the DBMS software and database if these reside on the cluster system

- ❑ If you will be using Microsoft clustering in conjunction with a database management system (DBMS), such as Oracle Fail Safe or SQL Server, consult the installation documentation for the appropriate DBMS prior to Windows NT enterprise server installation.

- ❑ Configure your network. This includes setting up connections between servers, workstations, and printers.

Although you need only one network card in each node, you should use two cards to ensure recoverability. One network card will communicate with the public network, and the second card will connect between nodes. This setup allows your cluster to remain active when the primary node loses the network connection. If you use only one network card, when a node loses the network connection that node also loses the connection to other nodes in the cluster.

❑ If the database and ERP 8.0 are both running on the cluster, they can be configured to run on separate nodes. To accomplish this, separate ERP 8.0 resources and database resources into different groups. Also be sure that ERP 8.0 and the database do not share disk resources. ERP 8.0 resources will need to be in the same group as the cluster network name and cluster IP address. This can be the cluster group.

When the ERP 8.0 and database groups are in separate groups, the database group must be online before bringing the ERP 8.0 resources online.

This change becomes effective as of ERP 8.0 release B73.3.

If you do not require ERP 8.0 and database resources to run on separate nodes, place all database and ERP 8.0 resources in the cluster group.

Troubleshooting

This section lists issues and solutions that can assist you should you encounter problems with Windows NT clustering.

Upgrading SQL Server 7.0 From a Pre-Release Build to a Release Build

In the initial SQL Server 7.0 installation, J.D. Edwards used a passive-active configuration. This means that SQL Server 7.0 was installed to the shared disk. During the upgrade J.D. Edwards uninstalled SQL Server Clustering, then performed the upgrade on node1 to a partition on the shared disk. Forgetting the active-passive configuration, J.D. Edwards installed to the local drive on node2 and started the SQL Server cluster reinstallation. The reinstallation would not work. SQL Server was confused about whether the shared or local drive was the correct installation. Attempting to uninstall SQL Server would not work because it looked to SQL Server like SQL Server clustering was still installed. SQL Server clustering would not uninstall because it was not completely installed. Editing the registry caused more problems. A registry entry for one of the shared drives in the MCSC cluster was mistakenly deleted. Restoring the registry from a very recent copy of the Emergency Repair Disk did not work as an error was received reading the SYSTEM key. The final result was backing up the whole disk, and reinstalling Windows NT 4.0, MSCS, and SQL Server.

Changing an IP Address

After moving the cluster equipment to another area, J.D. Edwards had to change the IP address for cluster nodes and any virtual machines connected to them. In order to perform this task, J.D. Edwards had to uninstall MSCS. This required the removal of all resources and groups already defined. It also required uninstalling DBMS cluster software, which included SQL Server Cluster Manager and Oracle Failsafe. The final steps were uninstalling MSCS,

changing the physical IP address in the nodes, reinstalling MSCS using the new IP address for the virtual machine, and reinstalling SQL Server Cluster Manager and Oracle Failsafe.

Reinstalling MSCS

If you have already installed a version of Microsoft Cluster Server software and you need to uninstall it, you must use the Add/Remove Programs tool to uninstall MSCS.

Setting Up ERP 8.0 on a Windows NT Cluster

The following procedure explains how to set up ERP 8.0 on a Windows NT cluster. The Windows NT cluster uses a two-server configuration.

► **To set up ERP 8.0 on a Windows NT cluster**

1. Install Windows NT Enterprise Server version 4.0 SP5 or later on each node.

   You can install these nodes as stand-alone servers, PDC-BDC combinations, or BDC-BDC combinations.

2. Install Microsoft Cluster Server (MSCS) software on each node using an account that has administrator authority. Refer to the appropriate Microsoft documentation for specific instructions on the installation of MSCS.

   Access the cluster to verify the installation of MSCS.

   Note: If you already installed a version of Microsoft Cluster Software, before you reinstall, you must uninstall the software using Add/Remove programs.

3. If you want to manage the cluster remotely - for example, at your desk rather than physically at the cluster - you can install Cluster Administrator on workstations. Refer to the appropriate Microsoft documentation for specific instructions on the installation of Cluster Administrator.

4. Install ERP 8.0 on the cluster disk using the cluster name as the enterprise server name.

   All nodes will share a single copy of ERP 8.0.

5. Install the ERP 8.0 network and queue services on each node. Make sure that the ERP 8.0 partition (that is, cluster disk resource) is owned by the node on which you are installing the ERP 8.0 network and queue services.

6. Go to Settings, then Control Panel, then Services, and then Startup to assign a generic ERP 8.0 user ID and password for the network and queue services to allow workstations to connect to the ERP 8.0 server.

7. If the server database will reside on the cluster disk, then all server entries in the ERP 8.0 tables must contain the name of the cluster.

   If you use Oracle Fail Safe or SQL Server Failover support, additional considerations exist, such as database resource dependencies. For Oracle Fail Safe, the database must reside on the shared disk storage. For SQL Server, active/passive or active/active configurations will be different. Please consult the appropriate Oracle or SQL Server documentation for more information.

8. In the server jde.ini file, set all server parameters, except the database system settings, to the cluster name. Set the database system settings to the name of the database server. For Oracle Fail Safe, you can set the database server setting to the Oracle cluster alias.

Adding the ERP 8.0 Network and Queue Resources to the Group

▶ **To add the ERP 8.0 network and queue resources to the cluster group**

1. From the Cluster Administrator main menu, from the File menu, choose New, and then Resource.

2. On New Resource, complete the following fields for the JDE network resources, and then click Next.

   • Name

   • Description

   • Resource Type

   Choose Generic Service from the list.

   • Group Name

   Choose the cluster group.

3. **Do not** turn on the option to Run this resource in a separate Resource Monitor.

4. On Possible Owners, verify that the possible owners match the preferred owners, then click Next.

5. On Dependencies, choose the ERP 8.0 physical disk resource and the cluster network name; click Add; and then click Next.

   You establish this dependency to ensure that the resources are available when the network service starts. Network and queue resources will not function if the drive is unavailable.

6. On Generic Service Parameters, do the following, and then click Next:

   • Type the JDE network service name as it appears in the NT Services applet.

   • Leave the Startup Parameters field blank.

7. On Registry Replication, click Finish.

8. On Cluster Administrator, click OK.

9. Repeat the preceding steps to set up the JDE queue service with the following modifications:

   • On Dependencies, choose your JDE network resource from the Available Resources listbox, click Add, and then click Next to continue.

Starting and Stopping the ERP 8.0 Resources on the Cluster

Important:

In a cluster environment, use Cluster Administrator to start and stop ERP 8.0 network and queue services. ERP 8.0 resources should be started and stopped in the same order as they are done in the Windows NT Services applet: first, start the network service and then the queue service. When stopping, stop the queue service and then the network service.

► **To start and stop the ERP 8.0 resources on the cluster**

1. To start network and/or queue services, in Cluster Administrator, right-click on the ERP 8.0 resource and choose Online.

2. To stop network and/or queue services, in Cluster Administrator, right-click on the ERP 8.0 resource and choose Offline.

Testing ERP 8.0 Connections on the Cluster

Important:

ERP 8.0 network and queue services must be set up before you can test connections on the cluster. See *Starting the ERP 8.0 Windows NT Enterprise Server* in the *ERP 8.0 Installation Guide*.

► **To test ERP 8.0 connections on the cluster**

1. Sign on to Windows NT.

2. Using Cluster Administrator, verify that all ERP 8.0 resources are online for the ERP 8.0 group.

3. Run porttest to verify that ERP 8.0 is installed correctly on the cluster server. Enter the following commands to run porttest:

```
cd \jdedwardsoneworld\ddp\xxxx\System\Bin32

porttest userID password environment
```

   where *xxxx* is the specific release of ERP 8.0 - for example, B733 - *userID* is a valid ERP 8.0 user, *password* is the password for that user, and *environment* is the environment you are verifying. These parameters are case-sensitive. Enter the porttest command for each environment.

   The porttest program initializes a user and an environment, assuming that ERP 8.0 is installed and configured correctly. The program should display messages indicating the selection of records out of a ERP 8.0 table. If it does not, review the jde_####.log file that was specified in the jde.ini file on the enterprise server.

4. Sign on to a ERP 8.0 workstation, then run a batch application. For example, submit the Business Unit Master List - All Companies report (R0006P). Verify that the report processed successfully on the UBE server.

   See *Working with Server Jobs* in the *System Administration Guide* for more information about verifying batch processing.

5. Stop ERP 8.0 on the first node using the Cluster Administration tools.

6. Stop cluster services on the first node by right-clicking on the node name and choosing Cluster Service. All groups will failover to the second node.

7. Verify that all resources are online on the second node and repeat the process.

Setting Advanced Options for ERP 8.0 Resources

▶ **To set advanced options for ERP 8.0 resources**

1. From the Cluster Administrator main menu, open the group that contains the resource that you want to modify.

2. Choose a resource, and from the File menu, choose Properties.

3. Click the Advanced tab, and choose one of the following options:

   - Do Not Restart

   - Restart

   If you want to disable failover, choose Do Not Restart.

4. Review the values on this form. For more information about these values, see the appropriate Microsoft clustering documentation.

Setting Failover and Failback Parameters

▶ **To set failover and failback parameters**

1. From the Cluster Administrator main menu, choose the appropriate group, then from the File menu, choose Properties.

2. Click the Failover tab, then review the following fields:

   - Threshold

   This field determines the number of failovers attempted by MSCS.

   - Period

   This field determines the period of time during which MSCS attempts failovers.

3. Click the Failback tab and review the following options:

   - Prevent Failback

   - Allow Failback

   The setting for this option can be immediate or during a set period of time.

For more information about these parameters, see the appropriate Microsoft clustering documentation.

Backing Up ERP 8.0 Tables

A well-planned backup strategy is essential to protect your enterprise's information assets. Rigorously following the backup strategy will provide insurance against data lost by acts of nature, hardware or software failure, or human error. Your backup strategy must balance the level of protection you need against the physical constraints of your system, such as information storage capacity.

J.D. Edwards recommends that your backup strategy includes the following:

- Perform a full system backup whenever data is at risk, such as when you are installing or upgrading software. At least back up the database completely.

- Each night, back up changed objects, such as tables and JDEdwardsOneWorld objects.

- Each week, back up the deployment server, enterprise servers, and the full database.

Note:

You should outline and implement your backup strategy before you begin the Prototype phase of implementation.

Understanding Backup Requirements for Servers

When you perform a backup on a server, you can either create a backup of the entire server, or just back up the changed objects and data. You do not need to perform a complete backup of the server nightly. Only directories that change on a daily basis require daily backups.

Deployment Server

JDEdwardsOneWorld on the deployment server includes the following items:

- JDEdwardsOneWorld directory (all subdirectories and contents)
- jde.ini file on c:\winnt
- Services file on c:\winnt\system32\drivers\etc
- Registry export file
- JDEdwardsOneWorld files in the root directory (c:\):
  - jdeapp.ddp
  - jdeapp.xdp
  - jdeauth.dda
  - jdeauth.xda
  - jdemod.ddm
  - jdemod.xdm
  - jdesec.dds
  - jdesec.xds
  - jdecode.ddm

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- jdecode.xdm

The changed objects and data on the deployment server include:

- If you modify objects, build new packages, or update the Access database delivered during a workstation installation, create backups of the PD7334, DV7334, and PY7334 directories.

- If you modify help files, create a backup of the HELPS directory.

- If your media objects reside on the deployment server, create a backup of the MEDIA OBJ directory.

- If important data, such as system data, resides on your deployment server, create nightly backups of the ERP 8.0 data sources (Oracle or SQL Server). For example, if your central objects or Object Management Workbench resides on the deployment server, create nightly backups.

Enterprise Server

ERP 8.0 on the enterprise server runs on the AS/400, UNIX, or Windows NT operating systems. You backup key libraries on the AS/400 and key files on the UNIX and Windows NT operating systems.

AS/400

Note:

Shut down the database before you create any backups.

- All JDEdwardsOneWorld system libraries:

  - JDEOW

  - SYS7334

  - B7334SYS

  - SVM7334

- JDEdwardsOneWorld data dictionary library:

  - DD7334

- JDEdwardsOneWorld Object Management Workbench library:

  - OL7334

- All JDEdwardsOneWorld production libraries (This example is for pristine and production)

  - PD7334

  - PY7334

  - PRODDTA

  - PRISTDTA

- All JDEdwardsOneWorld business data libraries:

  - PRODDTA

  - CRPDTA

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- PRISTDTA

- TESTDTA

- All JDEdwardsOneWorld control libraries:

  - PRODCTL

  - CRPCTL

  - TESTCTL

  - PRISTCTL

- All JDEdwardsOneWorld versions libraries:

  - PD7334DNT

  - PY7334DNT

  - JD7334DNT

  - DV7334DNT

- IFS (Integrated File System) libraries:

  - PD7334

  - PY7334

  - JD7334

  - TS7334

  - DV7334

- IBM libraries that require backups:

  - QCPA

  - QGPL

- Central objects on the deployment server in Oracle or Microsoft SQL Server database.

UNIX

Note:

Shut down the database before you create any backups using Backup Manager. If you export/import using Data Manager, you do not need to shut down the database.

- System files

  Create backups of all host files under the jdedwardsoneworld/b73x directory - for example, /u03/jdedwardsoneworld/b73x/*

- Database files

  Create backups of all data files that reside in the ERP 8.0 tablespaces.

  Use the Oracle Data Manager Tool on the deployment server to make a .dmp file of the desired database, and then back up the .dmp file on tape or hard disk.

Windows NT

Note:

Shut down the database before you create any backups.

- System files

  JDEdwardsOneWorld\ddp\B73x directory

- Oracle database files

  Create backup files for the following:

  - All data files that reside in the JDEdwardsOneWorld tablespaces

    Use the Oracle Data Manager Tool on the deployment server to make a .dmp file of the desired database, and then back up the .dmp file on tape or hard disk.

- Microsoft SQL Server database files

  Create backup files for the following:

  - All tables that reside in the JDEdwardsOneWorld databases

    Use the SQL Server Database/Object Transfer tool on the enterprise server to copy the desired tables or database (for example, JDE7334) to a backup database.

  Note: J.D. Edwards recommends that you use the backup tool provided by the RDBMS vendor.

ERP 8.0 Tables and Object Owner IDs

The following tables provide lists of JDEdwardsOneWorld tables by type with the associated object owner IDs.

Note:

If any of the control table merges fail, or if the specification merge fails, you might need to restore the tables to a premerge condition and run the merge again. Follow the restore instructions for your database.

System Tables

- F00053
- F000531
- F000532
- F0092
- F00921
- F00924
- F0093
- F0094
- F00941
- F00942
- F00945

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- F00946
- F00948
- F00950
- F00960
- F98101
- F986101
- F98611
- F986115
- F986116
- F98613
- F986150
- F986151
- F986152
- F98616
- F986161
- F986162
- F986163
- F986164
- F986165
- F98701
- F98800D
- F98810D
- F9882
- F98825
- F9883
- F9885
- F9886
- F9887
- F9888
- F98881
- F98882
- F98885
- F98887
- F9889
- F98891
- F98892
- F98980
- F98CONST
- F98DRENV
- F98DRLOG
- F98DRPCN
- F98DRPUB
- F98DRSUB
- F98EVDTL
- F98EVHDR
- F98MOQUE
- F98OWSEC
- F98TMPL
- F98VAR

Object Owner

- sys7334

Object Management Workbench Tables

- F00165
- F9860
- F9861
- F9862
- F9863
- F9865

Object Owner

- obj7334

Data Dictionary Tables

- F00165
- F9200
- F9202
- F9203
- F9207
- F9210
- F9211

Object Owner

- dd7334

Server Map Tables

- F986101
- F98611
- F986110
- F986111
- F986113
- F98DRPCN
- F98DRLOG

Object Owner

- svm7334

Control Tables

- F0002
- F00021
- F0004
- F0004D
- F0005
- F0005D
- F0082
- F00821
- F00825
- F00826
- F0083
- F0084

Object Owners

- Control Tables - PROD: prodctl
- Control Tables - CRP: crpctl
- Control Tables - TEST: testctl
- Control Tables - JDE: pristctl

Versions Tables

- F983051
- F98306

Object Owners

- Versions - PD7334: pd7334
- Versions - PY7334: py7334
- Versions - DV7334: dv7334
- Versions - JD7334: jd7334

Central Objects

- F980011
- F980021
- F983051
- F98306
- F98710
- F98711
- F98712

- F98713

- F98720

- F98740

- F98741

- F98743

- F98745

- F98750

- F98751

- F98752

- F98753

- F98760

- F98761

- F98762

- F98950

Object Owners

- Central Objects - PD7334: pd7334

- Central Objects - PY7334: py7334

- Central Objects - DV7334: dv7334

- Central Objects - JD7334: jd7334

Business Data

- Business Data - PROD: proddta

- Business Data - CRP: crpdta

- Business Data - TEST: testdta

- Business Data - JDE: pristdta

Backing Up ERP 8.0 Tables on Servers

Depending on your platform and database type, the procedures you need to perform for backups vary.

Before You Begin

- ❏ If you are using SQL Server or Oracle, verify that you have enough disk space for your backup copy before you begin the backup.

- ❏ If you are using SQL Server, verify that the Select Into/Bulk Copy option on the Options form is turned on for the database into which you will transfer objects. Double-click the database in the tree structure to access the Options form.

► To create a backup for AS/400

On a tape drive, back up the following libraries, depending on which pathcodes you have installed:

Library name	Description
SYS7334	System library
SVM7334	Server Map
OL7334	Object Librarian
DD7334	Data Dictionary
COPY7334	Central Objects - Prototype
COJD7334	Central Objects - JDE
COPD7334	Central Objects - PROD
CODV7334	Central Objects - DEV
PRODDTA	Production Business Data
PRODCTL	Production Control Tables
CRPDTA	Prototype Business Data
CRPCTL	Prototype Control Tables
TESTDTA	Test Business Data
TESTCTL	Test Control Tables
PRISTDTA	Pristine Business Data
PRISTCTL	Pristine Control Tables
PY7334DNT	Versions for CRP
PD7334DNT	Versions for PROD
JD7334DNT	Versions for PRIST
DV7334DNT	Versions for DEV
B7334SYS	Server system library
JDEOW	JDEdwardsOneWorld Installation
PY7334	Server modules - Prototype
PY7334FA	Package Library - Prototype

JD7334	Server modules - JDE
JD7334FA	Package Library - JDE
PD7334	Server modules - PROD
PD7334FA	Package Library - PROD
DV7334	Server modules - DEV
DV7334FA	Package Library - DEV

1. Back up the following IFS structure with the subdirectories:

Library name	Description
JDEB7334	Logging directory
B7334SYS	Kernel spec and XML
PY7334	Spec files for Prototype
JD7334	Spec files for JDE
PD7334	Spec files for PROD
DV7334	Spec files for DEV
JDEdwardsOneWorld	Contains the spec files for each path code.
	\JDEdwardsOneWorld\PACKAGES\PY7334FA\SPEC*.*
	\JDEdwardsOneWorld\PACKAGES\JD7334FA\SPEC*.*
	\JDEdwardsOneWorld\PACKAGES\PD7334FA\SPEC*.*
	\JDEdwardsOneWorld\PACKAGES\DV7334FA\SPEC*.*

► **To create a backup for Oracle on UNIX or Windows NT**

1. From the Oracle Enterprise Manager Tool, open Data Manager and from the Data menu, choose Export.

2. Type the name for your export utility .dmp file.

   Click the Browse button to choose the directory where your .dmp file will reside.

3. Click Next.

4. On the Object Selection form, choose the objects you want to back up, then click Next.

   Note:

   Objects chosen in the tree on the Data Manager form appear in the Selected Objects form. You can move objects between forms using the arrow buttons or by dragging and dropping.

To export objects, expand the Available Objects tree and choose the item to export. Use the arrows to move objects to and from the Selected Objects form.

5. On the Tuning form, you can choose to generate a log file, if needed.

6. Click Next.

> **Note:**
> Choose the Generate Log File option and enter a log file name or choose a log file using Browse.

7. On the Advanced Options form, take the defaults or choose the desired options, and click Next.

8. On the Summary form, very that all of the chosen objects and options are correct.

9. Click Finish to begin exporting objects.

   A message window opens that displays information about the progress of the export process.

10. When the export process is completed, you will receive the following message:

    Export terminated successfully without warnings.

    If the message informs you that there were errors or warnings, check your log file to review the export process.

► **To create a backup for SQL Server**

1. From SQL Enterprise Manager, from the Tools menu, choose Database/Object Transfer.

   The Database/Object Transfer form appears.

2. Choose a destination server and database on which to create backup copies of your tables.

   > **Note:**
   > The source server and the destination server can be the same, but the database must be different.

3. Keep all default settings and then click the Start Transfer button.

   The Database/Object Transfer tool moves your objects.

4. Perform either of the following to verify whether the backup was successful:

   - When the process completes the transfer, you can click the View Logs button to review the transfer process.

   - Run a SELECT statement to verify that your backup tables transferred to the new database with data.

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► To restore a backup file for Oracle on UNIX or Windows NT

1. From the Oracle Enterprise Manager Tool, open Data Manager and from the Data menu, choose Import.

2. Type the name of your import utility .dmp file.

3. Click Next.

4. On the Object Selection form, choose the objects you want to restore and click Next.

   The Importable Objects tree contains the objects which are importable in the file you specified. To move the object to the Selected Objects tree, choose an object in the tree and click the down arrow.

   Note:
   When the .dmp file is on a remote machine, Data Manager uses the Console job and event system to retrieve the file before displaying the data through the Import Wizard. The Remote Import page of the Import Wizard has a status line at the top of the page which shows the progress of data retrieval. The Oracle Enterprise Manager Console must be running.

   Three conditions can be displayed: Job Submitted, Job Started, and Job Completed.

   Important: Data retrieval must complete successfully before beginning the import operation.

   The Selected Objects/Available Objects tree contains the objects to be imported. To remove an object from the list, choose the object and use the up arrow or drag and drop.

5. Click Next.

6. On the Associated Objects from, you can accept the defaults and click Next.

7. On the Tuning form, you can choose to generate a log file, if needed.

8. Click Next.

   Note:
   Choose the Generate Log File options and enter a log file name or choose a log file using Browse.

   ---

9. On the Advanced Options form, choose the Increment Type. If you followed the instructions to create a backup, choose None for Increment Type and click Next.

10. On the Summary form, verify that all chosen objects and options are correct.

    Important:
    You must drop the existing objects in the database that you want to restore, or else the import process will fail.

    ---

11. Click Finish to begin importing objects.

12. When the import process is completed, you will receive the following message:

Process terminated successfully with no warnings.

If the message informs you that there were errors or warnings, check your log file to review the export process.

13. Perform a SELECT statement to verify that your backup tables are populated with data.

▶ **To restore a backup file for AS/400**

Restore the libraries and IFS directories that you backed up from tape.

SQL Server Parameters

The following material on SQL Server parameters is reprinted from *SQL Server Books Online - Transact SQL Reference 6.0* with permission from Microsoft Corporation.

Variable Name	Description
database_name	Specifies the database. If the table being copied is in your default database, this parameter is optional.
owner	The owner's name. This name is optional if you own the table being copied. If no owner is specified and you do not own a table of that name, the program will not execute.
table_name	Specifies which database table to copy.
in|out	Specifies the direction of the copy. The in option copies from a file into the database table while the out option copies to a file from the database table.
datafile	The full path of an operating system file when copying a table to or from multiple diskettes; datafile is a drive specifier only (such as C:).
/n	Performs the copy operation using the data's native (database) data types as the default. This option does not prompt for each field because it uses the default values.
/u login_id	User ID.
/p password	A user specified password. If the /p option is not used, bcp prompts for a password. If the /p option is used at the end of the command line without any password, bcp uses the default password (NULL).
/s servername	Specifies which SQL Server to connect to. The servername is the name of the server machine on the network. This option is required when you perform bcp from a remote machine on the network.

► To restore a backup file for SQL Server

Verify that the Select Into/Bulk Copy option on the Options form is turned on for the database into which you will transfer objects. Double-click the database in the tree structure to access the Options form.

1. From SQL Enterprise Manager, from the Tools menu, choose Database/Object Transfer.

   The Database/Object Transfer form appears.

2. Choose a destination server and database from which to transfer backup copies of your tables.

   Note:

   The source server and the destination server can be the same, but the database must be different.

3. Turn off the Transfer All Objects option, but keep all of the other default settings.

4. Click the Choose Objects button, choose the objects that you want to transfer and then click OK to return to the Database/Object Transfer form.

5. Click the Start Transfer button.

   The Database/Object Transfer tool moves your objects.

6. Perform either of the following to verify whether the backup was successful:

   - When the process completes the transfer, you can click the View Logs button to review the transfer process.

   - Run a SELECT statement to verify that your backup tables transferred to the new database with data.

► To restore a backup file for SQL Server on Windows NT

Verify that the Select Into/Bulk Copy option on the Options form is turned on for the database into which you will transfer objects. Double-click the database in the SQL Enterprise Manager tree structure to access the Options form.

1. Generate scripts for the tables you want to restore and then drop the tables.

2. Use SQL to re-create the scripts for the tables.

3. From the command line, type the following command:

```
bcp [[database_name.]owner.] table_name(in|out) datafile /n /u /p /s
```

4. Perform a SELECT statement to verify that your backup tables populate with data.

Snapshot

The SnapShot application enables you to install multiple versions of ERP 8.0 on a single workstation. Use SnapShot to rename the ERP 8.0 installation directory, named \B7 by default, and to move various files and registry settings to the renamed directory. Once you rename the ERP 8.0 installation directory, you can install a new version of ERP 8.0 without overwriting the previous version. SnapShot also allows you to switch between the versions without requiring you to perform any administrative tasks.

This section contains the following:
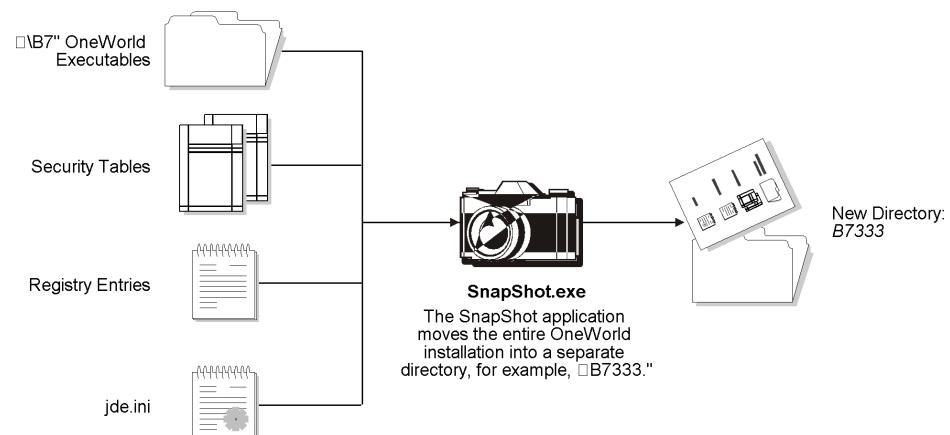
❑ Using SnapShot

Using SnapShot

The SnapShot application enables you to install multiple versions of ERP 8.0 on a single workstation. You can use SnapShot to rename the ERP 8.0 installation directory, named \B7 by default, and move various files and registry settings to the renamed directory. Once you rename the ERP 8.0 installation directory, you can install a new version of ERP 8.0 without overwriting the previous version. SnapShot also allows you to switch between the versions without requiring you to perform any administrative tasks.

To run ERP 8.0, you cannot begin an instance from the SnapShot file. You must first restore the SnapShot file to a true ERP 8.0 installation before you can run ERP 8.0 from that installation.

The following illustration provides an example of the SnapShot process:

Complete the following tasks:

- Save ERP 8.0 in a SnapShot file
- Restore a SnapShot
- Delete a SnapShot
- Run SnapShot from the command line

Before You Begin

❑ Before you run SnapShot, copy SnapShot.exe to another directory outside the \B7 directory. If you try to run SnapShot from inside the \B7 directory, with ERP 8.0 open, or with a ERP 8.0 directory open, you will receive an error message.
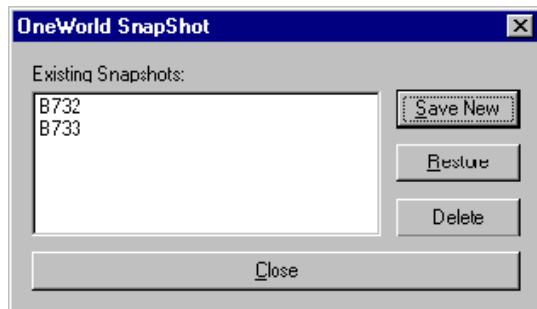
▶ **To save ERP 8.0 in a SnapShot file**

1. Run SnapShot.exe.

   The default directory for SnapShot is \B7\SYSTEM\Bin32.
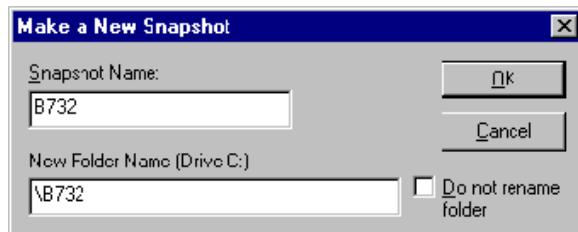
The ERP 8.0 SnapShot form appears.

On this form you can review a list of previously created SnapShot files, create a new SnapShot of ERP 8.0, restore a SnapShot file to a working installation of ERP 8.0, or delete a SnapShot file.

2. Click the Save New button.

The Make a New SnapShot form appears.

On this form, you can define the name of your SnapShot file and determine the folder name where your SnapShot file will reside.

3. Click OK to complete the SnapShot.

   Your new SnapShot file appears in the listbox on the ERP 8.0 SnapShot form.

4. You can now install a new version of ERP 8.0 either by installing a new package on the workstation or restoring another SnapShot file.

► **To restore a SnapShot**

1. Run SnapShot.

   The ERP 8.0 SnapShot form appears. On this form you can review a list of previously created SnapShot files, create a new SnapShot of ERP 8.0, restore a SnapShot file to a working installation of ERP 8.0, or delete a SnapShot file.

2. From the listbox, select a SnapShot to restore and then click the Restore button.

   SnapShot restores your ERP 8.0 installation and removes the SnapShot file name from the listbox.

   Note:

   If a viable installation of ERP 8.0 exists on the workstation, SnapShot prompts you to save the current installation to a SnapShot directory before you restore the alternative installation.

► **To delete a SnapShot**

1. Run SnapShot.

   The ERP 8.0 SnapShot form appears. On this form you can review a list of previously created SnapShot files, create a new SnapShot of ERP 8.0, restore a SnapShot file to a working installation of ERP 8.0, or delete a SnapShot file.

2. From the listbox, choose a SnapShot to delete and then click the Delete button.

   SnapShot deletes the directory that stores your SnapShot file and removes the SnapShot file name from the listbox.

Running Snapshot from the Command Line

You can run SnapShot from the command line for batch processing, and the implementation of shortcuts that automatically save and restore SnapShot files.

► **To run SnapShot from the command line**

Enter one of the following commands in the command line:

- To save the current installation of ERP 8.0 in a SnapShot file:

```
SnapShot [/SSnapShot name]
```
You do not need to specify a SnapShot name when you save an installation. If you do not specify a name when you save ERP 8.0 in a SnapShot file, the current version of ERP 8.0 will be used to define the name for the SnapShot, such as B732.

- To restore a SnapShot file:

```
SnapShot [/RSnapShot name]
```
You do not need to specify a SnapShot name when you restore an installation. If you do not specify a name when you restore a SnapShot file, you must specify a target directory in which to locate the SnapShot file.

Note:

For SnapShot names that contain embedded spaces, enclose the entire name in quotation marks.

Depending on your needs, you can also use the following switches in the command line:

- /U - This switch disables the user interface, including warnings and errors. Use the following syntax:

```
SnapShot [/SSnapShot name] [/U]
```

```
SnapShot [/RSnapShot name] [/U]
```

- /D - This switch informs SnapShot not to rename the installation directory. Use this switch when ERP 8.0 resides in uniquely named directories. Use the following syntax:

```
SnapShot [/SSnapShot name] [/D]
```

```
SnapShot [/RSnapShot name] [/D]
```

- /A - The Disable Autosave switch turns off the autosave feature in SnapShot. By default, when you restore a previous ERP 8.0 installation, SnapShot automatically saves the current active ERP 8.0 installation. When you turn on the Disable Autosave switch, SnapShot overwrites the current active installation with the restored ERP 8.0 SnapShot file.

```
SnapShot [/RSnapShot name] [/A]
```

- /T - This switch designates the target directory where you save your SnapShot file. If you do not specify a SnapShot name in the /R switch, you must specify a target directory. For a target directory with an embedded space, enclose the entire name in quotation marks. Use the following syntax:

```
SnapShot [/R] [/Ttarget dir]
```

Database Driver Files

For each combination of platform and database, you must use a unique database driver file. This file is specified in the [DB SYSTEM SETTINGS] section of the enterprise server jde.ini file. The following table lists the driver file for specific machines and databases:

Platform	Database	Driver File
AS/400	DB2/400	DBDR
AS/400	any other server DBMS	JDBNET
HP9000	DB2/400	libjdbnet.sl
HP9000	Microsoft SQL Server	libjdbnet.sl
HP9000	Oracle (Version 8.0.5 and 8i) UNIX	libora80.sl
RS6000	DB2/400	libjdbnet.so
RS6000	Microsoft SQL Server	libjdbnet.so
RS6000	Oracle (Version 8.0.5 and 8i)	libora80.so
Sun Solaris	Oracle (Version 8.0.5 and 8.i)	libora80.so
Sun Solaris	DB2 and SQL Server	libjdbnet.so
Windows NT	AS/400	jdbodbc.dll
Windows NT	Oracle (Version 8.0.5 and 8i) NT	jdboci80.dll
Windows NT	SQL Server NT	jdbodbc.dll
Compaq AlphaServer	AS/400	jdbnet.dll
Compaq AlphaServer	Oracle (Version 8.0.5 and 8i) NT	jdboci80.dll
Compaq AlphaServer	SQL Server NT	jdbodbc.dll

Generating Serialized Objects for the ERP 8.0 Web Server

In order to run a ERP 8.0 web server, you must generate serialized objects, using the appropriate set of ERP 8.0 specifications, so that the server has access to the objects. To generate serialized objects for the web server, your developers must install and use the Java & HTML Generator, a ERP 8.0 tool that turns ERP 8.0 specifications into Java code. Java code allows you to generate ERP 8.0 applications in Java, HTML, or both. The ERP 8.0 forms and applications that you generate using the tool are Java or HTML objects. ERP 8.0 stores the objects in a database and retrieves them at runtime.

You can also deliver the objects from a set of pre-generated, pristine objects that are automatically loaded into two tables (F989998 and F989999) when you install ERP 8.0. If you install a pristine set of ERP 8.0 objects or an upgraded an environment with few or no custom modifications, the best choice is to deliver the pre-generated objects.

See the *Java Server Installation Guide* for details on delivering a set of pre-generated, pristine ERP 8.0 JAS objects.

Before You Begin

- ❑ Ensure that the developers who will use the Java & HTML Generator have installed and are running a Win32 (fat) client. For instructions on installing a Win32 client, see *ERP 8.0 Installation Guide for Windows NT-Based Systems*.

- ❑ Set the default storage parameter on your ERP 8.0 database so that you have enough space to transfer all the standard ERP 8.0 Java objects. See *ERP 8.0 Java Server Installation Guide (Windows 2000/NT-Based Systems)* for details.

Setting up the Win32 Client to Generate Serialized Objects

With a Win32 client installed you are ready to begin the process of generating serialized objects. The Win32 client is the machine you will use for the generation of serialized objects.

▶ **To set up the Win32 client to generate serialized objects**

1. In Windows NT Explorer, find the directory that stores the jde.ini file.

2. In the [INSTALL] section of the jde.ini file, add the following parameter and value:

```
WebAdmin=1
```

Setting the value for this parameter as 1 means that you will be able to view and use the eight tabs in the Java & HTML Generator, thus enabling the generation of all serialized objects for the default user.

3. Click Save.

Copying the Jas Build to the Generation Machine

After you have set up the Win32 client, you copy to this machine the JAS build you want to use to generate serialized objects. In most cases, the System directory on the JAS build contains all the files you need to run ERP 8.0 properly.

► To copy the JAS build to the generation machine

1. On the Java server, share the drive that includes the JAS directory (located in the path JDEdwardsOneWorld\B7334\internet\JAS).

2. On the ERP 8.0 client machine that you will use to generate Java objects (your generation machine), map to the shared drive on the Java server.

3. On the generation machine, open a command prompt and create the following new folder under the \B7 directory:

```
\B7\tempjar
```

4. On the Java server, locate the following files:

```
JAS.JAR

Collections.jar

OWResources.jar

gen.bat
```
These files are typically located in the following directory:

```
\JDEdwardsOneWorld\B7334\JAS
```

5. Copy the .jar and .bat files from your web server to the tempjar directory on your generation machine.

6. On your Java server, locate the following file:

```
genapp.ini
```
This file is typically located in the following directory:

```
\JDEdwardsOneWorld\B7334\JAS
```

7. Copy the genapp.ini file from your Java server to the following directory on your generation machine:

```
C:\WINNT
```

Preparing ERP 8.0 for Serialized Objects

Before you generate serialized Java objects in ERP 8.0, you must populate the Data Dictionary and global specs on the Java generation machine.

► To populate the data dictionary

1. On the Java generation machine, log on to a valid environment in ERP 8.0.

2. In the Fast Path, type BV and press Enter.

3. On Batch Applications - [Work with Batch Versions - Available Versions], type R92TAM in the Batch Application field and click Find.

4. Choose the XJDE001 version and click Select.

5. On Batch Applications - [Version Prompting], click Advanced on the Form menu.

6. On Batch Applications - [Advanced Version Prompting], choose Override Location and click OK.

7. On Batch Applications - [Version Prompting], click Submit.

8. On Batch Applications - [JDE Data Sources], choose Local and click Submit.

    The application starts a UBE that populates databases stored in the x:\B7 directory. This process runs for an hour or more.

9. When the process is complete, copy the following files from the x:\B7 directory to the \spec directory under the path code of the environment you will use to generate the serialized Java objects (for example, x:\B7\PY7334\spec):

    - dddict.xdb

    - ddtext.xdb

    - dddict.ddb

    - ddtext.ddb

► **To populate the global specs**

1. In the Fast Path, type BV and press Enter.
2. On Batch Applications - [Work with Batch Versions - Available Versions], type R98CRTGL in the Batch Applications field and click Find.
3. Choose the XJDE001 version and click Select.
4. On Batch Applications - [Version Prompting], click Advanced on the Form menu.
5. On Batch Applications - [Advanced Version Prompting], choose Override Location and click OK.
6. On Batch Applications - [Version Prompting], click Submit.
7. On Batch Applications - [JDE Data Sources], choose Local and click Submit.

    The application starts a UBE that runs for an hour or more.

Generating Serialized Objects

You need to generate all serialized objects after you initially promote the JAS build. The Java & HTML Generator, once it is installed on your Win32 client with a JAS build, can generate objects of compiled Java bytecode, and you have access to all ERP 8.0 objects when you run your Java server.

For additional details on running the Java & HTML Generator, see *Generating Web Applications* in the *ERP 8.0 Development Tools* guide.

► **To generate serialized objects**

1. From your generation machine, log off of ERP 8.0.
2. Under the /JAS directory on your generation machine, run gen.bat.

    This batch file calls an initialization file called genapp.ini. You use this file to configure specifications applications for serialized object generation.

Note:

Ensure that the genapp.ini file is located in the WINNT directory on your generation machine before you run gen.bat.

3. Log on to a Java environment in ERP 8.0 (for example, JPY7334).

Note:

Verify the system displays the message "Login to the server successful" in the DOS window before you proceed. This message can take up to 10 minutes to display.

4. On Java & HTML Generator Version 2.0, complete the following field:

- Web Server Name: Type the name of your ERP 8.0 Java Server.

Note:

If you are running multiple web server ports on your generation machine, type machine name:port, where "machine name" is the name of your generation machine and "port" is the port number.

5. Click the Advanced Settings button.
6. In the Log Files window, type the name and path to the Status Log and Error Log files and click OK.
7. Choose the Generate all objects option.
8. Choose the following options and click OK:

- Business Views
- Tables

The system generates all ERP 8.0 business views and tables.

9. Verify the DOS window indicates the generation process has completed successfully.
10. Choose the Generate all objects option.
11. Choose all options except Business Views and Tables and click OK.

The generation process takes about five to ten hours, depending on the speed of your generation machine.

12. Verify the DOS window indicates the generation process has completed successfully.

Note:

If you are upgrading the Java server from a previous release, stop and restart the virtual web host after the generation process is complete. For details, see the *ERP 8.0 Java Server Installation Guide (Windows 2000/NT-Based Systems)*.

Executable Files on the Workstation

The following tables present an alphabetical list of executable files in the workstation system/bin32 directory. Each table includes a description of the executable file and instructions on how to run it.

ERP 8.0-Linked Executable Files

The executables listed in the following table are:

- Called by other ERP 8.0 programs

- Called by the ERP 8.0 kernel

- Have no value if run independently of ERP 8.0

- Will not run unless called by ERP 8.0

Executable	Description	Call Details
Ap22.exe	ERP 8.0 uses this program to display spreadsheets in a dialog box. This executable is obsolete and has no function in SP10 and beyond.	Obsolete
BLC2Text.exe	ERP 8.0 uses this program to read workstation JDEBLC spec files and generate a text file with details about each Business Function source file listed in the spec file.	Called by an internal Business Function build program that is not shipped to customers.
Dir2txt.exe	This program takes a path and a text file name as arguments and places the directory name of the highest branch in the path into the text file.	Called from makefiles generated by BusBuild.
Drilldwn.exe	ERP 8.0 uses this utility when generating Balance Auditor functions in Tabular reports.	Called by the ERP 8.0 UBE kernel.
DSArguments.exe	ERP 8.0 uses this utility program to create a CID argument when attempting to connect to a ERP 8.0 Data Source.	Called by ERP 8.0 kernel.
GBLib.exe	The ERP 8.0 process BusBuild uses this program to determine if object files exist.	Called from makefiles generated by BusBuild.
Guimole.exe	ERP 8.0 uses this program to create a bridge between the workstation and the AS/400 server. This allows green screens to be displayed through ERP 8.0.	Called by ERP 8.0 kernel.
InstMon.exe	ERP 8.0 uses this program during sign-on to install update packages if an update package is selected.	Called by ERP 8.0 kernel.

Executable	Description	Call Details
JDEGenEx.exe	This program generates a list of exports for each dll.	Called from makefiles generated by BusBuild.
Rtt.exe	J.D. Edwards ships this program for use by business partners only. ERP 8.0 uses this program to build resource files for language translation. The risk is that the existing resource files could be confused with the newly generated files. The user would have to intentionally continue through multiple screens for this to happen.	Do not use this program.
Servermon.exe	This is an obsolete J.D. Edwards-internal tool that was created prior to the SAW interface for monitoring the server. It sent email alerts to specified users when events occurred on the servers.	Obsolete Call by an internal script.
Ubemon.exe	This program monitored long running UBEs and reported their completion. This program is obsolete and was disabled in SP10.	Obsolete
Vdt.exe	This is a Business View Design Tool. It creates business views when called from Object Librarian or Object Management Workbench.	Called from Object Librarian or Object Management Workbench
owptrl_cli.exe	**owptrl_cli** is the communication bridge between **BMC Patrol Monitoring Tool** and **ERP 8.0 Enterprise** and/or **WEB Servers**. **owptrl_cli** converts SAW data to BMC data so the Agent will understand. The Agent sends a request to the owptrl_cli (for example: give me the list of all processes running on HP9000B port 6012). The owptrl_cli returns detailed information about all the processes running on the Server in a format known by the Agent. That's how BMC can monitor ERP 8.0 Servers.	Called by **BMC Patrol Agent** with a predefined argument list.
DbidCapture.exe	This is a utility program that is called by Autopilot or EventCapture to capture database ids necessary for Autopilot to access ERP 8.0 tables. It is not an end user program and has no purpose apart from Autopilot or EventCapture.	Called by Autopilot or EventCapture.
ubeprint.exe	ubeprint.exe is not for direct customer use, although the ERP 8.0 product suite does use it.	Called by ERP 8.0 kernel.
genver.exe	genver creates the win32 version information for our build process.	Called by ERP 8.0 kernel.
poda.exe	PODA stands for Processing Option	Called from OMW

Executable	Description	Call Details
	Design Aid. All design tools are client side only. (OMW passes the executable a set of parameters similar to RDA, TDA, BDA.).	when you design a processing option.
RDA.exe	RDA stands for Report Design Aid. (OMW passes the executable a set of parameters similar to PODA, TDA, and BDA. All design tools are client side only.	Called from OMW when you design a batch application. RDA can also be opened without command line parameters
guimole.exe	This is a secondary executable called to pass parameters into the WorldVision session	Called by WorldVision.
FDA.exe	Form Design Aid is used to create interactive applications. FDA is currently configured to run on a fat client.	Called from the design window in OMW for an application
JdeCabExtract.exe	JDECabExtract creates self-extracting .exe's.	JDEdwards internal tool.
JdeCompress.exe	JdeCompress creates JDEdwards compatible cabinet files.	JDEdwards internal tool.
krnlspec.exe	Generates jdekrnl.xdb and jdekrnl.ddb specs from the pristine database. This is an internal JDEdwards tool.	JDEdwards internal tool.
netmon.exe	Netmon is the very first (primitive) monitoring tool for ERP 8.0 Enterprise Servers. It sends requests to different Server Kernel processes to verify that they are running. It is obsolete and has been replace by SAW.	Obsolete
pssg.exe	It is obsolete and is not called by any ERP 8.0 applications.	Obsolete
GLBUILD.exe	It is obsolete and has been replace by Busbuild.exe. It was used to build the business functions.	Obsolete
krnlspec.exe	This is used to generate jdekrnl.xdb and jdekrnl.ddb specs from the pristine database. This is an internal JDEdwards tool.	JDEdwards internal tool.
XFDA.exe	XFDA.exe only exists in B9. It is the old FDA executable that has been restructured and saved for testing purposes. It may be included in some beta releases of B9 but will not be released with the GA version.	Test only -- Obsolete

Standalone Executable Files

You can run the following executable files directly from either the command line or through Windows Explorer.

Executable	Description	Run Instructions
JDECOMConnector2.exe	This program sets up COM connections to the server using the COM Connector product and only works in that context. Contact Customer Support for full documentation.	Run from the command line with a -regserver option
LogViewer.exe	This program employs a user-friendly interface to view and modify plain ASCII ERP 8.0 files such as: • jdedebug.log • jde.log • olt.log • jde.ini	Double click on the executable.
MOConv.exe	This utility converts all records to use a period as the decimal separator. Use this utility when records are entered into a single table using both commas and periods as decimal separators. The utility is driven by the MOConv.ini file.	Exit ERP 8.0 then double click the executable.
Nettest.exe	This utility tests basic JDENET connectivity using the "netecho" function against an Enterprise server. Enter the name of the Enterprise server in the Host Name box and press "Send." The returned data indicates success or failure.	Double click Required argument: Enterprise Server Name
Regdlls.exe	This program adds the following dynamic link libraries (DLLs) to the registry: • jdetapitest.dll • jdetapicomtek.dll You should register these DLLs before using RunTAPI.exe.	Run from a DOS window in the ERP 8.0 system/bin32 directory.
RunTAPI.exe	This program controls interoperability between ERP 8.0 and telephone switching systems. It is a snap-in (harness) to ComTech's CTI Server objects. It requires jde.ini file changes and Regdlls.exe before it can be run. Contact Customer Support for full documentation.	Double click
SABridge.exe	This Object Export Facility displays	Double click the

Executable	Description	Run Instructions
	the names of the ERP 8.0 objects along with their descriptions and corresponding product codes.	executable.
SnapShot.exe	This program manages multiple workstation installations on the same PC. You can install a new instance of ERP 8.0 by clicking Save to store the current workstation installation in a newly named location. You can click Restore to toggle between the current and saved versions.	Exit ERP 8.0 then double click the executable.
VerifyOCM.exe	This program reads the OCM tables from the database and verifies the mappings in OCM are correct.	Run from a DOS window. Required arguments: • ERP 8.0 user • ERP 8.0 password • ERP 8.0 Environment
Vercheck.exe	This program displays, on one screen, the properties of all the files in a directory. The properties are the same as those displayed when you right click on a file and select "Properties".	Open a DOS window, change the directory to the desired target, and double click the executable.
GenCOM.exe	This program generates COM wrappers for the business functions specified in the script.	Run GenCom.exe from the command line with the name of the script file.
GenCORBA.exe	Creates CORBA wrappers around ERP 8.0 business functions. This is a command line utility that requires a script file as an input. This tool is documented in detail in the Interoperability Guide. GenCORBA generates COBRA interfaces for ERP 8.0 business functions.	Syntax: GenCORBA[options] [libraires] Example: GenCORBA /Cat /UserID Devuser1 /Password Denuser1 /Environment ADEVHPO2 CAEC
GenJava.exe	ERP 8.0 GenJava provides access to ERP 8.0 business functions by generating pure Java interfaces to therm.	run GenJava Syntax GenJava [options] [libraires] Example: GenJava /Cat /UserID Devuser1

Executable	Description	Run Instructions
		/Password Denuser1 /Environment ADEVHPO2 CAEC
LaunchUBE.exe	LaunchUBE.exe is used to launch the UBE job stand-alone (not going through ERP 8.0). It replaces the User Interface of UBEPrint.exe.	Double click the executable or start via the command line.
oexplore.exe	**"It is obsolete"** used to start ERP 8.0 FAT client.	Double-click the executable.
Autopilot.exe	**Autopilot** is the centerpiece of all our (J.D.Edwards ERP 8.0) automated testing tools. With Autopilot a person can script ERP 8.0 applications to run automatically, and save the scripts to run many times. Autopilot is used throughout the company and by many customers for a wide variety of purposes.	Normally started from a desktop icon or from the Start menu without command line options.
EventCapture.exe	**EventCapture** is a small program that can be activated alongside ERP 8.0 (in lieu of Autopilot) to capture performance and debugging information. EventCapture is often used in place of Autopilot because it is simpler and quicker than creating an Autopilot script for a single use. With EventCapture, the user drives ERP 8.0, unlike Autopilot in which the script drives ERP 8.0.	Normally it is started from a desktop icon or the Start Menu without command line options.
APTestMgr.exe	(Autopilot Test Manager) is used to run multiple Autopilot scripts in a batch, and to manage batches for repeated execution. It has some ability to summarize results, and is frequently used in regression testing.	Normally it is started from a desktop icon or from the Start Menu without command line options.
VSMerge.exe	Visual ER Compare Tool is used to compare and merge Event Rules(ER) for ERP 8.0 Applications, Reports, Table Conversions, NERs(Named Event Rules) and TERs(Table Event Rules). It can also be used to compare and merge C Business functions.	You can launch Visual ER Compare tool from OMW or from the command line.
VSMEditor.exe	VSM Editor is a rarely-used GUI tool that creates .VSM files. VSM files are "super scripts" that name one or more virtual Autopilot scripts to be executed in succession by VAPPlayer.	Normally VSMEditor is run by double clicking *vsmeditor.exe* in bin32.

Executable	Description	Run Instructions
VirtualRunner.exe	VirtualRunner is a GUI tool for controlling multiple VAPPlayer processes on a single workstation.	Run the tool from a shortcut on the desktop or in the Start Menu. This tool does not use command line arguments.
vapplayer.exe	Virtual Autopilot Player allows you to simulate multiple concurrent ERP 8.0 users on a single workstation. It is used primarily for concurrency testing during development, and performance/scalability testing for ERP 8.0 applications. VAPPlayer requires a proper vap.ini (initialization) file. VAPPlayer has many command line arguments, which are optional if vap.ini is fully utilized. See documentation for details. VAPPlayer has no user interface. It produces output in log files.	VAPPlayer may be run from a command line, from VirtualRunner's graphical user interface, or from the Mercury LoadRunner (third party) software console.
VAPPerf.exe	VAPPerf is better known as ERP 8.0 Analyzer, and has been renamed as *Analyzer.exe* in B9. It is a powerful instrument used to analyze performance data and other debugging information generated by a ERP 8.0 application run under Autopilot or EventCapture.	Create a desktop icon or Start Menu icon. No command line arguments are used.
UTBrowse.exe	UTB is a tool used for viewing the records in tables. We also use it to view local ERP 8.0 object specifications. UTBrowse.exe uses 2 libraries that are in the bin32 directory: 　datautils.dll 　envtool.dll.	Type UTB in the ERP 8.0 fast path, or click on the executable.
tda.exe	Use TDA is to modify ERP 8.0 tables.	On the Command Line, type tda.exe -id*tablename* (where *tablename* is the name of the table you want to modify, for example, F0101). There is no need to run ERP 8.0 prior to running tda.

Executable	Description	Run Instructions
tc.exe	Tc.exe opens the ERP 8.0 Table Conversion Design Tool. This tool is used to design ERP 8.0 Table Conversion batch applications.	Double click the executable, or execute it from the command line using the optional parameter "id*XXXX*", where *XXXX* is the name of an existing Table Conversion object.
Tamvrfy.exe	tamvrfy checks the integrity of all the tam files listed in the tamvrfy.lst.	Double click on the executable.
tamtool.exe	tamtool can perform the following functions: • Recreate a tam file • Copy a tam file • Print index information • Print the index key • Verify the tam file.	Run from the command line.
tampack.exe	TAMPACK.exe is a backup utility in case TAMFTP.exe does not work for the customer. TAMPACK.exe has about half the functionality of TAMFTP.exe. TAMPACK.exe is included with the workstation and the deployment server. TAMPACK.exe creates a translated copy of TAM files (RDASPEC.DDB, GBRSPEC.DDB, etc.) on the PC. The translated copies are known as "pack files". Once the program is finished, the user can manually run "ftp.exe" to transfer them to a remote enterprise server. Once the pack files are on a remote enterprise server, the user can "unpack" them on the enterprise server.	You must run TAMPACK.exe from a DOS shell and pass in parameters.
ServerAdministrationWorkbench.exe	Starts the SAW interface.	Double click the executable.
tamftp.exe	TAMFTP.exe comes with the workstation and the deployment server. TAMFTP.exe transfers TAM files (RDASPEC.DDB, GBRSPEC.DDB, etc) from the PC to	You must run the program from a DOS shell and pass it parameters.

Executable	Description	Run Instructions
	a remote enterprise server that is operational.	
pdf2pdl.exe	pdf2pdl is an MFC application that converts PDF files into files containing the printer-specific protocol language for a selected ERP 8.0 printer. This application is only intended to allow development to troubleshoot problems with a customer's ERP 8.0 output. The tool can help solve configuration problems.	Double click the executable.
pdfcompare.exe	Displays the objects in the PDF document as a list and compares them.	Double click the executable.

Troubleshooting the Workstation

Use this section as a general guide for basic troubleshooting techniques on the ERP 8.0 workstation. In order to troubleshoot problems, you will need a thorough understanding of the interactive error messages, ERP 8.0 Message Center, the logging process, and associated log files.

This section provides solutions to the following potential problems that you could encounter on the workstation:

- Error message appearing at the bottom of a form (press F8 or click the Display Errors button to view an error description)
- Report batch process:
  - Report does not show any data. It just shows the report headers and the text "No Data Selected."
  - Batch process shows errors on the report.
  - Batch process gives unexpected data on the report.
- Environment issues:
  - Works when the batch process or business function is run locally, but not when it is run on the enterprise server.
  - For store and forward operation, data entered to the local database is not moved to the server as expected.
  - Missing tables
- Data source setup problems:
  - Unable to connect to the enterprise server environment.
  - Data is displayed incorrectly on the interactive form or batch report.

See Also

❑ *Running the Verify Object Configuration Manager* in the *Object Configuration Manager* section of the *Configurable Network Computing Implementation Guide* for the directions on running the Verify OCM report.
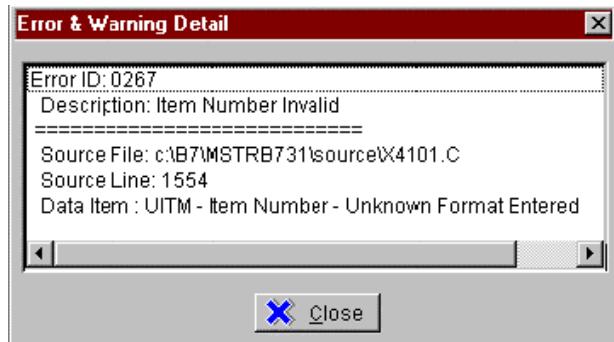
Understanding ERP 8.0 Error Messages

There are a variety of error messages that are provided while using ERP 8.0. This chapter explains the nature of some of these error messages to help you correct the errors that are occurring or determine the exact steps that caused the error.

Looking At Error Message Details

When you encounter an error, right-click the error in the error message window and choose Detail to provide additional information about the error. This information provides the source file and the source line that turned the error on. If you try to set up an Item/Branch record in P41026 with an invalid item number, you will receive error number 0267 (Item Number Invalid).

Message details provide the following information:

When indicating the source file that generated the error, the entire path of the source location is provided. In this example, the source file is c:\B7\MSTRB733\X4101.C, and the business function X4101 created the error. The other pieces of the path are directory names. The important information in this example is the file with the extension .C (X4101.C).

If the detail for your error includes the name of your source file, you can identify the process that the file performs to determine what might occur to cause an error. For example, the name of the source file might include system code that indicates the process performed by the file. The process might attempt to run in a module that is not fully functional. The cause of the error might be a constant set to perform a function that is currently unavailable. Once you turn off the constant, you avoid the error.

Note:

If you see a source file description that begins with c:\B7\SYSTEM, the error did not occur through a business function. The error possibly occurred through an event rule or by the tool while automatically triggering a data dictionary edit.

Look above the source line for conditional statements that determine whether to turn on the error message. Look for table names to see if the program attempts to retrieve data. Look for other programs that the program might call. Also, read the programmer comments included in the source, which might provide a literal explanation of why the code issues an error.

Also look at the data item that caused the error. The data item represents a control on the form. If you get a Blanks Invalid error without an indication of what field you left blank, look at the data item in this error detail box to see which control triggered the error. The field that contains the error might be a hidden field. For example, if you process a transaction that requires a supplier number determined by an Item/Branch combination decided by ERP 8.0 (not by a value you define on the form) but no supplier number exists for the Item/Branch combination, ERP 8.0 returns the Blanks Invalid error. The field for supplier number does not appear on the form, so the cause of the error is not readily apparent. The data item might alert you to the hidden field and help you resolve the error.

Error Messages Generated By Applications

These are error messages that are maintained in the data dictionary that are set intentionally to inform the user that something is wrong. The error might indicate that something is not set up properly or the user is attempting to perform an invalid action. There are three things that can help when the error message itself does not indicate exactly what is wrong. Examples of

these kinds of errors include Record Invalid and Blanks Invalid. In addition, some generic errors that lack applicable descriptions occur. Techniques will also be discussed to troubleshoot these errors.

Frequent Generic Error Messages

Some error messages are too generic to immediately explain an error. Examples are "Null Pointer" and "File Can Not Be Accessed". The full descriptions of these error messages do not provide much information in the way of how to resolve the problem.

To troubleshoot generic errors, retrace the exact steps that led to the original error. The goal is to try to reproduce the error. If you cannot duplicate an error condition, then the application is accessing different lines of code from when the error occurred. Also look at the information in the error detail box, such as the source file, the source line, and the data item.

Memory Violations

Memory violations occur when you encounter memory leaks in an application. A memory leak is a bug that prevents a program from freeing memory that the program no longer needs. The program continues to consume more memory until no memory remains, and the program crashes. ERP 8.0 applications set aside memory for various things while they run. When the application no longer needs that memory, the application should free the memory for other applications to use. When an application does not properly free memory or when an application attempts to use invalid memory, you receive a memory violation.

You can troubleshoot these errors using the following techniques:

- Look at the jdedebug.log to find information about the processing that occurred at the time of the error, such as programs called and tables accessed.

- Follow the exact steps that led to the error to reproduce the memory violation. If you cannot duplicate violation, then the application is accessing different lines of code from when the violation occurred. Also look at the information in the error detail box, such as the source file, the source line, and the data item. With UBEs, if the UBE uses a business function that causes memory violations, the UBE will just stop. In these cases, the ube.log is the only way you can find out what failed.

Form and Grid Add Failures

The following two error messages appear, indicating that an attempt to add a new record to the database failed. The first message indicates that an add within a fix/inspect form failed. The second message indicates that an add within a grid failed. If you receive these errors, you could be attempting to add a duplicate record.
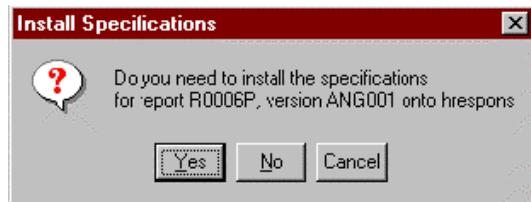
- Attempt to add form record failed.

- Attempt to add grid record failed.

The jde.log is a helpful reference when having problems with these errors. It generally includes very detailed information about the table into which the user attempted to add a duplicate record.

Communication Failure

When submitting batch processes onto a server, you may receive an error that a communication failure has taken place.

When you submit a batch job onto a server, you are first asked if you would like to install the specifications. The window prompting you looks like this:

If the job is submitted successfully, ERP 8.0 reverts to the initial form.

Troubleshooting the Production Workstation

The troubleshooting procedures that you use on a workstation depend on whether the workstation is a production or development machine. Production machines contain only ERP 8.0 applications, so the scope of problems that can occur is limited. In addition to containing prebuilt ERP 8.0 applications, development machines are equipped with ERP 8.0 and third-party tools. These tools enable developers to create, modify, compile, generate, and troubleshoot ERP 8.0 applications.

Performing Preliminary Troubleshooting

As a system administrator, you can perform some preliminary troubleshooting on your production workstation to verify the nature of the problem. You will also want to isolate problems to a user's particular workstation and environment.

► **To perform preliminary troubleshooting**

1. Determine whether you can consistently duplicate the problem.
2. If so, restart the current application.
3. If the error recurs, restart ERP 8.0.
4. If the error recurs, reboot the workstation.

    These steps clear any memory or caching problems with the workstation.

Troubleshooting Interactive Application Problems

Generally, when you are running an interactive application, the system displays errors at the bottom of a form. The system highlights (in red) the fields in error. You can choose Details on an error message to see information about where the error was set. For example, if the error resulted from within a business function, the system displays the business function and line number where the error was set.

If the errors encountered cannot be resolved through the error messages received in the application, check the error messages in the log files for additional information. See *Working With the Workstation Log Files*.

If an application has stopped running, you may need to create or retrieve a new set of specifications for that application. You can overwrite a single application by building a partial
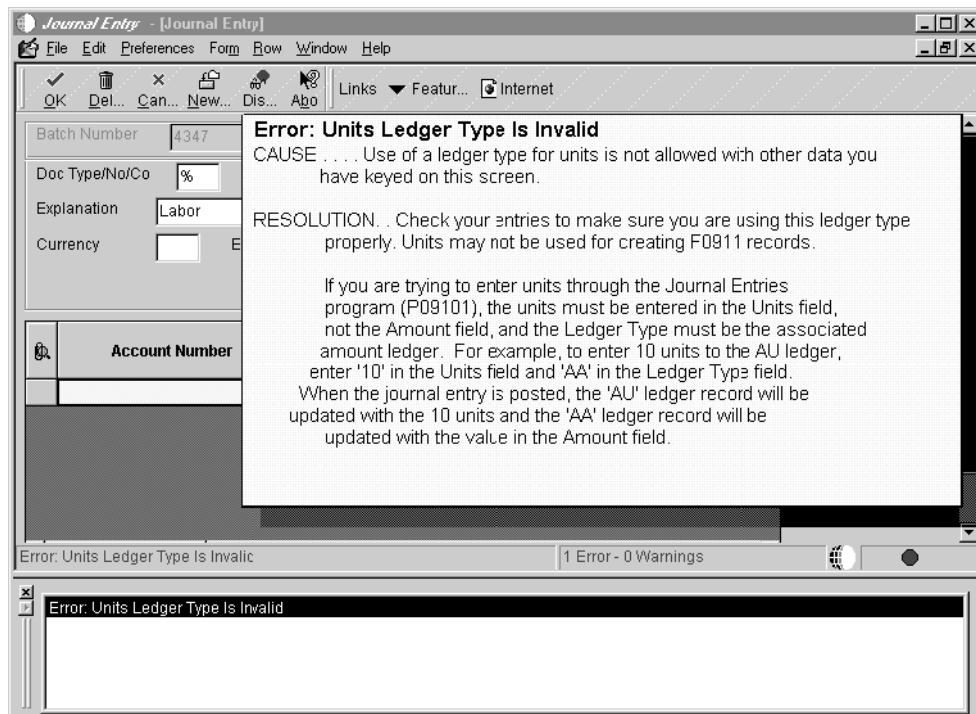
package and deploying that package. For details on building partial packages, see *Working With Packages* in the *Package Management Guide.*

► To troubleshoot interactive application problems

1. You can see the text of the message by choosing:

   - Display Errors from the Help menu selection

   - Display icon on the toolbar

   - F8

2. You can see the full description of an error message by right clicking and choosing Full Description. The system displays a full glossary of the error and generally includes some information on how to resolve the issues.

Example: Interactive Application Error

This example shows the full description of an error encountered in the Journal Entry application.

Troubleshooting Batch Process Problems

There are several potential problems that a user may encounter when attempting to run a batch process. For example, the output shows only the report headings or prints a message such as "No Data Selected".

If the result of a batch process is no data, there are several factors that could cause the problem.

This section contains the following tasks that provide solutions to these problems.
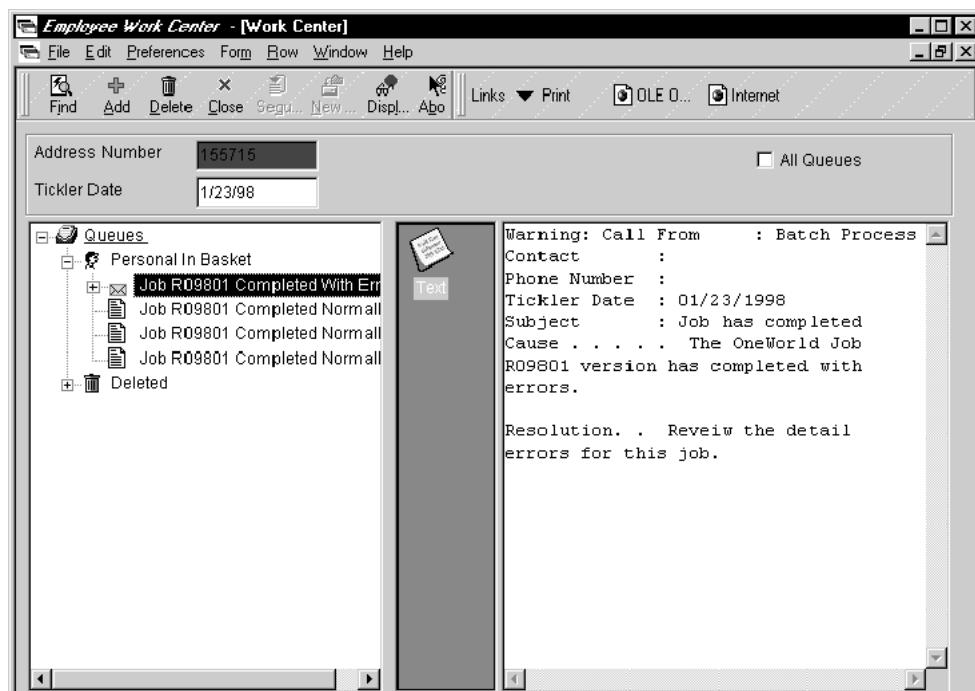
► **To troubleshoot batch processes resulting in no data**

1. Verify that the data selection on the batch process is appropriate and should result in data.

    Data selection on an item that has no data, such as an inactive company, or an incorrect value will result in a batch process with no data.

2. Check the Work Center to see if the batch process resulted in an error.

Most error messages are not printed on the report, but are instead sent as an e-mail message to the user who submitted the report.

These messages will give the user an example of why the batch process ended without producing the desired results. For example, when executing a G/L post that ends in error, the report will print only the report headings. All error messages are sent to the Work Center.

Upon exiting to the Work Center, the user receives error messages and glossary description that indicate why the batch process resulted in no data. Some error messages even include hot links that will exit the user directly to the appropriate interactive application to correct the error. See the *Enterprise Workflow Management Guide* for more information on the Work Center.

3. If checking the data selection and correcting any errors still does not resolve the issue, turn on the applicable logs and continue with the following steps.

4. Run your batch process, and locate the batch process log for the report you ran. ERP 8.0 names this log with the convention *report name_version_other identifiers*.log. This log is located in the local directory under \b7\PrintQueue. For example, if you ran report R04431, it would appear in your local directory, b7\PrintQueue, as follows:

```
R04431_XJDE0001_D960823_T104512.log
```

R04431_XJDE0001_D960823_T104512.log

5. View the log file using the ERP 8.0 Log Viewer or an ASCII editor such as Notepad or Wordpad. You should inspect the log for errors or failures of any kind. Also examine the SQL statements that are created by the batch process and verify that they should result in data on the report. The batch process log is your main source for debugging batch processes. However, you can look in your jde.log and jdedebug.log for errors or failures of any kind.

6. Verify that there is data in the tables for the database that you are accessing. You can use the ERP 8.0 tool called Universal Table Browser to directly view the database table. See *Universal Table Browser* in the *System Administration Guide*. You should also review the procedures for *Troubleshooting Local Data Availability Problems* and *Troubleshooting Enterprise Server Data Availability Problems* in this section*.
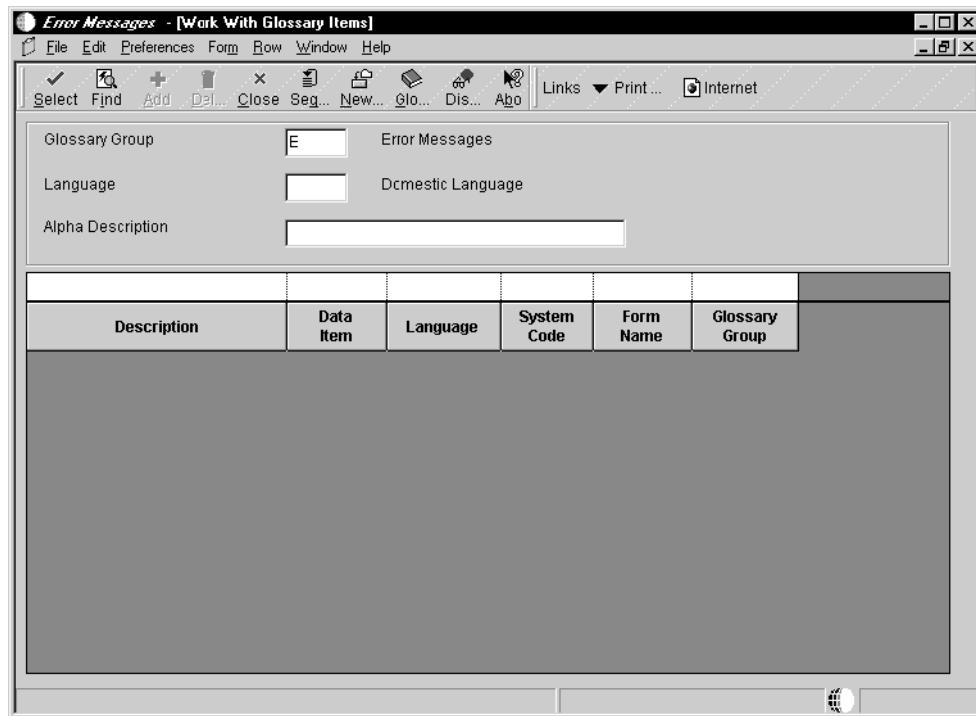
► **To troubleshoot batch processes showing errors on the report**
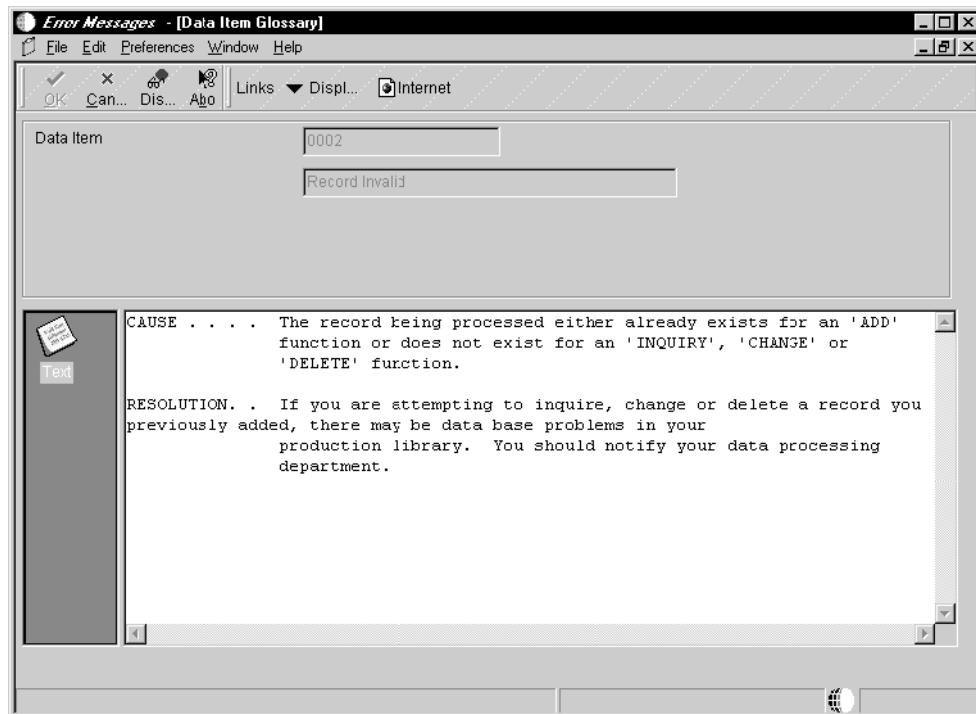
Some batch processes will give error messages directly on the report. These messages should include both the short description and error message number. You can view the full description of the error by opening the message in Data Dictionary Design.

1. On Data Dictionary Design (GH951), choose Error Messages (P92002).

The Error Messages form appears.

2. Complete the Glossary Group field.

   - Glossary Group

3. Complete the following optional fields:

   - Language

   - Alpha Description

4. On the grid, enter values in the Data Item field and click Find to narrow the search to your particular error code. For example, enter 0002 to search for the data item associated with the Record Invalid error condition.

5. To see an extended description of the error, choose Glossary from the Row menu.

► **To troubleshoot batch processes showing unexpected data on the report**

1. Verify that the data selection on the batch process is correct and should result in the data output expected.

2. Turn on the batch process log and run the report. Examine the report process flow and SQL statements to see why the data output on the report is selected.

► To troubleshoot batch processes ending in an error when submitted on the server

The default processing location for batch jobs is the server. If a job gives incorrect results or ends in error when run on the server, the problem could lie with the batch process or with the server.

1. Rerun the report, but override the location to execute on the workstation rather than the server.

   You should be aware that if this is a very large report, the processing may take a significant amount of time. You may want to select less material to speed up the processing time.

2. Verify if the outcome is the same as when the report was executed on the server. If so, use the other troubleshooting procedures for batch processing to resolve the issue.

3. If the report works correctly when executed locally, but not when executed on the server, see the *Troubleshooting the Enterprise Server* section for information on troubleshooting batch processes that execute on the server.

Troubleshooting Local Data Availability Problems

This procedure assumes that your database is a local Access database. This is generally the case with Store and Forward entry. You should use this procedure to determine if the expected data exists in the Access database.

As an alternative or in addition to these procedures, you can also use the Universal Table Browser to verify table structure and data availability. See *Universal Table Browser* in the *System Administration Guide* for more information.

► To troubleshoot local data availability problems
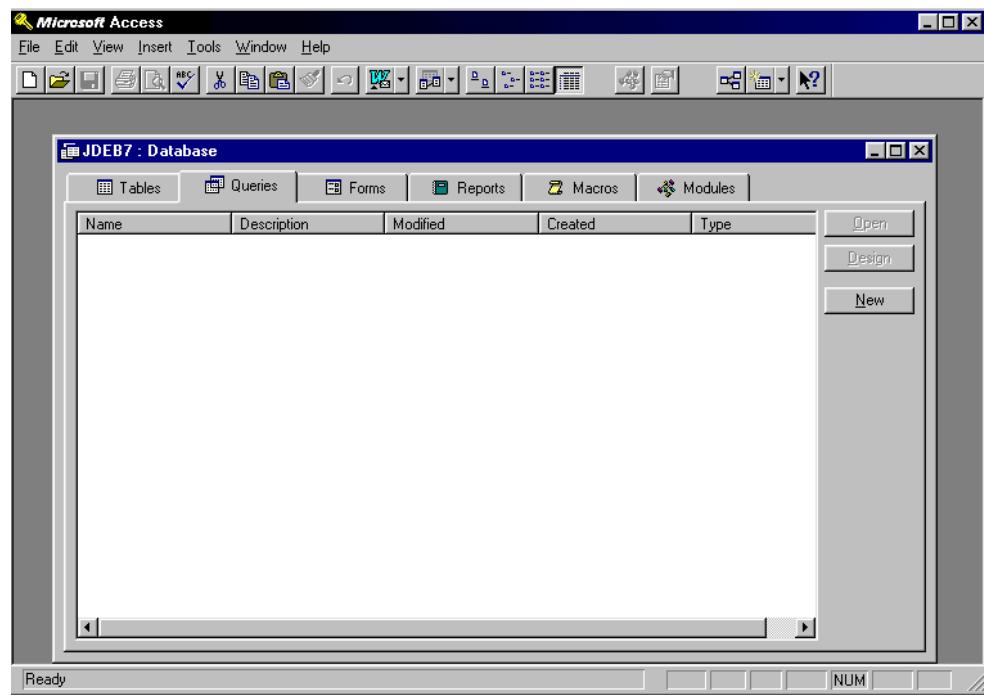
1. Inspect the local Access database at \b7\data\jdeb7.mdb to verify that there is data in the tables that the batch application is accessing.

2. To find the calling SQL statement, open the batch process log. ERP 8.0 names this log with the convention *report name_version_other identifiers*.log. This log is located in your local directory, \b7\PrintQueue.

3. Highlight the SQL statement, right mouse click, and copy the contents to the clipboard.
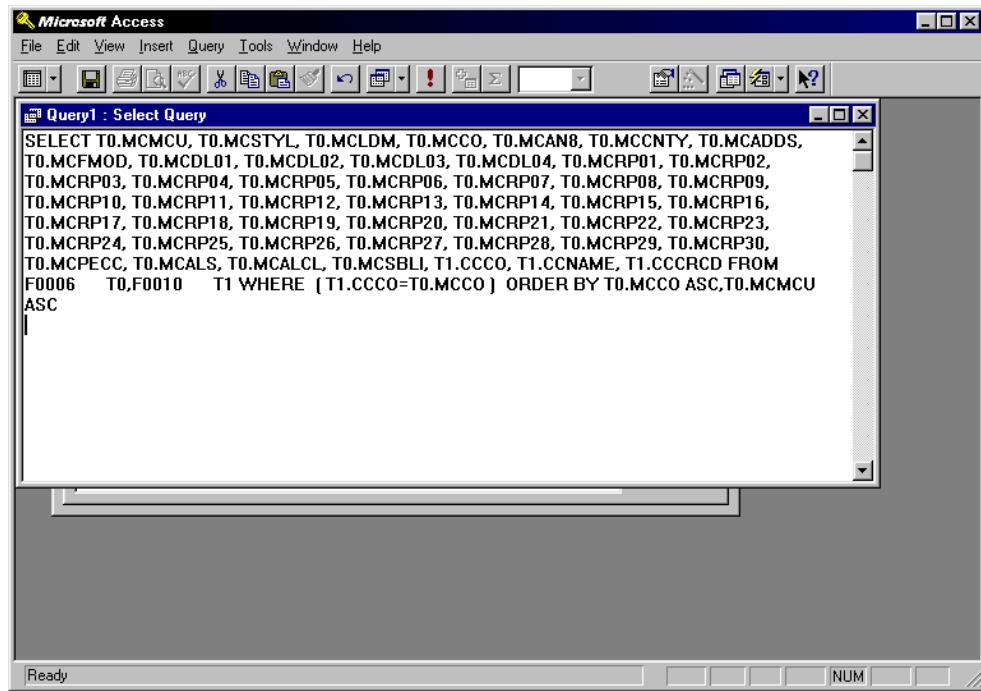
```
--UBE--[2] Process Init Section
--UBE--[2] InitSection for Business Unit Report
--UBE--[2] InitSection for Business Unit Report
4290976713/4290856457   SELECT TO.MCMCU, TO.MCSTYL, TO.MCLDM, TO.MCCO, TO.MCAN8,
TO.MCCNTY, TO.MCADDS, TO.MCFMOD, TO.MCDL01, TO.MCDL02, TO.MCDL03, TO.MCDL04, TO.MCRP01,
TO.MCRP02, TO.MCRP03, TO.MCRP04, TO.MCRP05, TO.MCRP06, TO.MCRP07, TO.MCRP08, TO.MCRP09,
TO.MCRP10, TO.MCRP11, TO.MCRP12, TO.MCRP13, TO.MCRP14, TO.MCRP15, TO.MCRP16, TO.MCRP17,
TO.MCRP18, TO.MCRP19, TO.MCRP20, TO.MCRP21, TO.MCRP22, TO.MCRP23, TO.MCRP24, TO.MCRP25,
TO.MCRP26, TO.MCRP27, TO.MCRP28, TO.MCRP29, TO.MCRP30, TO.MCPECC, TO.MCALS, TO.MCALCL,
TO.MCSBLI, T1.CCCO, T1.CCNAME, T1.CCCRCD FROM F0006     TO,F0010     T1 WHERE  (
T1.CCCO=TO.MCCO )   ORDER BY TO.MCCO ASC,TO.MCMCU ASC
--UBE--[2] Process Adv Section
--UBE--[2] Processing Adv Section for Business Unit Report
--UBE--[2] Process Init Page Header Section
--UBE--[2] Process Adv Section
--UBE--[2] Processing Adv Section for Page Header
--UBE--[2] Process Do Section
--UBE--[2] Processing Do Section for Page Header
--UBE--[4]--ER:: Loading Data Structure for BSFN
--UBE--[4]--ER:: Processing BSFN : GetCompanyAndReportDesc
4290976713/4290856457   SELECT  *  FROM DEVOL.F9860     WHERE  ( SIOBNM = :KEY1 )
--UBE--[4]--ER:: Done Processing BSFN : GetCompanyAndReportDesc
--UBE--[4]--ER:: Unloading Data Structure for BSFN
--UBE--[4]--ER:: Done Processing ER BSFN
--UBE--[3] Process Init Object
--UBE--[3] Processing Init Object SystemTime in Section Page Header
--UBE--[3] Process Do Object
--UBE--[3] Processing Do Object SystemTime in Section Page Header
--UBE--[3] Process End Object
--UBE--[3] Process Init Object
--UBE--[3] Processing Init Object SystemDate in Section Page Header
--UBE--[3] Process Do Object
--UBE--[3] Processing Do Object SystemDate in Section Page Header
--UBE--[3] Process End Object
--UBE--[3] Process Init Object
--UBE--[3] Processing Init Object NonDataDict. in Section Page Header
--UBE--[3] Process Do Object
```

4. To view data in the file jdeb7.mdb use Access and choose the Queries tab:

5. Click New.

6. Click OK.

7. In Show Table, click Close.

8. From the View menu, click SQL.

9. In the Query: Select Query window, click paste.

10. Click the exclamation (!) button, or click Run from the Query menu.

   If this action causes the expected records to be found, the data you specified in the data selection matches your SQL statement. This means that the cause of the problem is not data selection.

Troubleshooting a Standalone Installation of ERP 8.0

If you find you cannot perform a force checkout on a PC running a standalone installation of ERP 8.0, it is because ERP 8.0 cannot determine your system name for a standalone installation of ERP 8.0.

The solution is to disable the DNS name in Windows.

Troubleshooting Enterprise Server Data Availability Problems

If your workstation is running a report against any enterprise server database, such as Oracle, SQL Server, or DB2/400, you need to check the database to see if your SQL statement can find data in the tables. To find the calling SQL statement, you should reference the procedure described in *Troubleshooting Local Data Availability Problems.* With the help of a database administrator you can execute the same SQL statement against the server database to verify that the expected data exists in the tables.

As an alternative or in addition to these procedures, you can also use the Universal Table Browser to verify table structure and data availability. See *Universal Table Browser* in the *System Administration Guide*.

If you do not find any data in the tables for the environment against which you are running, then your SQL statement might be incorrect, or the table is empty. Check the data selection and processing options, and verify that they are selecting data that is in the tables. If you do

not have data in the tables to match what you are searching, then you will get unexpected results or no data on your report.

For example, if you leave your processing options blank (even though that may be a valid entry for a ERP 8.0 batch process), the process may be searching for blank values or for all values. If your data selection is selecting on a company that does not have any records, then the report batch process does not find any records.

Troubleshooting Printing Problems

Most printing errors are written to the batch process log. However, some errors might show on reports or be visible in some other form (for example, the report prints an error message, prints in the wrong font, or prints landscape instead of portrait).

The following printing problems can occur:

- If your batch application produces error messages on the report (for example, Invalid Company Number), see *Troubleshooting Batch Process Problems*.

- If your report batch process shows the wrong font on the report, check the report properties of the version you just ran. Also, for the section that is not printing the correct font, check the section properties for the font. If the font is correct, then try printing to a different printer. Otherwise, try using another workstation to see if the font that is being sent to the printer is not interpreted correctly.

  For more information about report sections, see *Modifying Versions* in the *Enterprise Report Writing Guide.*

- If your report batch process prints portrait instead of landscape or landscape instead of portrait, then check the report properties of the version you just ran and verify that the properties are correct.

Troubleshooting .DLL Problems on a Production Workstation

Problems with workstation .DLL files are indicated if you are receiving an error message such as:

```
CALLBSFN.DLL Load Lib failed
```

Such a message might indicate that the object does not exist on the workstation. Use a tool such as Explorer to verify if the file exists. You can find consolidated .DLLs in the \b7*path code*\bin32 directory.

If the .DLL does not exist on the workstation, or if it does exist but you continue to get the error even after restarting ERP 8.0, you can get the correct parent .DLL by reinstalling ERP 8.0 on the workstation from the deployment server. Another option is to copy the parent .DLL from the deployment server package location or another functioning workstation. This assumes that the business functions that are built into this parent .DLL are the same on the workstation that you are copying to as they are on the one you are copying from. Use caution when copying .DLLs. The preferred method is a workstation installation. See the *Package Management Guide* for more information.

If the workstation with the .DLL is a development workstation rather then a production workstation, see *Troubleshooting .DLL Problems on Development Workstations.*

Troubleshooting Data Source Setup Problems

When attempting to sign onto a ERP 8.0 environment, if errors are received, one possible cause may be incorrect data source setup on the workstation. Some indications of incorrect setup are:

- A form that continues to request a user ID, a password, and a data source even after valid ones have been entered.

- Incorrect display of data on an interactive application.

- Messages in the logs referring to problems connecting to data sources or concerning incorrect passwords.

See Also

- ❑ *Running the Verify Object Configuration Manager* in the *Distributed Processing* section of the *Configurable Network Computing Implementation Guide*.

► To troubleshoot data source setup problems

1. From the Control Panel, verify that the ODBC settings are correctly defined and that the data source exists. The proper settings vary by data source. For general information, see *Understanding Data Sources* in this guide. For information specific to your site, see *Understanding the Environments* in the *ERP 8.0 Installation Guide.*

2. If other users will log onto the same workstation, verify that the data sources are set up as system data sources rather than user data sources. Data sources set up as user data sources must be set up for each user accessing ERP 8.0 on the workstation.

Troubleshooting the Development Workstation

The troubleshooting procedures that you use on a workstation depend on whether the workstation is a production or development machine. Production machines contain only ERP 8.0 applications so the scope of troubleshooting the problems that can occur is limited. In addition to containing prebuilt ERP 8.0 applications, development machines are equipped with ERP 8.0 and third-party tools. These tools enable developers to create, modify, compile, generate, and troubleshoot ERP 8.0 applications.

You can perform troubleshooting procedures to isolate and resolve a problem with a ERP 8.0 development workstation.

Troubleshooting .DLL Problems on a Development Workstation

Problems with workstation .DLL files are indicated if you are receiving an error message such as:

```
CALLBSFN.DLL Load Lib failed
```

Such a message might indicate that the object does not exist on the workstation. Use a tool, such as Explorer, to verify if the file exists. You can find consolidated .DLLs in the directory b7*path code*\bin32 and b7\system\bin32.

If the .DLL does not exist on the workstation, or if it does exist but you continue to get the error even after restarting ERP 8.0, the workstation has a problem with the build of one or more consolidated .DLLs. You can rebuild libraries or .DLLs using the BusBuild application from Windows Explorer. The path to busbuild.exe is b7\system\bin32\busbuild.exe. See

*Working with Business Function Builder i*n the *ERP 8.0 Development Tools Guide* for more
information about the BusBuild application.

▶ **To troubleshoot .DLL problems on a development workstation**
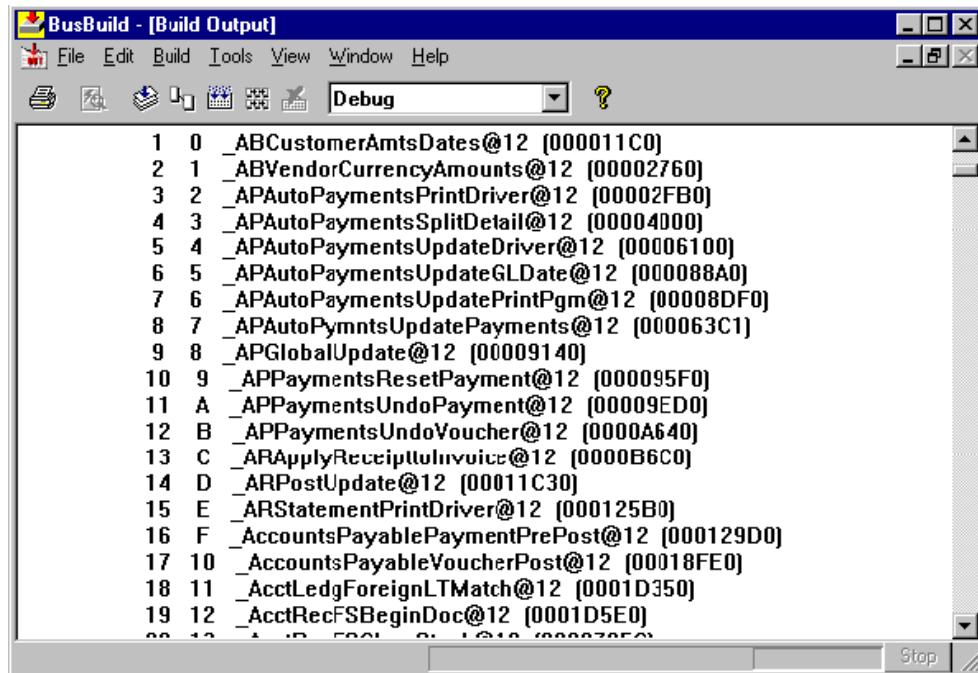
Use this procedure if you are receiving the error on a specific business function that cannot
be found in the parent .DLL.

1. Verify that the correct parent .DLL for the business function being executed is being
   referenced when you receive the error. If the wrong parent .DLL is referenced, run
   the Synchronize JDEBLC option from the Tools pull down menu within BusBuild to
   correctly synchronize the parent .DLLs.

2. Attempt to rebuild the business function from the BusBuild.exe. The rebuild should
   include the business function in the parent .DLL.

3. To verify which business functions are part of a parent .DLL, choose the Dumpbin
   option from the Tools pull down menu within Busbuild. This option lists all of the
   business functions included in the parent .DLL.

Example: Listing Business Functions Included in the Parent .DLL

This example shows the build output from the ERP 8.0 BusBuild application. The output lists
the business functions that are included in the parent .DLL that is created as a result of
building a business function.

Troubleshooting Event Rule Problems

When encountering problems with event rules on an interactive or batch application, several
tools are available to help resolve the problem.

- Review the event rules attached to the application or batch process for obvious problems such as disconnected assignments or incorrect parameters passed to business functions.

- When generating the application, a compile error log is generated that document errors in the event rules. Review this log for errors with the Event Rules.

- The Debug Application within ERP 8.0 allows you to debug the event rules for an application or batch process. See *Debugging* in the *ERP 8.0 Development Tools Guide* for more information on the debug application.

Troubleshooting Business Function Problems

You might be having business function problems if you are getting unexpected results upon executing a business function or getting a .DLL error.

If the problem is with a parent .DLL load, see *Troubleshooting .DLL Problems on a Development Workstation* for details on how to build the parent .DLL.

Microsoft Visual C++ allows you to debug a business function. Using this tool, you can step through the logic and inspect variables. This will often help you detect the error. See *Debugging* in the *ERP 8.0 Development Tools Guide* and *Business Function Problems* in the *Configurable Network Computing Implmentation Guide* for more information on debugging business functions.

Working with the Workstation Log Files

You should be familiar with the various logs used to troubleshoot problems on the workstation. By using these logs and the procedures outlined in this chapter, you can troubleshoot problems with interactive applications, batch applications, or business functions running locally on the ERP 8.0 workstation. Determine whether you can duplicate this problem consistently or whether it is intermittent.

Do not leave the debugging logs active when the logs are not in use. The logs consume disk and processor resources, and, therefore, impact performance.

Note:

If you do not use data replication in your configuration, ignore error messages that refer to the following tables in the JDE.LOG and JDEDEBUG.LOG:

- F98DRPUB

- F98DRENV

- F98DRSUB

- F98DRLOG

- F98DRPCN

What are Global Tables?

Each ERP 8.0 workstation uses global tables (glbltbl.xdb and glbltbl.ddb) to write disk cache files containing internal session- and workstation-specific information. For example, information is cached regarding data dictionary tables and business views. By maintaining a history of this specifically cached session information, individual workstations will improve run-time performance based on their usage.

If you are doing application development, you may need to delete the global tables to see the results of your changes. This is because the system looks first to the disk cache to read certain table information. In this case, the information contained in the disk cache may not be synchronized with your current development. You cannot edit the contents of the disk cache.

J.D. Edwards recommends that normal start up of ERP 8.0 in a production environment not include the deletion of these global tables. The deletion of these files should only be used as a troubleshooting technique or a development aid, not as a normal practice.

If the global table files do not exist when ERP 8.0 is started, they will be created. If they do exist, they will be appended (not overwritten). The files are located in the b7/*pathcode*/spec directory.

On ERP 8.0 workstations, logs are generally classified in the following categories:

- Logic processing
- Batch processing
- Application development (compiling and generating)
- Object Management Workbench transactions

Logic Processing Logs

There are two major log file sources that you can use for troubleshooting processing faults on the workstation:

- jde.log

  This log shows fatal errors. Jde.log can track any fault that might occur within ERP 8.0.

- jdedebug.log (JDEDEBUG on AS/400)

  This log tracks API calls and SQL statements as well as other messages. You can use this file to determine the point in time when normal execution stopped. The system does not use jdedebug.log to track errors. Instead, this log is used to track the timing of ERP 8.0 processes.

Application Development Logs

For ERP 8.0 workstations in application development environments, you can use the following logs to identify faults in ERP 8.0 processing related to compiling and generating applications and business functions:

- *compile_error*.log

  The *compile_error*.log file contains compile errors for event rules. You can use this log to view event rules that may not properly compile and execute. This includes Named Event Rules, Table Event Rules, and event rules embedded in applications.

- jdecpy.log

  This log is produced each time that you run the copy table program (cpytbl.exe). Copy table error messages and IDs are logged. This log also indicates if any inserts failed that could indicate a possible error.

- sql.log

You can use this log to view exactly what is being sent through the ODBC driver. This is not a ERP 8.0 log. This log process is provided by another software vendor.

For ERP 8.0 workstations in production environments, you can use the following log to identify faults in ERP 8.0 silent installation:

- jdeinst.log

    If you use the silent installation process for ERP 8.0 installations on a workstation, you can use this log to view the status of the silent installation.

Troubleshooting Strategies Using Log Files

You can create a normal (successful) jde.log by signing on to ERP 8.0 and then immediately signing off. Use this log of successful start up statements to compare against logs that have a problem.

If you know your problem is not related to start up, you can clear and save the log without exiting ERP 8.0. When you re-create the problem, the contents of the log should only contain errors that occurred since you cleared the log.

You can also rename the log to indicate the kind of problem. For example, you might delete the jde.log and then run a report that causes an error condition. Then you could rename the jde.log to report.log.

Another alternative is to add comment lines to the jde.log indicating the sequence of events you are performing. For example, you might be running an application that you know causes an error. Just before you run the application, you could edit the jde.log to add a comment line stating that you are about to start the suspect application.

Most error messages in the jde.log have a unique number assigned to them. You can view an extended description of the error including possible causes and resolutions by searching on the error number in the Error Messages application (P92002). See *Working With Error Messages* for more information.
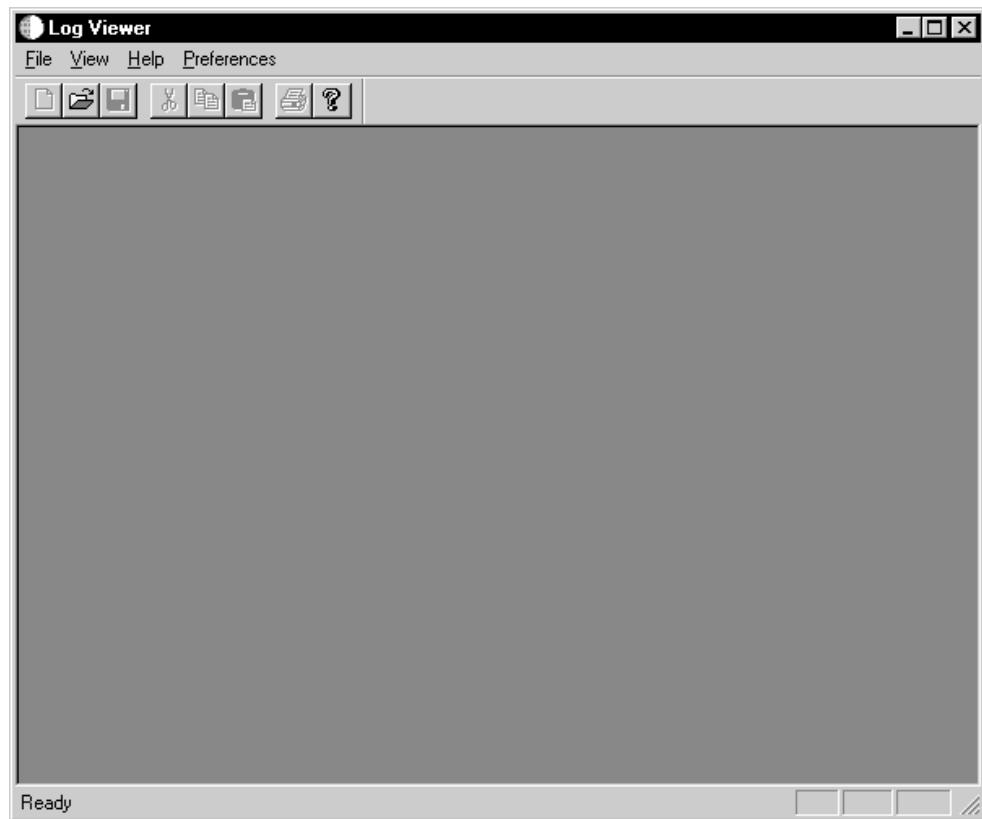
Viewing Log Files

You can view ERP 8.0 log files from within any ERP 8.0 application. If you want to view log files outside of ERP 8.0, you can use a text editor like Notepad or Wordpad.

▶ **To view log files**

1. From within any ERP 8.0 application, right click.
2. On the pop up menu, select the Log Viewer option.
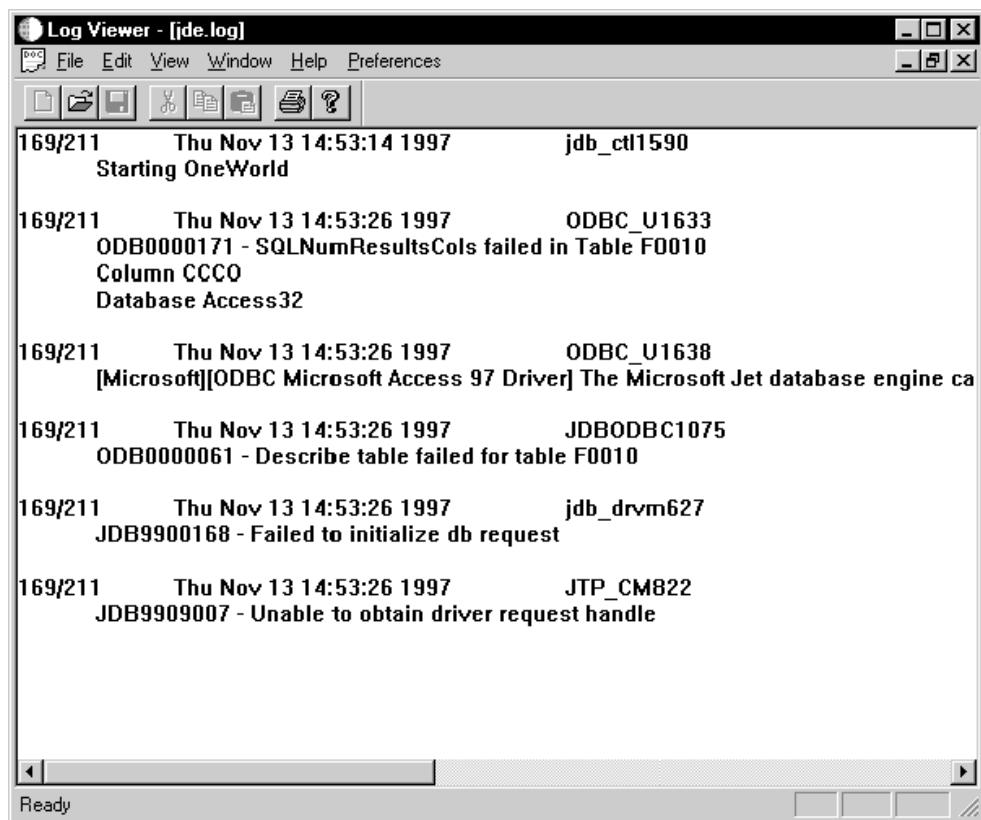
3. From the File menu, choose Open to locate and open a ERP 8.0 log file.

   You can also use the View menu selection to choose log files. In addition, if you have previously viewed log files, a history of those files is kept under the File menu.

Example: Log Viewer

This example, jde.log, shows errors due to a missing table:

```
Log Viewer - [jde.log]                                          _ □ ×
 File   Edit   View   Window   Help   Preferences               _ |ð| ×

169/211        Thu Nov 13 14:53:14 1997            jdb_ctl1590
        Starting OneWorld

169/211        Thu Nov 13 14:53:26 1997            ODBC_U1633
        ODB0000171 - SQLNumResultsCols failed in Table F0010
        Column CCCO
        Database Access32

169/211        Thu Nov 13 14:53:26 1997            ODBC_U1638
        [Microsoft][ODBC Microsoft Access 97 Driver] The Microsoft Jet database engine ca

169/211        Thu Nov 13 14:53:26 1997            JDBODBC1075
        ODB0000061 - Describe table failed for table F0010

169/211        Thu Nov 13 14:53:26 1997            jdb_drvm627
        JDB9900168 - Failed to initialize db request

169/211        Thu Nov 13 14:53:26 1997            JTP_CM822
        JDB9909007 - Unable to obtain driver request handle


Ready
```

Setting Up the Workstation jde.log

You can use the workstation jde.log as a general purpose log to track fatal errors generated by ERP 8.0 processing. The jde.log tracks any fault that might occur within ERP 8.0. When you are looking for startup errors you should read the jde.log from the top down. For other errors, you should read from the bottom up.

The workstation jde.log is created (if not previously existing) or overwritten (if previously existing) at the start of every ERP 8.0 session.

▶ **To set up the workstation jde.log**

1. Locate the workstation jde.ini file. The ERP 8.0 setup program places this file in the working Windows directory - for example, c:\Windows\jde.ini. If you are unsure of your workstation's working Windows directory, use the Find command to locate the jde.ini file.

2. Use an ASCII editor (like Notepad or Wordpad) to open the file.

3. In the [DEBUG] section, verify or change your settings for the job file variable as shown below:

```
[DEBUG]
JobFile=job file
```

Setting Description

JobFile=*job file* Specifies the location and name of the jde.log file. The default value is c:\jde.log.
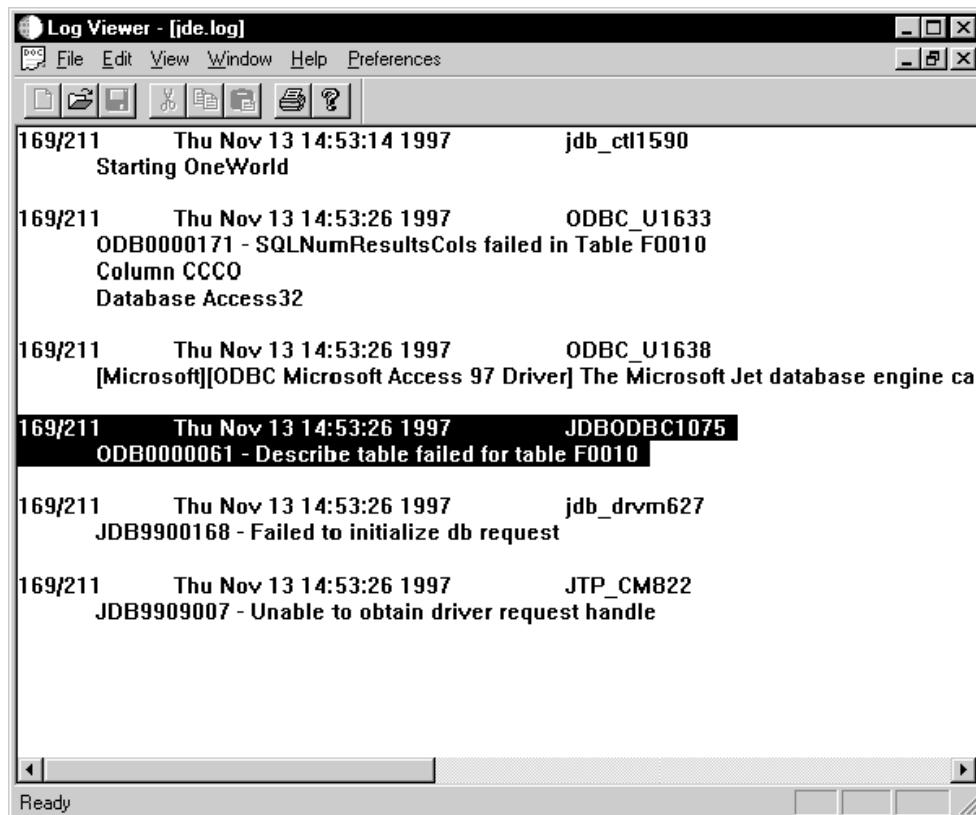
  Note: You can disable the jde.log on the workstation by specifying a blank or invalid value for JobFile. If you delete or disable (comment out) the JobFile parameter, ERP 8.0 automatically creates and writes to a log file called jde.log in the c:\ directory of the workstation.

4. Save the changes and close the jde.ini file.

Example: Workstation jde.log

This example log shows errors due to a missing table. The highlighted lines indicate the unique error message number that can be used to search for an extended description in the Data Dictionary Error Message application. See *Working with Error Messages* for more information.

Most entries in the jde.log are significant, and ou should closely examine them. This information is also used by developers to indicate problems with an application that need to be addressed.

Setting Up the Workstation jdedebug.log

The workstation jdedebug.log file contains messages relating to API calls and SQL statements as well as other messages. You can use this file to determine the point in time when normal execution stopped. The system does not use jdedebug.log to track errors. Instead, it uses this log to track the timing of ERP 8.0 processes.

You can use jdedebug.log to find out where a process has ended. For example, log data can include what the ODBC was trying to connect to, the SQL statement that was being executed for a specific table, and if memory has been freed.

If your process failed and you have logging turned on, look in your jdedebug.log for the following messages:

- Not Found

- Failure

Also, look at the end of the log to see what process was executed last. Generally, important lines in the log are:

- SELECT

  The SELECT lines indicate which table you are selecting. The log tells you in which library (for the AS/400) or environment (non-AS/400) that the table resides. You should verify that the selected libraries and environments are correct.

- ODBC Version

  The ODBC lines will indicate whether you are having problems connecting to the driver.

► **To set up the workstation jdedebug.log**

1. Locate the workstation jde.ini file. The ERP 8.0 setup program places this file in the working Windows directory - for example, c:\Windows\jde.ini. If you are unsure of your workstation's working Windows directory, use the Find command to locate the jde.ini file.

2. Use an ASCII editor (like Notepad or Wordpad) to open the file.

3. Verify or change the name of the jdedebug.log file. The location and file name of the jdedebug.log file is defined by the following setting in the jde.ini file:

```
[DEBUG]
DebugFile=location and name
```

Setting	Description
DebugFile=location and name	Specifies the location and name of the jdedebug.log file. The default value is c:\jdedebug.log.

4. Enable or disable the logging of events to the jdedebug.log file by setting the following parameter in the [DEBUG] section:

```
[DEBUG]
Output=output parameter
```

Setting	Description

Valid values are:

<table>
<tr><td rowspan="5">Output=<i>output parameter</i></td><td>NONE</td><td>No trace information is written to jdedebug.log.</td></tr>
<tr><td>FILE</td><td>Database and runtime trace information is written to the file specified by the DebugFile= parameter in the [DEBUG] section.</td></tr>
<tr><td>EXCFILE</td><td>Runtime trace information is written to the file specified by the DebugFile= parameter in the [DEBUG] section.</td></tr>
<tr><td>BOTH</td><td>Trace information is written to both jde.log and jdedebug.log.</td></tr>
</table>

Note: The primary method of disabling the jdedebug.log is by using the Output parameter. However, if you set Output=FILE, and you leave the DebugFile value blank (or specify an invalid location), ERP 8.0 still performs debug tracing but does not write the results to any jdedebug.log file. If you delete or disable (comment out) the DebugFile parameter, ERP 8.0 automatically creates and writes to a log file called jdedebug.log in the c:\ directory of the workstation.

5. Set the level of debugging information that you want written to the jdedebug.log file. The debug level is determined by the following parameter in the [DEBUG] section:

```
[DEBUG]
Output=debug level
```

Setting	Description
	This parameter controls the debug level. You can specify any combination of allowable values using commas as delimiters. The default setting is LEVEL=BSFN,EVENTS.
	Valid values are:
	EVENTS Traces the start and stop of events. BSFN Traces when business functions are entered and when they return. SF_*x* Traces when system functions execute. The *x* variable is any allowable system function value. Valid values are listed below: GRID PARENT_CHILD GENERAL MESSAGING WORKFLOW WORKFLOW_ADMIN MEDIA_OBJ CONTROL For example, LEVEL=SF_CONTROL. In addition, you can specify multiple system functions by separating them with commas. For example, LEVEL=SF_GRID,SF_CONTROL.
LEVEL=*debug level*	You can also specify numeric values: 1 Traces critical errors. This is the default level. That is, whether you specify this value or not, the system will always trace critical errors. 2 Traces invalid parameters passed into a function. 3 Traces statements as the software enters and exits each event. Specifying this value is the equivalent of specifying the EVENTS value. 4 Traces main messages that the software sends to a controlling parent of a child. These messages concern the processing functions such as the grid. 5 Provides a detailed trace report of every function that the software calls in the interactive runtime module. This setting is only applicable to developers of the runtime module.

6. Save the changes and close the jde.ini file.

Example: jdedebug.log (Workstation - Output Enabled)

The example shows a sample excerpt of jdedebug.log on the workstation when the output is enabled. The areas in bold type are especially useful as described above. The prefix number for each line in output refer to the process ID of the running job. This number will change depending on the log file (such as jde.log) and the process that is writing to the log.

```
73/72    Entering JDB_InitEnv
73/72    Entering JDB_SetEnv
73/72    Entering JDB_InitUser
73/72    Entering JDB_BeginTransaction
73/72    Entering JDB_InitUser
73/72    Entering JDB_BeginTransaction
73/72    Entering JDB_FreeUser
73/72    Entering JDB_InitUser
73/72    Entering JDB_BeginTransaction
73/72    Entering JDB_OpenTable(idTable=150)
73/72    Entering JDB_InitUser
73/72    Entering JDB_BeginTransaction
73/72    Entering JDB_OpenTable(idTable=35432)
73/72    RT: >>>Beginning ER:  Select/OK Button Clicked  App: P00825
Form: W00825A  [T:48 F:..\JDEUSER\jdecgrt\RT_ER.cpp Ln:2972 Lv:LEVEL3]
73/72  RT:  >>>Calling :   BSFN: ValidateUser  App: P00825
Form: W00825A  [T:48 F:..\JDEUSER\JDECGRT\RT_BSFN.cpp Ln:1127
Lv:LEVEL3]
73/72    Entering JDB_InitUser
73/72    Entering JDB_BeginTransaction
73/72    Entering JDB_OpenTable(idTable=36632)
73/72    ODBC version which the Driver Manager conforms : 03.00.0000
   ODBC version which the driver supports : 02.50
   The DBMS product accessed by the driver : - ACCESS
73/72    Entering JDB_SetSelection
73/72    Entering JDB_SelectKeyed
73/72    SELECT OMENHV, OMAPPLID, OMOBNM, OMDATP, OMDATS, OMUGRP,
OMOAPP, OMDATM, OMOVRE, OMSY, OMSTSO, OMFUNO, OMOCM2 FROM F986101
WHERE ( OMENHV = 'DEMOB7A' AND OMSTSO = 'AV' ) ORDER BY OMSTSO
ASC,OMAPPLID ASC
73/72    Entering JDB_Fetch
73/72    Entering JDB_Fetch
73/72    Entering JDB_CloseTable
73/72    Entering JDB_ClearSequencing
73/72    Entering JDB_ClearSelection
73/72    Entering JDB_OpenTable(idTable=24208)
73/72    Entering JDB_SelectAll
73/72    SELECT * FROM F98611
73/72    Entering JDB_Fetch
```

Example: jdedebug.log (Workstation - Output Enabled and Running Journal Entry)

This example shows a sample of jdedebug.log with the output enabled on the workstation, which is running the Journal Entry application. The [DEBUG] parameters are set as Output=EXCFILE and LEVEL=EVENTS,BSFN,SF_GRID,SF_CONTROL.

```
RT: >>>Beginning ER:    Dialog is Initialized        App: P0911
Form: W0911I
RT: <<<Finished  ER:    Dialog is Initialized        App: P0911
Form: W0911I
RT: >>>Beginning ER:    Post Dialog is Initialized   App: P0911
Form: W0911I
RT: <<<Finished  ER:    Post Dialog is Initialized   App: P0911
Form: W0911I
RT: >>>Beginning ER:    Add Button Clicked           App: P0911
Form: W0911I
RT: >>>Beginning ER:    Dialog is Initialized        App: P0911
Form: W0911A
RT:      SYSFN: Hide Control < > 0
RT:      SYSFN: Disable Control <ICU> 5258
RT:      SYSFN: Hide Grid Column COL: 5
RT:      SYSFN: Hide Control <ATDOW> 5392
RT:      SYSFN: Hide Control <REMA> 5405
RT:      SYSFN: Hide Control < > 5295
RT:      SYSFN: Hide Control < > 5385
RT:      SYSFN: Hide Control <DOC> 5297
RT:      SYSFN: Hide Control <KCO> 5299
RT:      SYSFN: Hide Grid Column COL: 7
RT:      SYSFN: Hide Grid Column COL: 8
RT:      SYSFN: Hide Grid Column COL: 9
RT:      SYSFN: Hide Grid Column COL: 11
RT:      BSFN: Calling :   BatchOpenOnInitialization  App: P0911
Form: W0911A
RT:      BSFN: Returned 0: BatchOpenOnInitialization  App: P0911
Form: W0911A
RT:      BSFN: Calling :   GetAuditInfo               App: P0911
Form: W0911A
RT:      BSFN: Returned 0: GetAuditInfo               App: P0911
Form: W0911A
RT: <<<Finished  ER:      Dialog is Initialized       App: P0911
Form: W0911A
RT: >>>Beginning ER:      Clear Screen Before Add     App: P0911
Form: W0911A
RT:      SYSFN: Enable Control <PCTOW> 5390
RT:      SYSFN: Hide Control <ATDOW> 5392
RT:      SYSFN: Hide Grid Column COL: 5
RT:      SYSFN: Hide Control <REMA> 5405
RT:      SYSFN: Enable Control <CRCD> 5273
RT:      SYSFN: Enable Control <LT> 5292
RT:      SYSFN: Enable Control <LT> 5351
RT:      SYSFN: Show Grid Column COL: 6
RT:      SYSFN: Hide Grid Column COL: 12
RT:      SYSFN: Show Control <LT> 5292
RT:      SYSFN: Show Control <CRDC> 5271
RT:      SYSFN: Hide Control <LT> 5351
RT:      SYSFN: Hide Control <CCD0> 5358
RT:      BSFN: Calling :   GetLocalComputerId         App: P0911
Form: W0911A
RT:      BSFN: Returned 0: GetLocalComputerId         App: P0911
Form: W0911A
RT: <<<Finished  ER:      Clear Screen Before Add     App: P0911
Form: W0911A
RT: >>>Beginning ER:      Post Dialog is Initialized App: P0911
Form: W0911A
RT: <<<Finished  ER:      Post Dialog is Initialized App: P0911
Form: W0911A
RT: >>>Beginning ER:      Add Last Entry Row to Grid App: P0911
Form: W0911A
RT: <<<Finished  ER:      Add Last Entry Row to Grid App: P0911
Form: W0911A
```

Example: jdedebug.log (Workstation - Output Not Enabled)

This example shows a sample of jdedebug.log when the output is not enabled on the workstation.

```
4294849873/4294749677 **** jdeDebugInit -- output disabled in INI
file
```

Setting Up the Batch Process Log

You can use the batch processing log to identify faults in ERP 8.0 processing related to batch processes. The batch processing log resides in the \B7\PrintQueue directory. The log file name is *batch_process*.log, where *batch_process* represents the report name, version name, date, and time.

Based on the setting of the UBESaveLogFile parameter in the [UBE] section of the jde.ini file, this log file is deleted or saved on successful completion of batch processes. This log file shows different types of messages that can help in tracking errors in the batch process. The messages are:

- Section Level Process

- Object Level Process

- ER Level Process

- DB Level Process

The batch process log can contain ER references, batch process flow and SQL statements, among other messages. You can use the batch process log file to determine when normal execution stopped.

Before You Begin
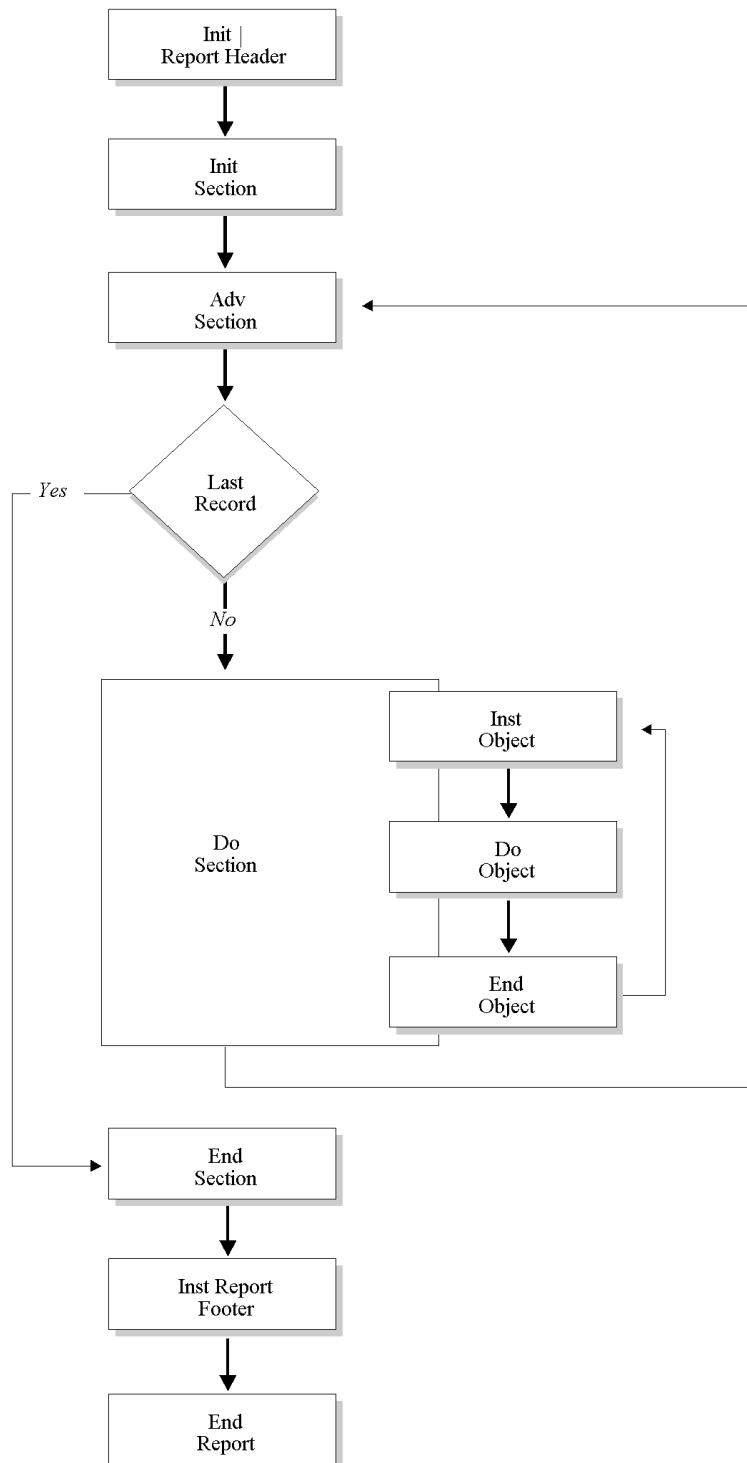
- Turn on the jdedebug.log. See *Working with the Workstation jdedebug.logs* for more information.

Batch Processes: General Event Flow

The batch process log file shows you the process flow in batch processes. This flow is completed in the following steps:

- When batch processes complete a section, with the INIT section first, a business view is opened. As a result, after the INIT Section log, you should see a SQL statement.

- After INIT Section, the batch engine calls Adv Section to retrieve a record.

- After the retrieve, batch engine processes the Do Section Processing.

- From Do Section, each object is processed in Init Object - Do Object - End Object order.

- After Do Object message, you should see Printed value in the log. ER events are logged in a different event level.

This figure shows a graphical depiction of the general event flow for batch processes:

To set up the batch process log

1. Locate the workstation jde.ini file. The ERP 8.0 setup program places this file in the working Windows directory - for example, c:\Windows\jde.ini. If you are unsure of your workstation's working Windows directory, use the Find command to locate the jde.ini file.

2. Use an ASCII editor (like Notepad or Wordpad) to open the file.

3. Set the level of batch report debugging information that you want written to the batch process log file and whether you want the file to be saved. These settings are controlled by the following parameters in the [UBE] section:

```
 [UBE]
UBEDebugLevel=debug level
UBESaveLogFile=0/1
```

Variable Name	Description
UBEDebugLevel=*debug level*	Specifies the level of UBE debug logging. The default value is 0. Valid values are:
	0 No message in a log file
	1 Error messages, and log entry and section level messages
	2 Object level messages (plus Level 1 messages)
	3 ER messages and database mapping messages (plus Level 1 and 2 messages)
	4 SQL statements (plus Level 1, 2, and 3 messages)
	5 Batch process function calls and printed output values (plus Level 1, 2, 3, and 4 messages)
	6 Batch process function calls and printed output values (plus Level 1, 2, 3, 4, and 5 messages)
UBESaveLogFile=*0/1*	Specifies whether the *<batch_report>*.log file will be saved. Valid values are:
	0 The *<batch_report>*.log file is not saved.
	1 The *<batch_report>*.log file is saved in the workstation's ERP 8.0 print queue directory (b7\PrintQueue).

4. Save the changes and close the jde.ini file.

Example: Batch Process Log

This example shows the type of messages that you can encounter when you edit the jde.ini file to enable error tracking:

```
Opening UBE Log for report R04575, version ZJDE0001
--UBE-- UBEEntryPoint START
--UBE-- K2Print START
PrintInfo struct is uninitialized, using default.
Connecting to printer ''
Connecting to default printer 'devdes3'
--UBE-- K2StartEngine Start
Currency Flag for the UBE is N
--UBE--Process Init Report Header Section
4294748759/4290842259   SELECT  *  FROM DEVOL.F9860       WHERE  (
SIAPPLID = :KEY1 )
4294748759/4290842259   SELECT  *  FROM APPL_PGF.F983051     WHERE  (
VRVERSIONID = :KEY1 )  ORDER
BY VRPID ASC,VRVERS ASC
--UBE--Process Init Section
--UBE--InitSection for Driver Section
--UBE-->ER:: Processing Expression Eval
--UBE-->ER:: Done Processing Expression Eval
--UBE-->ER:: Processing Assign
--UBE-->ER:: Done Processing Assign
--UBE-->ER:: Loading Data Structure for BSFN
--UBE-->ER:: Processing BSFN : BatchOpenOnInitialization
4294748759/4290842259   SELECT ICICUT, ICICU, ICIST, ICAICU, ICDICJ,
ICNDO, ICAME, ICDOCN, ICPOB
FROM F0011       WHERE  ( ICICUT = ? AND ICICU = ? )
4294748759/4290842259   SELECT  *  FROM F0002       WHERE  ( NNSY = ? )
4294748759/4290842259   UPDATE F0002       SET
NNSY=?,NNUD01=?,NNUD02=?,NNUD03=?,NNUD04=?,NNUD05=?,NNUD06=?,NNUD07=?,N
NUD08=?,NNUD09=?,NNUD10=?,NNN001=?,NNN002=?,NNN003=?,NNN004=?,NNN005=?,
NNN006=?,NNN007=?,NNN008=?,NNN009=?,NNN010=?,NNCK01=?,NNCK02=?,NNCK03=?
,NNCK04=?,NNCK05=?,NNCK06=?,NNCK07=?,NNCK08=?,NNCK09=?,NNCK10=? WHERE
( NNSY = ? )
4294748759/4290842259   INSERT INTO F0011       VALUES
(?,?,?,?,?,?,?,?,?,?,?,?,?,?,?)
--UBE-->ER:: Done Processing BSFN : BatchOpenOnInitialization
--UBE-->ER:: Unloading Data Structure for BSFN
--UBE-->ER:: Done Processing ER BSFN
--UBE-->ER:: Processing Assign
--UBE-->ER:: Done Processing Assign
--UBE-->ER:: Processing Assign
--UBE-->ER:: Done Processing Assign
```
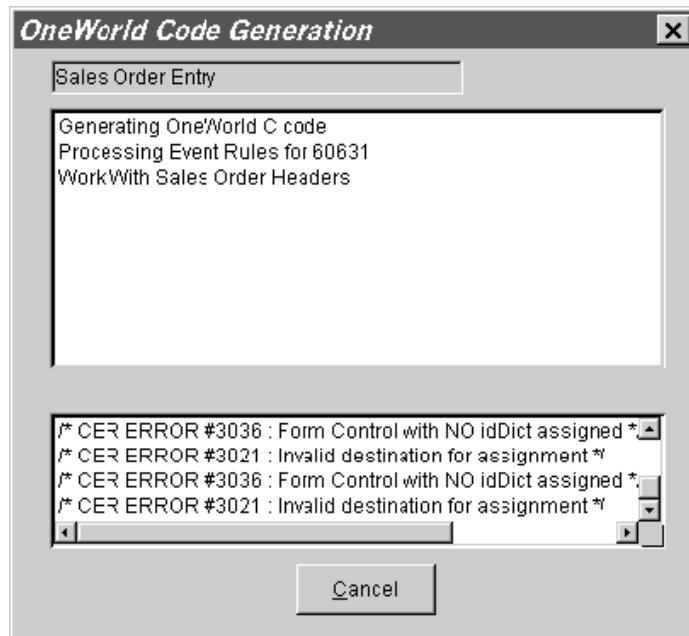
Working with the Compile Error Log

For ERP 8.0 workstations in development environments, you can use this log to identify faults in ERP 8.0 processing that are related to compiling and generating applications and business functions. This log for compiled event rules provides you with an account of event rules that do not properly compile and execute. This includes Named Event Rules, Table Event Rules and applications. ERP 8.0 generates this log file every time that the Code Generator program (cg.exe) is run and errors occur with compiled event rules.

The *<compile_error>* portion of the log file name refers to a variable value for the name of the event rules being compiled. For example, a name of a log file for compiling NER "N3200780" is N3200780.log. The error log from an application containing compiled event rules replaces the first letter of the application name with an "E". For example, P0101 generates an error log named E0101.log.

You should use this log when errors have occurred within the Code Generator while you were compiling an application, Named Event Rules, or Table Event Rules. When this happens, a message box appears beneath the ERP 8.0 Code Generation form with the source member and the problem description. You can use the log file to keep a record of such problems. The compile error log resides in the log folder under the pathcode portion of the b7 directory tree - for example, c:\B7\PD7334\LOG.

The following form provides an example of the Code Generator with errors:

```
OneWorld Code Generation                              [X]

Sales Order Entry

Generating OneWorld C code
Processing Event Rules for 60631
Work With Sales Order Headers




/* CER ERROR #3036 : Form Control with NO idDict assigned */
/* CER ERROR #3021 : Invalid destination for assignment */
/* CER ERROR #3036 : Form Control with NO idDict assigned */
/* CER ERROR #3021 : Invalid destination for assignment */

                    Cancel
```

Example: Compile Error Log

This example shows a compile error message log explaining that the number of data structure parameters in the application is not in agreement with the specifications:

```
*************************
/* CER ERROR #3034 : Datastructure parameter count mismatch */
Function Name: P0101_22633_129_0
Function Description: ER for P0101_68502
Form: 22633 - Work With Addresses
Control: 129 - A/&R   Revise Accounts Receivable
Event: 0 - Button Clicked
Seq #: 3
Line #: 1
Line Text: CALL (Application Revise A/R Information, Form A/R Customer
Master Information)
/* DS has 10 elements : spec has 2 */
*************************
```

Working with jdecpy.log

The system produces output for jdecpy.log each time that the copy table program (cpytbl.exe) is run on the workstation. Generally, the file contains records of which tables were successfully copied from the local database to the chosen server. This log also indicates if any inserts failed. Such failures indicate a possible error. This log is automatically stopped after cpytbl.exe completes.

The jdecpy.log resides in the root directory of the workstation, generally in c:\. ERP 8.0 automatically generates this log every time you run cpytbl.exe. The log is created or overwritten each time it runs.

Once you use the jdecpy.log to determine that a copy table error has occurred, you should refer to the jde.log. If a table does not copy properly, the detail of the error text is written to jde.log. The jde.log contains the actual error message and message ID. The message ID relates to the line prefix numbers in the jdecpy.log and will aid you in locating the applicable error text written to the jde.log.

For example, the following jdecpy.log examples (unsuccessful copy) show a message ID of 116/75 for a copy failed message. The corresponding detail error text is written to the jde.log and also contains the same message ID, 116/75, as shown in the excerpt of the jde.log in that example.

Example: jdecpy.log (Successful Copy)

A successful copy generates a log similar to the one shown below:

```
91/104    STARTING NEW TABLE COPY
91/104    File F0002
91/104    Creating - F0002
91/104    Created Table
91/104    Copied 20 records for table F0002       from DS Access32 to DS
SQLSERVER JDFDTA71 - from Env PRODLOC to Env PRODLOC.
91/104    0 Inserts failed - check jde.log
91/104    DONE
91/104
91/104    STARTING NEW TABLE COPY
91/104    File F00021
91/104    Creating - F00021
91/104    Created Table
91/104    Copied 2 records for table F00021       from DS Access32 to DS
SQLSERVER JDFDTA71 - from Env PRODLOC to Env PRODLOC.
91/104    0 Inserts failed - check jde.log
91/104    DONE
```

Example: jdecpy.log (Unsuccessful Copy)

The following example shows how the copy to the Oracle data source failed:

```
116/75
116/75  STARTING NEW TABLE COPY
116/75  File F0002
116/75  Creating - F0002
116/75  Copy failed
```

By looking in jde.log for this specific error condition (excerpt of the jde.log file shown in the example below), you can further examine the Oracle error. In this case, the associated message ID from the jdecpy.log (116/75) shows that the Oracle error is ORA-01017. The Oracle documentation for error ORA-01017 explains the reason that the table copy failed is that the user ID and password supplied were invalid.

```
**** Module: ORACLE   Fri Jan 31 14:05:49 1997          FILE:
 \B7\SYSTEM\JDBDRV\ORACLE\DBINITCN.C LINE: 133
             116/75    Error - ORA-01017: invalid username/password;
logon denied
```

Working with the sql.log

You can use sql.log to view exactly what is being sent through the ODBC driver. This is not a ERP 8.0 log. This log process is provided by another software vendor. For workstations, sql.log resides in the default root directory of the workstation, generally in c:\. However, you can direct the output to any file in any location. Generally, instead of using the sql.log, you can use the jdedebug.log because it also tracks SQL statements.

In sql.log, the important lines to search for are:

- SELECT * FROM
- SQLBindCol
- Table not found

Verify that you are reading the correct table. If a line appears for every column in the selected table, you selected the correct table.

If you are having difficulty reading the table, verify that the table has the correct number of columns. If you have added columns to the table and you cannot locate the correct number of columns, you need to configure the table. This information is also provided in jde.log.

If you experience a problem with the ODBC settings or cannot connect to a ERP 8.0 ODBC database, turn on logging for jde.log, jdedebug.log, and sql.log. Duplicate the problem, check jde.log or jdedebug.log to view the ODBC error messages, and check the end of sql.log to determine the last process. The majority of ODBC problems occur when the following processes are called:

- Process SQL Statements
- Receive Results

Reading sql.log

In sql.log, the important lines for you to search are:
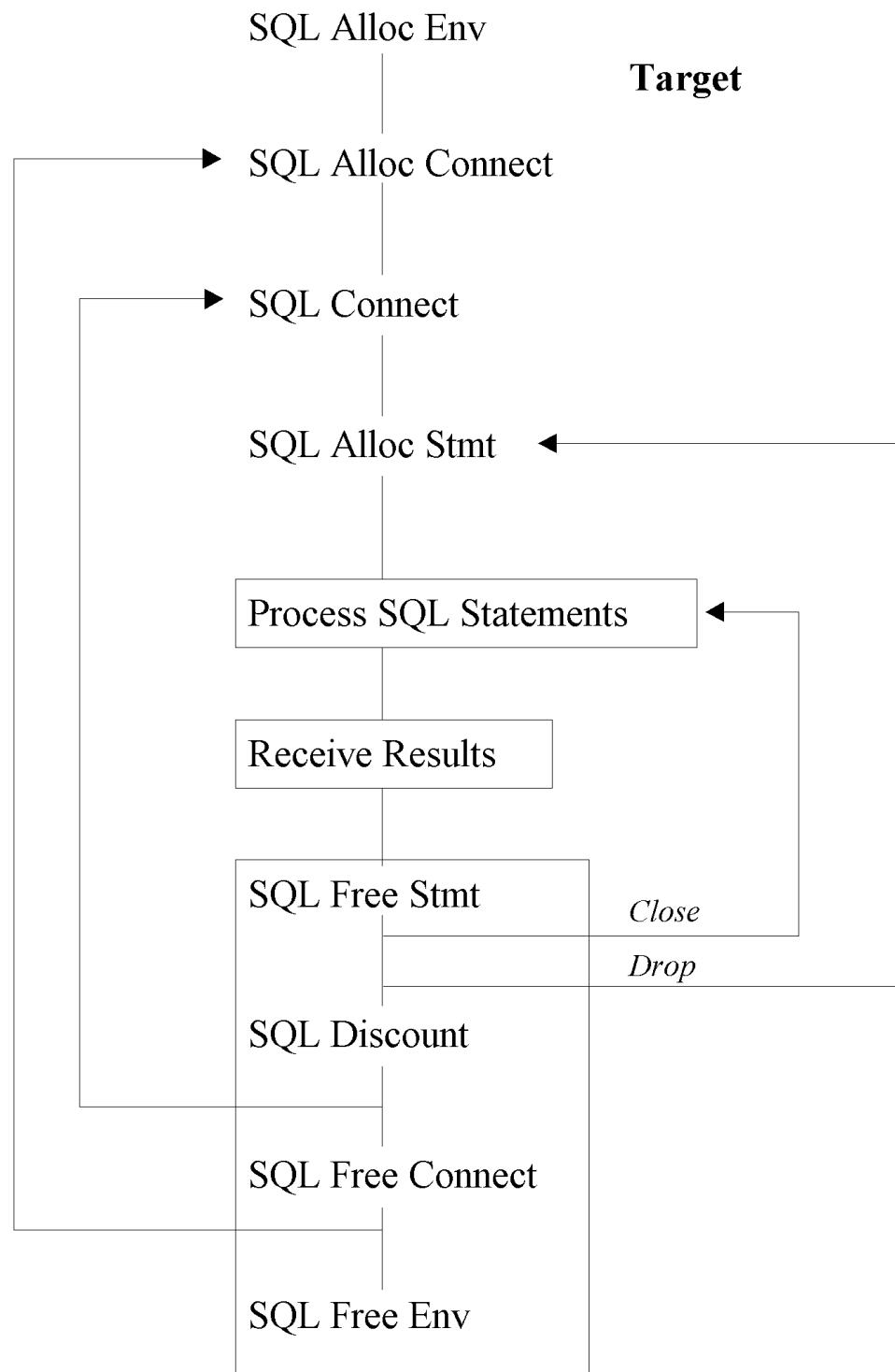
- SELECT * FROM.(bolded in the example below)
- SQLBindCol
- Table not found

Verify that you are reading the correct table. For example, in the sql.log example, there is a line for every column in the selected table. This indicates the correct table is selected.

If you are having difficulty reading the table, verify that the table has the correct number of columns. If you have added columns to the table and you cannot locate the correct number of columns, you need to configure the table. This information is also provided in jde.log.

Process Flow: ODBC Function Calls

This diagram shows the ODBC function calls that include the process that an application uses to connect to a data source:

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SQL Alloc Env

Target

SQL Alloc Connect

SQL Connect

SQL Alloc Stmt

Process SQL Statements

Receive Results

SQL Free Stmt

Close

Drop

SQL Discount

SQL Free Connect

SQL Free Env
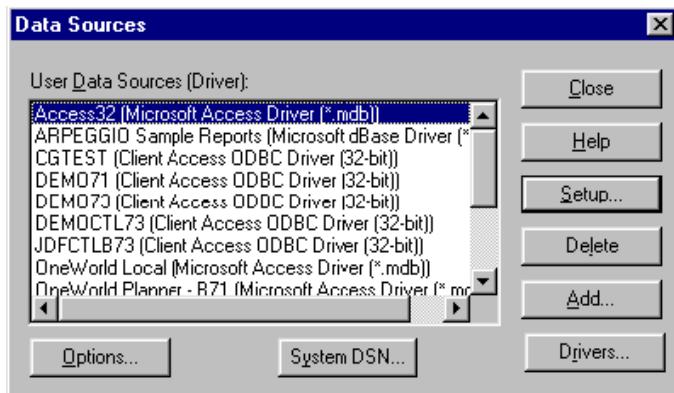
This section consists of the following tasks:

- Turning on sql.log

- Troubleshooting ODBC problems using sql.log
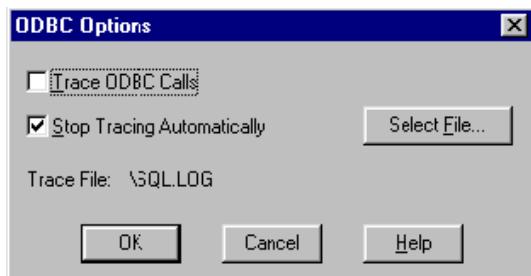
1. From the Windows Control Panel, select 32bitODBC.

2. On Data Sources, click Options.

Caution:

Leave the Stop Tracing Automatically option turned on. Because this log grows at a rapid pace, J.D. Edwards recommends you stop the trace in this manner. This preserves your disk space resources as well as CPU cycles.

Also ensure that Trace ODBC Calls is turned off when you are not debugging because the log files can consume large amounts of disk space as well as CPU cycles.

► **To troubleshoot ODBC problems using sql.log**

1. Ensure the data source names are set up correctly (as system data sources) and that a driver has been set up in the 32bitODBC in Control Panel.

2. Make sure that Client Access has the correct parameters. See the applicable appendices in the *ERP 8.0 Installation Guide.*

3. Ensure that the library to which you are pointing is set up correctly.

4. Look for the following ODBC error messages in jde.log and jdedebug.log:

   - Table not in library

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If the table specified cannot be found in the specified location, you should go to the appropriate DBMS and attempt to locate the table.

- If the table does not exist, you must generate the table. See the *ERP 8.0 Installation Guide* for more information.

- If the table exists but has been moved, you must change your data source to point at the new library.

- Not Binding Column Data Types

  This error message means that the row is in use and that another program has a lock on that data. As a result, you cannot use this row until it has been released by the program that is currently using it.

Example: sql.log

This example shows a sql.log with a SQL select statement shown in bold type.

```
SQLAllocEnv(phenv008F80AC);
SQLAllocConnect(henv008F80AC, phdbc008F78E0);
SQLDriverConnect(hdbc008F78E0, hwnd00000000,
"DSN=Access32;UID=MS889022;PWD=********", 38, szConnStrOut, 355,
pcbConnStrOut, 0);
SQLGetInfo(hdbc008F78E0, 17, rgbInfoValue, 30, pcbInfoValue);
SQLGetInfo(hdbc008F78E0, 1, rgbInfoValue, 2, pcbInfoValue);
SQLAllocStmt(hdbc008F78E0, phstmt008F8DAC);
SQLPrepare(hstmt008F8DAC, "SELECT * FROM F0009      ", -3);
SQLNumResultCols(hstmt008F8DAC, pccol);
SQLDescribeCol(hstmt008F8DAC, 1, szColName, 20, pcbColName, pfSqlType,
pcbColDef, pibScale, pfNullable);
SQLDescribeCol(hstmt008F8DAC, 2, szColName, 20, pcbColName, pfSqlType,
pcbColDef, pibScale, pfNullable);
SQLDescribeCol(hstmt008F8DAC, 3, szColName, 20, pcbColName, pfSqlType,
pcbColDef, pibScale, pfNullable);
SQLDescribeCol(hstmt008F8DAC, 4, szColName, 20, pcbColName, pfSqlType,
pcbColDef, pibScale, pfNullable);
SQLDescribeCol(hstmt008F8DAC, 5, szColName, 20, pcbColName, pfSqlType,
pcbColDef, pibScale, pfNullable);
SQLDescribeCol(hstmt008F8DAC, 6, szColName, 20, pcbColName, pfSqlType,
pcbColDef, pibScale, pfNullable);
SQLDescribeCol(hstmt008F8DAC, 7, szColName, 20, pcbColName, pfSqlType,
pcbColDef, pibScale, pfNullable);
SQLDescribeCol(hstmt008F8DAC, 8, szColName, 20, pcbColName, pfSqlType,
pcbColDef, pibScale, pfNullable);
SQLDescribeCol(hstmt008F8DAC, 9, szColName, 20, pcbColName, pfSqlType,
pcbColDef, pibScale, pfNullable);
SQLDescribeCol(hstmt008F8DAC, 10, szColName, 20, pcbColName, pfSqlType,
pcbColDef, pibScale, pfNullable);
SQLDescribeCol(hstmt008F8DAC, 11, szColName, 20, pcbColName, pfSqlType,
pcbColDef, pibScale, pfNullable);
SQLDescribeCol(hstmt008F8DAC, 12, szColName, 20, pcbColName, pfSqlType,
pcbColDef, pibScale, pfNullable);
SQLDescribeCol(hstmt008F8DAC, 13, szColName, 20, pcbColName, pfSqlType,
pcbColDef, pibScale, pfNullable);
```

Working with the jdeinst.log

You can use jdeinst.log to view the status of the ERP 8.0 silent installation. The silent installation mode allows you to submit a workstation installation request through command line arguments. ERP 8.0 creates a log file that records error conditions encountered during the silent installation and also indicates if the silent installation was successful. This file, called jdeinst.log, is located in the root directory of the workstation.

Example: jdeinst.log

This example shows a jdeinst.log indicating a successful ERP 8.0 silent installation completed on a workstation. Comments are included.

```
File Warning: Directory d\b7\PROD exists, contents are not erased.

Congratulations: Install completed!
```

Troubleshooting the Enterprise Server

This section is a guide for troubleshooting problems that can occur on the ERP 8.0 enterprise server. This chapter is a general guide for basic troubleshooting techniques on the ERP 8.0 enterprise server. By using these procedures, you can troubleshoot batch applications and business functions that process on the enterprise server. Other chapters in this guide describe procedures that are platform-specific for the various ERP 8.0 enterprise servers.

Troubleshooting for Enterprise Servers - General Information

This chapter describes the following types of general problems you might encounter on a ERP 8.0 enterprise server. This information applies to all operating systems.

The list below includes some potential problems that you could encounter on the enterprise server:

- Communication failure when submitting a UBE or when trying to run business function logic on the server

- Error message appearing at the bottom of a form (press F8 or click Bitmap to view an error description)

Working with the Enterprise Server Log Files

You should be familiar with the various logs used to troubleshoot problems on the server. By using these logs you can troubleshoot batch applications and business functions that are executing on the enterprise server.

Types of Enterprise Server Log Files

On ERP 8.0 enterprise servers, logs are generally classified as either logic processing logs or batch processing logs.

Logic Processing Logs

There are two major log file sources that you can use for troubleshooting processing faults on the enterprise server:

- jde.log

  This log shows fatal errors. It can track any fault that might occur within ERP 8.0.

- jdedebug.log

  This log tracks API calls and SQL statements as well as other messages. You can use this file to determine the point in time when normal execution stopped. The system does not use jdedebug.log to track errors. Instead, this log is used to track the timing of ERP 8.0 processes.

Batch Processing Logs

You can use the following log to identify faults in ERP 8.0 processing related to batch processes:

- Batch process log

Use batch process logs to view the process flow in batch processes. This log can contain event rule (ER) references, batch application process flow, and SQL statements, as well as other messages.

You can also view logs using the Work with Servers application. See *The Work with Servers Program i*n the *ERP 8.0 System Administration Guide* for more information about this application.

Viewing Enterprise Server Logs from the Workstation

You must log on to the server to view logs for the server. You can also view portions of log files from the workstation that initiated the calls to the server.

► **To view server logs from the workstation**

1. In the enterprise server jde.ini file, in the [DEBUG] section, set the ClientLog parameter to 1.

   This setting enables the server to send logs to workstations.

   Example:

```
 [DEBUG]
ClientLog=1
```

2. In the workstation jde.ini file, in the [DEBUG] section, set the ServerLog parameter to 1.

   This setting enables the workstation to receive log information from the enterprise server.

   Example:

```
 [DEBUG]
ServerLog=1
```

See Also

❑ *Enabling and Disabling jde.log* in this chapter.

Working with the Enterprise Server jde.log File

You can use the enterprise server jde.log to track fatal error messages generated by ERP 8.0 batch applications and business functions that are executing on the enterprise server. The jde.log tracks any fault that might occur within ERP 8.0. When you are looking for startup errors, you should read the jde.log from the top down. For other errors, you should read from the bottom up.

If jde.log is enabled, a uniquely identified log file is created each time you start a ERP 8.0 job (including ERP 8.0 startup) on the enterprise server. These logs are associated with an enterprise server process ID (Job Number for AS/400).

The process ID (Job Number for AS/400) is appended to the file name, before the .log extension, with an underscore character. For example, the file name might be jde_442.log.

jde.log File Creation

The enterprise server jde.log is created (if not previously existing or overwritten (if previously existing) at the start of every ERP 8.0 session.

For a Windows NT enterprise server jde.log file, ERP 8.0 appends new information to the end of the jde.log

Enabling and Disabling jde.log

For normal use, the enterprise server should be set to enable the jde.log and disable the jdedebug.log. Valid jde.ini parameter setting combinations for enabling or disabling server logs are listed below.

Enable jde.log:

```
[DEBUG]
Output=NONE
LogErrors=1
JobFile=valid location/name (1)
DebugFile=valid location/name (2)
```

Enable jde.log and jdedebug.log:

```
[DEBUG]
Output=FILE
LogErrors=1
JobFile=valid location/name (1)
DebugFile=valid location/name (2)
```

Disable jde.log:

```
[DEBUG]
Output=NONE
JobFile=blank/invalid location/name (1)
DebugFile= blank/invalid location/name (2)
```

Notes:

1. JobFile is the location that will contain the files/members generated by the jde.log. The name is the naming convention that ERP 8.0 uses to create the files/members with the syntax jde_*process_ID*.log, where jde is the file/member name prefix, *process_ID* is a uniquely named process ID, and log is the file/member suffix or extension.

2. For non-AS/400 enterprise servers, DebugFile is the location that will contain the files generated by the jdedebug.log. The name is the naming convention that ERP 8.0 uses to crate files with the syntax jdedebug_*process_ID*.log, where jdedebug is the file name prefix, *process_ID* is a uniquely named process ID, and log is the file suffix or extension.

For AS/400 enterprise servers, DebugFile is the location that will contain the members generated by the jdedebug. The name is the naming convention that ERP 8.0 uses to create members with the syntax jdedebug_*process_ID*, where jdedebug is the file name prefix and *process_ID* is a uniquely named process ID.

Recommendations for the Enterprise Server jde.log

You can create a normal (successful) jde.log by signing on to ERP 8.0 and then immediately signing off. Use this log of successful startup statements to compare against logs that have a problem.

You can also rename the log to indicate the nature of the problem. For example, you might delete the jde.log and then run a report that causes an error condition. Then you could rename the jde.log to report.log.

If you are the only user running on an instance of ERP 8.0, you can add comment lines to the jde.log indicating the sequence of events you are performing. For example, you might be running an application that you know causes an error. Just before you run the application, you could edit the jde.log to add a comment line stating you are about to start the suspected application.

Recommendations for Setting Up Server Locations

J.D. Edwards recommends that you create a separate directory on your enterprise server for logs. You should set up the jde.ini file to explicitly direct log files to that directory. For jde.log, the location and name of the log file are controlled by the following default setting:

```
[DEBUG]
JobFile=jde.log
```

Note:

JobFile is the location that will contain the files generated by the jde.log. The name is the naming convention that ERP 8.0 uses to create the files with the syntax jde_*process_ID*.log (jde_*jobnumber*.log for AS/400), where jde is the file/member name prefix, *process_ID* is a uniquely named process ID, and log is the file suffix or extension.

If you do not specify a location, by default, ERP 8.0 places the log files in the directory where you ran the ERP 8.0 startup executable. For example, on a UNIX machine if you start ERP 8.0 with the following commands and assuming that logging is enabled, the system places the log files in the /u13/jdedwardsoneworld/b733/system/bin32 directory:

```
cd /u13/jdedwardsloneworld/b733/system/bine32
RunOneWorld.sh
```

Similarly, on a UNIX machine, if you start ERP 8.0 with the following commands and assuming that logging is enabled, the system places the log files in the /usr/jdedwardsoneworld directory because that is the working directory:

```
cd /usr/jdedwardsoneworld
/u13/jdedwardsoneworld/b733/system/bin32/RunOneWorld.sh
```

If you set up your UNIX machine to automatically start ERP 8.0 when the machine is booted, it is especially important that you specify the full path of the log file in the jde.ini file.

Naming Conventions for jde.log

ERP 8.0 processes crate logs as jde_*processID*.log (jde_*JobNumber*.log for AS/400) where *processID* is the process ID of the process that creates the log.

Non-AS/400 ERP 8.0 processes move logs for batch jobs to the PrintQueue directory and rename them as *report_version_date_time*.log where *report* is the report name and version is the version name - for example, R014021_XJDE0001_D990312_T161854215.log.

► To set up the enterprise server jde.log

1. Locate the enterprise server jde.ini file (JDE member for AS/400).

   - For AS/400 enterprise servers, the JDE member is located under the file .INI, which is located within the *release*SYS library. The variable *release* is the ERP 8.0 release level (for example, B733SYS). For a complete list of libraries and their contents, see the *Server Administration - AS/400* section of this guide.

   - For UNIX enterprise servers, you can locate the jde.ini file by examining the UNIX environment variable JDE_BASE (the variable name is case-sensitive). For example, you might enter the command:

```
echo $JDE_BASE
```

     Generally, this file is located in a directory called "ini" in the directory tree under the base install directory - for example, /u04/jdedwardsoneworld/b733. In this case, the directory with the JDE.INI file (the file name is case-sensitive) is JDE_BASE=/u04/jdedwardsoneworld/b733/ini.

   - For Windows NT enterprise servers, you can locate the jde.ini file in the ERP 8.0 installation directory under system\bin32.

2. Use a text editor to open the jde.ini file.

3. In the [DEBUG] section, verify or change your settings for the *job file* variable:

```
 [DEBUG]
JobFile=job file
```

Setting	Description
JobFile=*job file*	Specifies the location and name of the jde.log file/member. The default value is jde.log.

4. Enable or disable the logging of errors to the jde.log file by setting the following parameter in the [DEBUG] section:

```
[DEBUG]
LogErrors=0/1
```

Setting   Description

This parameter controls whether the logging function (for both jde.log and jdedebug.log) is enabled. Valid values are:

LogErrors=*0/1*   0   Disabled. Do not write errors to the jde.log file/member or events to the jdedebug.log file (JDEDEBUG member for AS/400).

1   Enabled. Write errors to the jde.log file and, if enabled, events to the jdedebug.log file (JDEDEBUG member for AS/400).

5.   Save the changes and close the file.

Example: Enterprise Server jde.log

This enterprise server example log shows errors caused by signon tables not being properly closed after fetching data. Normally, the only way this can happen is if a business function program did not close the table. Therefore, generated code applications cannot have this problem.

Most entries in the jde.log file are significant, and you should closely examine them. This information is also used by developers to indicate problems with the application that need to be addressed.

The following shows an example of the jde.log from the enterprise server:

```
jde.log - Notepad
File  Edit  Search  Help
3859      Wed Nov 12 14:49:24 1997         JDEKRNL_A/C/JDEKINIT351
          KNT0000032 - InitEnv on server hp9000b failed

3859      Wed Nov 12 14:49:24 1997         JDBDRV_A/C/JDBNSNRC26
          BNT0000078 - Unable to start or find: remote environment or remote user

3859      Wed Nov 12 14:49:24 1997         JDBDRV_A/C/JDBNINCN113
          BNT0000026 - Unable to find remote environment or user for new environment

3859      Wed Nov 12 14:49:24 1997         JDEKRNL_A/C/JDB_DRVM513
          JDB9900164 - Failed to connect to ORACLE PVC

3859      Wed Nov 12 14:49:24 1997         JDEKRNL_A/C/JTP_CM238
          JDB9909003 - Could not init connect.

3859      Wed Nov 12 14:49:24 1997         JDEKRNL_A/C/JTP_TM857
          JDB9909100 - Get connect info failed: Transaction ID =

3859      Wed Nov 12 14:49:24 1997         JDEKRNL_A/C/JDB_RQ11485
          JDB3100013 - Failed to get connectinfo

3859      Wed Nov 12 14:49:24 1997         JDEKRNL_A/C/ENVAPI57
          MSC0000050 - The JDB_OpenTable for F00941 Failed.

3859      Wed Nov 12 14:49:25 1997         JDEKRNL_A/C/JDB_RST295
          JDB9900299 - Failed to find global table specs.
```

Working with the Enterprise Server jdedebug.log File

You can use the enterprise server jdedebug.log to determine the point in time when normal execution stopped. The system does not use jdedebug.log to track errors. Instead, it uses this log to track the timing of ERP 8.0 processes. The log contains API calls and SQL statements as well as other messages.

You can use jdedebug.log to find out where a process has ended. For example, log data can include what the ODBC was trying to connect to, the SQL statement that was being executed for a specific table, and if memory has been freed.

If jdedebug is enabled, each jdenet_n job and batch process that is started on a server creates a uniquely identified jdedebug.log. These logs are associated with an enterprise server process ID. Each time that ERP 8.0 is started on the enterprise server and each time that a batch process job is executed on the enterprise server, a new jdedebug.log is created.

For enterprise servers, the process ID (Job Number for AS/400) is appended to the file name with an underscore character before the .log extension. For example, the file name might be jdedebug_442.log.

Server administrators are responsible for clearing and deleting jde.log and jdedebug_*.log files from the enterprise server.

The enterprise server jdedebug.log is created (if not previously existing) or overwritten (if previously existing) at the start of every ERP 8.0 session.

For a Windows NT enterprise server jde.log file, ERP 8.0 appends new information to the end of jde.log.

Reading the jdedebug.log

If your process failed and you have logging turned on, look in your jdedebug.log for the following messages:

- Not Found

- Failure

Also, look at the end of the log to see what task was executed last. Generally, important lines in the log are:

- SELECT

  The SELECT lines indicate which table you are selecting. The log tells you where the table resides. For the AS/400, this location will be a library. For non-AS/400 servers, this location will be an environment. You should verify that the selected libraries and environments are correct.

- ODBC Version

  The ODBC lines will indicate whether you are having problems connecting to the driver.

Enabling and Disabling jdedebug.log

For normal use, the enterprise server should be set to enable the jde.log and disable the jdedebug.log. Valid setting combinations for enabling or disabling server jdedebug.log are listed below.

Enable jdedebug.log:

```
  [DEBUG]
Output=FILE
LogErrors=1
JobFile=valid location/name (1)
DebugFile=valid location/name (2)
```

Enable jde.log and jdedebug.log:

```
  [DEBUG]
Output=BOTH
LogErrors=1
JobFile=valid location/name (1)
DebugFile=valid location/name (2)
```

Disable jdedebug.log:

```
  [DEBUG]
Output=NONE
LogErrors=0
JobFile=valid location/name (1)
DebugFile=valid location/name (2)
```

The [DEBUG] section of the jde.ini file contains the files/members generated by the jde.log. The name is the naming convention that ERP 8.0 uses to create the files/members with the syntax jde_<pid>.log, where jde is the file/member name prefix, <pid> is a uniquely named process ID, and log is the file/member suffix or extension.

For enterprise servers, the jde.ini file is the location that will contain the files generated by the jdedebug.log. The name is the naming convention that ERP 8.0 uses to create files with the syntax jdedebug_<pid>.log (jdedebug_<*JobNumber*>.log), where jdedebug is the file name prefix, <pid> is a uniquely named process ID, and log is the file suffix or extension.

Recommendations for the Enterprise Server jdedebug.log

You can create a normal (successful) jdedebug.log (JDEDEBUG for AS/400) by signing on to ERP 8.0 and then immediately signing off. Use this log of successful start up statements to compare against logs that have a problem.

You can also rename the log to indicate the nature of the problem. For example, you might delete the jdedebug.log and then run a report that causes an error condition. Then you could rename the jdedebug.log to report.log.

Another alternative is to add comment lines to the jdedebug.log indicating the sequence of events you are performing. For example, you might be running an application that you know causes an error. Just before you run the application, you could edit the jde.log to add a comment line stating that you are about to start the suspected application.

Recommendations for Setting Up Server Locations

J.D. Edwards recommends that you create a separate directory on your enterprise server for logs. You should setup the jde.ini file to explicitly direct log files to that directory. For jdedebug.log, the location is controlled by the following setting:

```
[DEBUG]

DebugFile=jdedebug.log
```

For enterprise servers, DebugFile is the location that will contain the files generated by the jdedebug.log. The name is the naming convention that ERP 8.0 uses to create files with the syntax jdedebug_*process_ID*.log (jdedebug_*JobNumber*.log for AS/400), where jdedebug is the file name prefix, *process_ID* is a uniquely-named process ID, and log is the file suffix or extension.

By default ERP 8.0 places the log files in the directory where you ran the ERP 8.0 startup executable. For example, on a UNIX machine if you start ERP 8.0 with the following commands:

```
cd /u13/jdedwardsoneworld/b733/system/bin32 RunOneWorld.sh
```

and assuming that logging is enabled, the system places the log files in the /u13/jdedwardsoneworld/b733/system/bin32 directory. Similarly, on a UNIX machine, if you start ERP 8.0 with the following commands:

```
cd /usr/jdedwardsoneworld /u13/jdedwardsoneworld/b733/system/bin32
RunOneWorld.sh
```

and assuming that logging is enabled, the system places the log files in the /usr/jdedwardsoneworld directory. This is the working directory. If you set up your UNIX machine to automatically start ERP 8.0 when the machine is booted, it is especially important that you specify the full path of the log file.

Naming Conventions for jdedebug.log on the Enterprise Server

ERP 8.0 processes create logs as jdedebug_*process_ID*.log where *process_ID* (Job Number for AS/400) is the process ID of the process creating the log. For example, a batch report running on a UNIX server as process 123456 would produce a file named jdedebug_123456.log.

▶ To set up the enterprise server jdedebug.log

1. Locate the enterprise server jde.ini file (JDE member for AS/400). For more information, see the task "To set up the enterprise server jde.log" earlier in this chapter.

2. Use a text editor to open the jde.ini file.

3. In the [DEBUG] section, verify or change your settings for the *debug file* variable:

```
[DEBUG]

DebugFile=debug file
```

Setting	Description
DebugFile=*debug file*	Specifies the name of the jdedebug.log file (JDEDEBUG member for AS/400).
	For non-AS/400 enterprise servers, the default value is jdedebug.log.
	For AS/400 enterprise servers, the default value is JDEDEBUG.

4. Enable or disable the logging of events to the jdedebug.log file (JDEDEBUG member for AS/400) by setting the following parameter in the [DEBUG] section:

```
[DEBUG]
LogErrors=0/1
Output=output parameter
```

Setting	Description
LogErrors=0/1	This parameter controls whether the logging function (for both jde.log and jdedebug.log) is enabled. Valid values are:
	0 Disabled. Do not write errors to the jde.log file/member or events to the jdedebug.log file (JDEDEBUG member for AS/400).
	1 Enabled. Write errors to the jde.log file and, if enabled, events to the jdedebug.log file (JDEDEBUG member for AS/400).
Output=*output parameter*	Valid values are:
	• NONE No trace information is written to jdedebug.log (JDEDEBUG member for AS/400).
	• FILE Database and runtime trace information is written to the file/member specified by the DebugFile= parameter in the [DEBUG] section.
	• EXCFILE Runtime trace information is written to the file/member specified by the DebugFile= parameter in the [DEBUG] section.
	• BOTH Trace information is written to both jde.log and jdedebug.log (JDEDEBUG member for AS/400).

5. Save the changes and close the jde.ini file.

Example: jdedebug.log (Output Enabled)

This example shows a sample of jdedebug.log when the output is enabled. The areas of the following log that are presented in bold type are especially useful in the debugging process. The prefix number for each line in the output refers to the process ID of the running job. This number will change, depending on the log file (such as jde.log) and the process that is writing to the log.

```
4294817365/4294727505   Entering   JDB_InitUser
4294817365/4294727505   Entering JDB_BeginTransaction
4294817365/4294727505     Entering JDB_InitUser
4294817365/4294727505     Entering JDB_BeginTransaction
4294817365/4294727505     Entering JDB_OpenTable(idTable=36632)
4294817365/4294727505     Entering JDB_SetSelection
4294817365/4294727505     Entering JDB_SelectKeyed
4294817365/4294727505     SELECT OMENHV, OMAPPLID, OMOBNM, OMDATP,
OMDATS, OMUGRP, OMOAPP, OMDATM, OMOVRE, OMSY, OMSTSO, OMFUNO, OMOCM2
FROM PVC.F986101     WHERE  ( OMENHV = 'TESTB71LOC' AND OMSTSO = 'AV' )
ORDER BY OMSTSO ASC,OMAPPLID ASC
4294817365/4294727505     Entering JDB_Fetch
4294817365/4294727505     Entering JDB_Fetch
4294817365/4294727505     Entering JDB_Fetch
4294817365/4294727505     Entering JDB_CloseTable
4294817365/4294727505     Entering JDB_ClearSequencing
4294817365/4294727505     Entering JDB_ClearSelection
4294817365/42947275055    Entering JDB_OpenTable(idTable=24208)
4294817365/4294727505     Entering JDB_SelectAll
4294817365/4294727505     SELECT  *  FROM PVC.F98611
4294817365/4294727505     Entering JDB_Fetch LMLL = :KEY1 )
4294817365/4294727505     Entering JDB_Fetch
4294817365/4294727505      Entering JDB_OpenTable(idTable=99634)
4294817365/4294727505     Entering JDB_FetchKeyed
4294817365/4294727505     RESET: SELECT  *  FROM PVC.F00942     WHERE  (
EMPATHCD = :KEY1 )
4294817365/4294727505     Entering JDB_CloseTable
4294817365/4294727505     Entering JDB_ClearSequencing
4294817365/4294727505     Entering JDB_ClearSelection
4294817365/4294727505     Entering JDB_OpenTable(idTable=5)
4294817365/4294727505     ODBC version which the Driver Manager conforms
: 02.50.0000
           ODBC version which the driver supports : 02.50
           The DBMS product accessed by the driver : - DB2/400 SQL
4294817365/4294727505     Entering JDB_FetchKeyed
4294817365/4294727505     SELECT  *  FROM DEMO73/F0009     WHERE  (
GCSY = '      ' )
4294817365/4294727505      Entering JDB_OpenTable(idTable=6)
4294817365/4294727505     Entering JDB_FetchKeyed
4294817365/4294727505     SELECT  *  FROM DEMO73/F0010     WHERE  (
CCCO = '00000' )
4294817365/4294727505      Entering JDB_OpenTable(idTable=630)
4294817365/4294727505     Entering JDB_FetchKeyed
4294817365/4294727505     SELECT  *  FROM DEMO73/F4009     WHERE  (
CPSY = '      ' )
4294817365/4294727505      Entering JDB_OpenTable(idTable=175)
4294817365/4294727505     Entering JDB_FetchKeyed
4294817365/4294727505     SELECT  *  FROM PVC.F00921     WHERE  ( ULUSER
= 'MS889022' )
4294817365/4294727505      Entering JDB_OpenTable(idTable=174)
4294817365/4294727505     Entering JDB_FetchKeyed
4294817365/4294727505     SELECT  *  FROM PVC.F0092     WHERE  ( ULUSER
= 'MS889022' )
4294817365/4294727505     Entering JDB_CloseTable
```

Working with the Batch Process Log File

Whenever you run a batch process requested from a workstation, an individual log file is created in the ERP 8.0 print queue directory (b7\PrintQueue) on that workstation. For any batch process request issued from a workstation, this file is created even if you have specified that the batch process report is to run on the enterprise server. For batch processes requested from a server, the jdedebug.log file is created on the server in the ERP 8.0 print queue directory (b7\PrintQueue).

Based on the setting of the UBESaveLogFile parameter in the [UBE] section of the jde.ini file, this log file is deleted or saved on successful completion of batch processes. This log file shows different types of messages that can help in tracking errors in the batch process. The messages are:

- Section Level Process
- Object Level Process
- ER Level Process
- DB Level Process

The batch process log can contain ER references, batch process flow, and SQL statements, among other messages. You can use the batch process log file to determine when normal execution stopped.

The batch process log file shows you the process flow in batch processes. The following example describes the event flow within the batch engine and provides sample messages that would be written to the log at each point in the event flow, assuming UBEDebugLevel is set to 6. Note that each message written to the log file displays the error level of that message in brackets. For example, -UBE--[2]-- will be a section-level message.

6. When a UBE processes a section, it begins by opening the business view for that section within the INIT section event. As a result, a SELECT statement will follow in the logging directly after the INIT section for each section.

   --UBE--[2]-- 355/392 Process Init Section

   --UBE--[2]-- 355/392 InitSection for Business Unit Report Driver

   --UBE--[2]-- 355/392 InitSection for Business Unit Report LBH

   --UBE--[4]-- 355/392 SELECT T0.MCMCU, T0.MCSTYL, T0.MCLDM, T0.MCCO, T0.MCAN8, T0.MCCNTY, T0.MCADDS, T0.MCFMOD, T0.MCDL01, T0.MCDL02, T0.MCDL03, T0.MCDL04, T0MCRP01, T0.MCRP02, T0.MCRP03, T0.MCRP04, T0.MCRP05, T0.MCRP06, T0.MCRP07, T0.MCRP08, T0.MCRP09, T0.MCRP10, T0.MCRP11, T0.MCRP12, T0.MCRP13, T0.MCRP14, T0.MCRP15, T0.MCRP16, T0.MCRP17, T0.MCRP18, T0.MCRP19, T0.MCRP20, T0.MCRP21, T0.MCRP22, T0.MCRP23, T0.MCRP24, T0.MCRP25, T0.MCRP26, T0.MCRP27, T0.MCRP28, T0.MCRP29, T0.MCRP30, T0.MCPECC, T0.MCALS, T0.MCALCL, T0.MCSBLI, T1.CCCO, T1.CCNAME, T1.CCRCD FROM F0006 T0,F0010 T1 WHERE (T1.CCCO=T0.MCCO) ORDER BY T0.MCCO ASC,T0.MCMCU ASC

7. After INIT Section, the engine calls Advance Section to retrieve a record from the SELECT statement.

   --UBE--[2]-- 355/392 Process Adv Section

   --UBE--[2]-- 355/392 Processing Adv Section for Page Header

8. After the retrieve, the engine performs the DO Section processing. This includes any event rules attached to the DO Section event.

   --UBE--[2]-- 355/392 Process DO Section

   --UBE--[2]-- 355/392 Processing DO Section for Page Header

   --UBE--[4]-- 355/392 --ER: Line(1): Loading Data Structure for BSFN

   --UBE--[4]-- 355/392 --ER: Line(1): Processing BSFN : GetCompanyAndReportDesc

   --UBE--[4]-- 355/392 --ER: Line(1): Done Processing BSFN : GetCompanyAndReportDesc

--UBE--[4]-- 355/392 --ER: Line(1): Unloading Data Structure for BSFN

--UBE--[4]-- 355/392 --ER: Line(1): Done Processing ER BSFN

9. Within DO Section, each object is processed and eventually printed in INIT, DO, and END object order.

--UBE--[3]-- 355/392 Process Init Object

--UBE--[3]-- 355/392 Processing Init Item SystemTime in Section Page Header

--UBE--[3]-- 355/392 Process DO Object

--UBE--[3]-- 355/392 Processing Do Object SystemTime in Section Page Header

--UBE--[6]-- 355/392 Printing Object Value = 14:35:46

--UBE--[3]-- 355/392 Process End Object

--UBE--[3]-- 355/392 Process Init Object

--UBE--[3]-- 355/392 Processing Init Item SystemDate in Section Page Header

--UBE--[3]-- 355/392 Process Do Object

--UBE--[3]-- 355/392 Processing Do Object SystemDate in Section Page Header

--UBE--[6]-- 355/392 Printing Object Value = 3/6/00

--UBE--[3]-- 355/392 Process End Object

10. After all the objects for a section have been processed, the engine calls Process Last Object and then behins processing for the next section in the report.

--UBE--[3]-- 355/392 Processing Do Object ModelAccountsandConsolid in Section Page Header

--UBE--[6]-- 355/392 Printing Object Value = MD

--UBE--[3]-- 355/392 Process End Object

--UBE--[3]-- 355/392 Process Last Object

--UBE--[2]-- 355/392 Process End Page Header Section

--UBE--[2]-- 355/392 Process Do Section

--UBE--[2]-- 355/392 Process Do Section for Business Unit Report Driver

11. When all sections have been processed, if the report finishes without errors, the following messages are displayed at the end of the log:

--UBE--[6]-- Successfully Finishing Engine

...

UBE Job Finished Successfully.

The level of detail provided by the batch process log is controlled by the UBEDebugLevel parameter of the jde.ini file. Valid values for UBEDebugLevel are shown below:

Setting	Description
0	No error messages
3	Object-level messages
4	Event rule messages and SQL statements (plus levels 1-3)

► **To set up the *<batch_process>*.log**

1. Locate the workstation jde.ini file. The ERP 8.0 setup program places this file in the working Windows directory (for example, c:\WINNT40\jde.ini). If you are unsure of your workstation's working Windows directory, use the Find command to locate the jde.ini file.

2. Use an ASCII editor (like Notepad or Wordpad) to open the file.

3. Set the level of batch report debugging information that you want written to the batch process log file and whether you want the file to be saved. These settings are controlled by the following parameters in the [UBE] section:

```
 [UBE]
UBEDebugLevel=debug level
UBESaveLogFile=0/1
```

Setting	Description
UBEDebugLevel=debug level	Specifies the level of UBE debug logging. The default value is 0. Valid values are:
	0 No error messages
	1 Warnings and high-level information
	2 Section-level messages (plus Level 1 messages)
	3 ER messages and database mapping messages (plus Level 1-2 messages)
	4 SQL statements (plus Level 1-3 messages)
	5 Database output (plus Level 1-4 messages)
	6 Batch process function calls and printed output values (plus Level 1-5 messages)
UBESaveLogFile=0/1	Specifies whether the batch_report.log file will be saved. Valid values are:
	0 The batch_report.log file is not saved.
	1 The batch_report.log file is saved in the workstation's ERP 8.0 print queue directory (b7\PrintQueue).

4. Save the changes and close the jde.ini file.

Troubleshooting General Problems

This section provides general troubleshooting information for the enterprise server.

General Problems

You can troubleshoot general enterprise server problems using the Server Administration Workbench, a J.D. Edwards executable that enables you to monitor server components, processes, and resources.

► To troubleshoot general problems

1. Use SAW to verify that you are looking at the correct port and the server is operational on that port. SAW runs only on workstations and Windows NT enterprise servers. However, on other platforms, you can use the tool to view network connections to enterprise servers.

2. Verify the netTrace setting in the enterprise server's jde.ini file:

```
[JDENET]

netTrace=0/1 (disabled/enabled)
```

Variable Name   Description

netTrace=0/1   Controls whether the net trace function is enabled. Valid values are:

0 = Disabled. ERP 8.0 does not generate Net log information
1 = Enabled. ERP 8.0 generates Net log information

Note:

Using SAW for Windows NT, you can turn logging on or off for a particular kernel process. *See Monitoring ERP 8.0 with SAW on Windows NT* for additional details

3. Return to ERP 8.0 and duplicate the problem. The trace facilities write debugging information to the jde.log and jdedebug.log files. See Work with Log Files.

4. After running the business function again, look at the jde.log files on the server. Search for the following message (you must search for lowercase):

    jdenet_n process

   If you cannot find this message, bring the server down and back up. If you do find this message, then look at the jde.log file with the same process ID as the net process.

5. Verify that the user is running in the correct environment or path code - for example PD7334 or DV7334. If this environment is not set up on the server, you receive errors on the workstation jde.log as well as the enterprise server jde.log.

6. In the jde.logs on the enterprise server, look for a JDENET_SendMSg Failed Error=12 message. This means the JDENET server is down, and you must restart it.

7. In the jde.log file on non-AS/400 enterprise servers, look for any Unable to connect to Oracle messages. Search on ORA-. If you do find messages, this indicates problems connecting to Oracle. You can get an indication of an Oracle connection problem if, in a business function, you select the find/browse, data is not found, and no errors are received from the application. You need help from an Oracle database

administrator at this point. To debug this problem, see the section in this document on sql.log.

8. Look in the jdexxx.log file (where xxx is the ID of the process that created the log) on the server for the following message:

```
Could not find symbol in the <BSFN dll name>
```

If present, this message might mean that the business function did not build on the enterprise server.

9. If you have not found a problem indicating why you are unable to run an application on the enterprise server, you will need to debug it on the server.

Note:

For Windows NT enterprise servers, if you cannot identify a problem by reading the log, you need to put the business function through debug on the server. This requires knowledge of C++ and how to debug. See Microsoft's documentation on Debugging C++.

Communication Problems

When you submit an application to an enterprise server through an override of the master business function set in Object Configuration Manager, you might experience communication problems with the enterprise server. The business function then runs locally on the client workstation. ERP 8.0 displays a window to inform you that the business function is running in a new location.

► **To troubleshoot communication problems**

If ERP 8.0 displays a window to inform you that a business function is running in a new location, use the following procedure:

1. Check your jde.ini on the workstation to make sure the JDENET service name (port number) is correct and valid. This port number must match the settings in the server jde.ini file, and the ERP 8.0 server must be running to successfully submit reports or to run business logic on a server. Security services and transaction management services also require the ERP 8.0 server to be running.

```
 [JDENET]
serviceNameListen=service name
serviceNameConnect=service name
```

Setting	Description
serviceNameListen=service name	Specifies the communications service port on the TCP/IP network. ERP 8.0 uses this port address to listen for requests on the network.
	Through the use of a file called "services", you can associate the port number with a unique name. The default value is jde_server (port number 6003).
ServiceNameConnect= service name	Specifies the communications service port on the TCP/IP network. ERP 8.0 uses this port address to connect to the network.
	Through the use of a file called "services", the port number can be associated with a unique name. The default value is jde_server (port number 6003).

2. On your workstation, exit ERP 8.0 and turn logging on in the jde.ini. Run the application on the server again. Then check the jde.log file to see if any of the following errors are logged:

> JDENET_SendMsg Failed Error=8

This can mean you are not using the correct TCP/IP service port or that the enterprise server does not have that JDENET listing.

> JDENET_SendMsgFailed Error=5, 11, or 12

These errors can mean that although the message is being sent to the correct port, the enterprise server's JDENET is down.

3. From within SAW, change the port address to determine if both the workstation and server are using the same port. Typically, network administrators run SAW using a workstation's ERP 8.0 software, although you can run a stand-alone version on Windows NT server platforms.

4. Check the services file on your workstation (located in your operating system directory for WIN95 or *operating system directory*\System32\ drivers\etc for Windows NT). Ensure there is a blank line at the end of the file and that you have the service name mentioned in Step 1 (for example, jde_server) going to the correct port address on the server. Verify the port address with the server administrator.

5. If you are receiving a Communication Failure message, try resubmitting the application. A time out may have occurred.

```
  [JDENET]

netTrace=0/1 (disabled/enabled)
```

Look in the log file for the following message:

```
Could not find symbol in the <BSFN dll name>
```

Deadlock Collision Problems

When a business function performs a manual commit inside a CallObject process, no other business function can access the tables that the original manual commit locks. Deadlock collisions occur when other business functions attempt to access a table or other resource locked by the original manual commit.

To handle the deadlock collision, the CallObject process puts the processing request in a queue. The number of deadlock collisions grows during the life of a CallObject kernel process and provides evidence of how many times a request has been placed in a queue because the needed resources were locked.

The longer the time a CallObject process requires to run a request, the greater the number of deadlock collisions that are likely to occur. If the number of deadlock collisions grows quickly, the likelihood is that too many users are attempting to connect to the same CallObject process. This, in turn, might be an indication that you do not have enough CallObject processes running on the enterprise server.

You can monitor the number of deadlock collisions for each process running on the enterprise server using the Server Administration Workbench (SAW). If you observe the value for the Lock Conditions parameter in the SAW form increasing rapidly, you can increase the number of CallObject kernel processes on the server and monitor the effect of that action.

For details on using SAW to monitor processes running on the enterprise server, see *Monitoring Process Statistics for Enterprise Servers* in the chapter *Monitoring ERP 8.0 with SAW on Windows NT* in this guide.

Server Map Problems

If you change the Object Configuration Manager or the Data Source Master files in the Server Map data source, you can test the changes using the J.D. Edwards program PORTTEST. This test is designed to validate your environments.

See the section specific to your platform type for more information about PORTTEST.

- *Server Administration - AS/400*

- *Server Administration - UNIX*

- *Server Administration - Windows NT*

Troubleshooting the Enterprise Server - AS/400

This chapter explains how to troubleshoot problems that can occur on an AS/400 enterprise server. When troubleshooting, follow these guidelines:

- Try to narrow down the definition of any problem that you may have, particularly when communicating the issue to someone else (such as J.D. Edwards Worldwide Customer Support Services). For example, rather than saying, "The batch application failed," tell how the batch application failed. More specific information, such as "The batch status is `E'" or "The report had the wrong data" will help resolve the problem faster.

- When communicating an error message to someone, be sure to include all parts of the error message exactly as they appear in the log file or on the screen. Parts of the message that may not seem important may actually hold the key as to why an error occurs. Also, distinguish between characters that might be misinterpreted, for example, the capital letter "O" and the number zero "0".

- As soon as you notice an error, examine the log files. Messages near the end of the log files will probably reveal the most important information about the cause of the error.

- Before you restart ERP 8.0 on the server, either delete or move the JOB_*xxxxxx* (where *xxxxxx* is a number) members from the JDE.LOG and JDEDEBUG files.

- For a better understanding of the flow of the AS/400 ERP 8.0 server processes, see the chapter *ERP 8.0 AS/400 Architecture and Process Flow* in this guide.

- When you're first trying to get ERP 8.0 running, verify you have logging turned on (see *Setting Up the ERP 8.0 AS/400 INI File* in this chapter). Examine the JDE.LOG and JDEDEBUG files carefully.

- Carefully examine the AS/400 JOBLOGs and JDE JDE.LOG files of the ERP 8.0 jobs to help ensure that authorities and OCM have been set correctly. Look for messages like the following in the JDE.LOG files:

```
JDB3100011 - Failed to get location of table F983051 for environment PD7334
```

Look for messages similar to the following in the AS/400 JOBLOGs:

```
File F98306 not found in library PRODDTA.
```

You may want to temporarily modify the job description of the ERP 8.0 user profile to always write the AS/400 joblog until you are comfortable that everything is set up correctly.

Important:

To complete the resolutions provided for these issues, you must sign on to the AS/400 enterprise server using an account that has administrative privileges.

Troubleshooting AS/400 Enterprise Server Installation

This section explains topics that might create issues during the installation of an AS/400 enterprise server.

Library Installation Verification

Issue	Resolution
You want to verify that the correct libraries and data dictionary items are installed on the AS/400.	See the list of libraries and data dictionary items and descriptions of their contents in *Understanding the AS/400 Library Structure for ERP 8.0* in this guide.

Database Table Configuration

Issue	Resolution
Strange database results or errors imply that Object Configuration Manger (OCM) is not set up correctly. For example, you see the following message in the JDE.LOG file: JDB3300011 - Failed to get location of table F983051 for environment PD7334	• Verify that environments set up in the OCM are correct. • Review the description of how OCM is used by ERP 8.0 in *ERP 8.0 Initialization*. • Run the VerifyOCM program to help ensure that the OCM tables are set up correctly. You must have one valid environment available to run VerifyOCM.

Setting up the ERP 8.0 AS/400 .INI File

Issue	Resolution
You cannot find the .INI file.	• It can be found in the B733SYS library. JDE is a required member of the .INI file. • You may not have access rights to the B733SYS library. Log on to the AS/400 under a user who has administrative rights and ensure that all user profiles accessing the .INI file have authority to it.
You need more information on using the ERP 8.0 AS/400 .INI file.	Review the notes and descriptions of .INI settings in Troubleshooting ERP 8.0 JDE.INI Files in this section and in the chapter The jde.ini File in the System Administration Guide.

Finding the Log Files

Issue	Resolution

You cannot find the log files.

- In B73.3 and subsequent releases, the logging is performed to the AS/400 Integrated File System (IFS). The naming convention is similar to that of the UNIX enterprise servers. That is, the default names of the files are JDE_AS400JobNumber.log, JDEDEBUG_AS400JobNumber.log, and JDETS.LOG, where AS400JobNumber is the AS/400 Job Number of the job that generated the file. These files are created automatically, but the path to the files needs to exist prior to beginning logging. The path to the log files stored in the IFS may be created by performing successive calls to the AS/400 command MKDIR. For example, to create the path /JDEB733/LogFiles, enter the following command:

MKDIR DIR('/JDEB733') DTAAUT(*RWX) OBJAUT(*ALL)

and then:

MKDIR DIR('/JDEB733/LogFiles') DTAAUT(*RWX) OBJAUT(*ALL)

- Logging may be turned off in the .INI. Turn on logging in the .INI using the following settings in the [DEBUG] section:

[DEBUG]

LogErrors=1

Output=FILE

Variable names and descriptions:

LogErrors - Valid values are:

- 0 = Do not generate logs.
- 1 = Create logs.

Output - Valid values are:

- NONE = Do not write debug messages to any output device.
- FILE = Write messages to log files.

Not enough relevant information is written to the log files.

Additional logging information may need to be turned on in the .INI. Set the following keys in the .INI for additional information to be output to the log files:

[JDENET]

netTrace=1

[JDEIPC]

ipcTrace=1

[DEBUG]

TAMTraceLevel=1

[UBE]

UBEDebugLevel=6

[TCEngine]

TraceLevel=10

Variable names and descriptions:

netTrace - Valid values are:

- 0 = Do not generate JDENet error messages (that is, communication between platforms).

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- 1 = Generate JDENet error messages.

ipcTrace - Valid values are:

- 0 = Do not generate Interprocess Communication (IPC) error messages (that is, communication between processes on a single platform).
- 1 = Generate IPC error messages.

TAMTraceLevel - Valid values are:

- 0 = Do not generate Table Access Management (TAM) error messages (that is, regarding specification files).
- 1 = Generate TAM error messages.

UBEDebugLevel - Valid values are:

- 0 = Do not generate batch application error messages.
- 1-6 = Generate increasingly detailed error messages (1 gives the least specific messages, whereas 6 gives the most detailed messages).

TraceLevel - Valid values are:

- 0 = Do not generate Table Conversion (TC) error messages.
- 1-10 = Generate increasingly detailed error messages (1 gives the least specific messages, whereas 10 gives the most detailed messages).

Note:

NetTrace and ipcTrace messages are written to the debug log associated with that job. This is why the [DEBUG] section of the jde.ini file requires the Output=FILE setting.

Testing with PORTTEST

In general, turn on logging when running PORTTEST. Review the JDE.LOG and JDEDEBUG members generated by running PORTTEST. Also review the AS/400 job log generated by running PORTTEST. These logs provide valuable information about your ERP 8.0 AS/400 configuration and setup.

Issue	Reso
An error with the security server occurred.	The ERP 8.0 network may not be running. Clear the Interprocess Communication (IPC) structures using the ERP 8.0 AS/400 CLRIPC command and restart ERP 8.0. If you have different versions of ERP 8.0 running, make sure that they are on different ports and have different values for startIPCKeyValue. In the [JDEIPC] section of the JDE.INI file. Also, note that the different versions of ERP 8.0 should have different ERP 8.0 libraries and database files. Successful running of CLRIPC should result in the appearance of no messages on the screen. If messages appear as a result of CLRIPC, there may be one or more jobs (including an interactive job that ran PORTTEST) that locked some of the IPC shared memory. Determine which job has locked shared memory and end it. Try signing off of a session in which you ran PORTTEST and running CLRIPC. If all attempts fail, you may change the .INI setting [JDEIPC] startIPCKeyValue to at least 1000 different than the current setting. Sign off and back on again to ensure the new value is read. Attempt CLRIPC again, and restart ERP 8.0 if CLRIPC is successful.

An error with the security server occurred.	The ERP 8.0 network may be running as a service under one library list and you are trying to run PORTTEST under another library list. Display all the libraries in the current library list and correct the list if the displayed library list is wrong. Then run PORTTEST.
	If the library list is correct, the problem could be because the activation group under which your job is running on the AS/400 may retain some of the information from previous attempts. Sign off, sign on, and run PORTTEST again.
An error with the security server occurred.	**The supplied user name or password may not match any names or passwords in the ERP 8.0 security table. Try one of the following:**
	• Run PORTTEST with a valid user name and password.
	• Add the given user name and password to the ERP 8.0 security table.
You get the following message on the screen:	This could be because you did not include the correct number of arguments to PORTTEST. Use the following arguments:
Invalid parms PORTTEST <USER> <PWD> <ENV>	User - A valid ERP 8.0 user ID.
	Password - Password for the ERP 8.0 user ID.
	Environment - A valid ERP 8.0 environment.
Fewer than 99 F0902 records are written to the screen by PORTTEST.	• This could be a PORTTEST failure. Examine the log files.
	• Fewer than 99 records may exist in the F0902 table. This is not an error, but you should review the log files for any errors.
	• The F0902 database table may not be accessible. Verify that you can query the F0902 table using SQL. Use the STRSQL command on the AS/400.
An error initializing the environment occurs in the log file.	The environment may not be set up correctly. See the chapter Understanding ERP 8.0 Initialization for AS/400 in this guide for information about how ERP 8.0 programs use OCM. Any errors in the affected .INI keys or database tables could cause the ERP 8.0 initialization to fail. The environment that PORTTEST uses is passed as a command line argument.

Running ERP 8.0 JDENET

Issue	Resolution
NETWORK dies immediately.	• IPCs may not have been cleared prior to starting ERP 8.0 (that is, starting JDENET using the ERP 8.0 AS/400 command STRNET). End ERP 8.0. Clear IPCs (using the CLRIPC command) and restart ERP 8.0.
	• The startIPCKeyValue in the .INI file could be used by another version of ERP 8.0. Try one of the following:

- Change the startIPCKeyValue and restart ERP 8.0. This problem is not easily evident by examining the log files or reviewing error messages. Symptoms of the problem include:

  - You attempt to run more than one version of ERP 8.0 on the AS/400.

  - One environment can be successfully started by itself. A second environment cannot be successfully started (that is, the JDENET_N job ends almost immediately after starting) for the second version.

- Look in the JOB_xxxxx in both DebugFile and JobFile for specific error messages.

- Determine if PORTTEST runs correctly. If not, correct those problems, and then try restarting ERP 8.0 using STRNET.

- The configuration for the local host name, local domain name, and IP address may be incorrect. In the command line, enter CFGTCP to access the Configure TCP/IP form. Choose option 12 (Change local domain and host names) and verify the settings for the local domain name and the local host name 9for example, YOURCOMPANY.COM and SRVR1 respectively). Then choose option 10 (Work with TCP/IP host table entries) and verify that two names exist in connection with the IP address for the AS/400. One name is a combination of the local host name and the local domain name (for example, SRVR1.YOURCOMPANY.COM). The other name is just the local host name (for example, SRVR1).

An error initializing the environment occurs in the log file.	• Examine the issues in this section about PORTTEST. • Determine if PORTTEST runs correctly. If not, correct those problems, and then try restarting ERP 8.0 using STRNET.

Testing ERP 8.0 by Submitting a Report

Issue	Resolution
You get the following message:	• You may see a message referencing an error of 11, indicating a time out occurred because the ERP 8.0 server was started after the ERP 8.0 client was run. Try resubmitting the report.
Communication Failure with <server name>	• A time out may have occurred because of heavy network traffic or server load. Increase the time out value for the JDENETTimeout setting in the [NETWORK QUEUE SETTINGS] section of the jde.ini file on the workstation. • The wrong communications port may have been used. Verify that the serviceNameListen value in the [JDENET] section of the jde.ini file on the workstation matches the serviceNameConnect value in the [JDENET] section of the jde.ini on the server. In addition, the serviceNameConnect value in the client's jde.ini must match the serviceNameListen in the jde.ini on the server. • There may be other communications problems. Run SERVERADMINISTRATIONWORKBENCH.exe (found in the system\bin32 directory on the workstation). This program shows only the machines on the specified port (also known as "service") that are running ERP 8.0 (either client or server). Use the following information to track down the problem: - If the remote machine is visible, a time-out probably occurred. Rerun the report. - If the remote machine is not visible, try to ping the remote machine using the name of the machine. - If the ping fails, try to ping the remote machine using its IP address. - With this information, determine if the client and server agree on the IP address for the server. - If none of these steps identify the problem, a general network error probably occurred (for example, the network is down or a machine is disconnected). Track it down.
The report does not show any data.	No data may exist in the database for the report that you are running, or you do not have access to the data. Try the following: • Select a different report to verify that some reports do produce data. • Verify the database contains data that should be included in the report. Add data if necessary. • Change the processing options for the report. • Change the OCM and/or data sources to reference the correct library. • If the report is launched on the server, make sure that the vertical tables in the server OCM match those of the OCM for the workstation. • If no data is found, it could be because:

- No data exists.

- The processing options are incorrect.

- The OCM for either the client or server is pointing to the wrong data source.

- The data sources for either the client or server are pointing to the wrong database.

- The SQL statement is incorrect (possibly due to a program bug).

- The database drivers are out of date.

The report does not show any data.	An error may have occurred with the report. Review the jdedebug.log and jde.log files for errors.
An error initializing the environment occurs in the log file.	The environment may not be set up correctly. Try the following: • See the chapter ERP 8.0 Initialization for AS/400 in this guide for information about how ERP 8.0 uses OCM. Errors in .INI keys or database tables can cause an initialization failure. • Stop ERP 8.0 and determine if PORTTEST runs correctly. If not, correct the problems, and then rerun ERP 8.0 manually.
You get the following message: **Communication Failure with <server name>** • This error occurs sometimes on the workstation. • Restarting JDENET_N sometimes gets rid of the error. • SAW (running on the workstation) cannot always see the server. • You can ping the server from the workstation.	The server may have two network cards, which can confuse JDENET when the net communications are initialized between the client and server. One machine tries to connect using one network card, and the other machine connects using the other network card. The hosts file on the server should list two different IP addresses for the server: one for each network card. The solution for the error involves setting the NetHostName field in the [JDENET] section of the JDE.INI to one of the names for the server given in the hosts file. JDENET then uses the IP address associated with the given network card.

Shutting Down ERP 8.0 JDENET

Running the ERP 8.0 AS/400 command CLRIPC immediately after shutdown (that is, after running the ERP 8.0 AS/400 command ENDNET) every time you shutdown will help you avoid most restart problems.

Troubleshooting E-Mail and PPAT

Issue	Resolution
The batch application, server package installation, or table conversion log file (in the PrintQueue directory) shows the message:	The particular user may not be found in the Address Book table (F0101). Add the user to the Address Book table (F0101).
DoSendMessage Error: User 5600427 does not exist in the address book file (F0101).	

Troubleshooting Multiple Release Setup

This section explains how to troubleshoot problems that can occur with multiple releases on the AS/400.

Issue	Resolution
When you try to run multiple releases of ERP 8.0 at the same time, conflicts seem to occur between each release.	Each installed release of ERP 8.0 may not have its own unique set of keys in the .INI. Change the following keys in one or both .INI files:
	[JDEIPC]
	startIPCKeyValue
	[JDENET]
	serviceNameListen
	serviceNameConnect
	Variable names and descriptions:
	startIPCKeyValue
	An integer value that indicates an arbitrary starting memory offset for interprocess communications. For multiple instances of ERP 8.0 server, be sure that the differences between these values are 1000 or more. The default value is 5000.
	Note:
	IBM Opti-Connect and Opti-Mover products use the IPC shared memory address 9999. Avoid setting the jde.ini file setting IPCStartKey to a starting value using the range of 9000 to 9999.
	serviceNameListen
	Port through which JDENet listens for communications attempts. The default is jde_server (translated using the "services" file). Each instance of the ERP 8.0 server needs to communicate with ERP 8.0 clients through different ports.

serviceNameConnect

Port through which JDENet tries to initialize connections with other platforms. The default is jde_server (which is translated using the "services" file). Each instance of ERP 8.0 server needs to communicate with ERP 8.0 clients through different ports.

Also, verify that each version of ERP 8.0 has a unique set of libraries and database files.

Troubleshooting JDBNET

This section explains how to troubleshoot problems that can occur with JDBNET.

Issue	Resolution
You do not know how JDBNET is used.	JDBNET processes database requests using a client and server. It can also be configured to process server-to-server requests. This is, one server functions as a JDBNET client and the other as a JDBNET server.

JDBNET eliminates the need for database-specific network software. All database requests are transported to the JDBNET server, processed in a local database, and the results are transported back to the JDBNET client. |
| **You get an error that the data source on the JDBNET server is not found.** | The correct data source on the JDBNET server may not exist. Create a data source on the server that will be used by JDBNET. This is a normal configuration for a server data source that can be accessed by JDENet running on that server. Note the data source name (OMDATP) that will be used for the JDBNET client configuration. |
| **You get an error that the data source on the JDBNET client is not found.** | The correct data source on the JDBNET client may not exist. Create a JDBNET data source in the F98611 table using the following information:

• Data source name (OMDATP field) - Used to access tables as specified in the F986101 table.

• Server name (OMSRVR field) - Identifies the JDBNET server.

• Database name (OMDATB field) - Matches exactly the data source name (that is, the OMDATP field) to be used by the JDBNET server.

• Dynamic-link library name (OMDLLNAME field) - Identifies the JDBNET SRVPGM (sometimes referred to as a .DLL). JDBNET on the ERP 8.0 AS/400.

• All other columns must match the values in the corresponding columns of the server data source. Set this data source as an active override in the F986101 table for all tables that will be accessed through JDBNET. |
| **JDBNET does not transfer any data.** | The network may not be running. End ERP 8.0, clear IPC (via the ERP 8.0 AS/400 CLRIPC command), and restart ERP 8.0. |
| **JDBNET does not transfer any data.** | The JDBNET server and client may not be using the same server port number. Modify the serviceNameListen and serviceNameConnect fields in the [JDENET] section of both the JDBNET jde.ini files on the server and on the workstation. These values must match on both the JDBNET server and JDBNET client. |

Troubleshooting Interprocess Communications

This section explains how to troubleshoot problems that can occur with Interprocess Communication (IPC).

Issue

ERP 8.0 jobs cannot communicate with one another with the following symptoms:

- PORTTEST fails.
- The security server on the AS/400 fails.
- UBE submission fails.
- If you activated ipcTrace in the [JDEIPC] section of the server jde.ini file, an error similar to the following should appear in the JDEDEBUG.log:

IPC2100017 createIPC Msgq (name Port6005) failed, errno=3484: A damaged object was encountered.

Resolution

This could be because the AS/400 release is pre-V4R2. In these releases, damaged IPC message queues might result when you end ERP 8.0 jobs using the command ENDJOB* IMMED.

- Use the *CNTRLD option to end an AS/400 job.

Caution:

You may still have damaged IPC message queues if the AS/400-controlled ending times out.

- Run the following program to verify whether a damaged message queue exists. You must have V4R1 PTF# SF45946.

CALL QPOZIPCS PARM('-aqE')

This program generates a spool file called IPCS that contains information about message queues on the system. Look for the following output:

KEY   MODE

0x00000000 --------

0x00000000 --RW-------

0x00000000 --RW-------

0x00000000 --RW--------

0x00001234 D-RW----RW-

In this example, the message queue 0x00001234 is damaged. To fix, stop and restart JDENET using the following commands:

ENDNET

CLRIPC

STRNET

Also, if the ipcTrace setting in the [JDEIPC] section of the jde.ini file on the server is not set, activate the setting and run PORTTEST to determine whether any message queues are damaged. Look for the word "damage" in the JDEDEBUG.log file.

Caution: Some of your message queues might be damaged even if the JDEDEBUG.log file does not indicate that any damage exists.

Troubleshooting the ERP 8.0 JDE.INI File

This chapter explains how to troubleshoot problems that can occur with the ERP 8.0 JDE.INI file. For more information about the JDE.INI file and its settings, see the chapter *The jde.ini File* in the *System Administration Guide*.

The following notes apply to the .INI file in the B733SYS library:

- It is composed of several sections. The section names are enclosed in square brackets - for example, [JDENET].

- Within each section are one or more keys or settings. The key name is on the left side of the equals sign, and the value of the key is on the right side.

- Do not include spaces in the names or values of the keys unless you know that a space is required. Do not include spaces immediately before or after the equals sign.

- Keys may be commented out by adding a semicolon (;) at the start of the key name.

- J.D. Edwards recommends that you place any incidental comments on a separate line above the key to which the comment applies. Be sure to include a preceding semicolon. Comments can be included at the end of the keys' values, but these comments can be wrongly interpreted if they are not separated from the keys' values by enough white space. Because the amount of white space needed between the keys' values and the comments is not strictly defined, J.D. Edwards recommends that you do not place comments after the values of the keys.

- The section and key names are not case sensitive.

- Many key values are case sensitive.

- Although all of the following may mean to turn a feature on, they may not be interchangeable as values in the .INI. Use a value that is comparable to the default value provided in the original .INI. Also, many values are case sensitive. If you have any questions about valid values, contact J.D. Edwards Worldwide Customer Support Services.

  - YES

  - ON

  - TRUE

  - 1

- Likewise, the following values mean to turn a feature off. They are not necessarily interchangeable as values in the .INI.

  - NO

  - OFF

  - FALSE

  - NONE

  - 0

If you are told by J.D. Edwards Worldwide Customer Support Services to modify a key that does not exist, you can add the key. Just be sure that it is in the correct section.

Troubleshooting the Enterprise Server - UNIX

This section describes some typical problems that you might encounter and their solutions. When troubleshooting, follow these guidelines:

- Check your logs. Many times, the logs point to the problem. As soon as you notice an error, examine the log files. Messages near the end of the log files will probably reveal the most important information about the cause of the error.

- Try to narrow down the definition of any problem that you may have, particularly when communicating the issue to someone else (such as J.D. Edwards Worldwide Customer Support Services). For example, rather than saying, "The batch application failed," tell how the batch application failed. More specific information, such as "The batch status is `E'" or "The report had the wrong data," helps resolve the problem faster.

- When communicating an error message to someone, be sure to include all parts of the error message exactly as they appear in the log file or on the screen. Parts of the message that may not seem important may actually hold the key as to why an error occurred. Also, distinguish between characters that might be misinterpreted (for example, the capital letter "O" and the number zero "0").

- Before you restart ERP 8.0 on the server, either delete or move the jde_*xxx*.log and jdedebug_*xxx*.log files (where *xxx* is a number). Do not rename the log files because it is easier to work with logs that use the standard naming convention ("jde_*xxx*.log" and "jdedebug_*xxx*.log"). If you need to save the log files until the problem is solved, then create a temporary directory and move the files there.

- Clear the log directory regularly to avoid filling the file system. If the file system fills up, then the specification files can become corrupted.

- Always keep a backup of the specification files handy in case they become corrupted. Specification files should be backed up regularly for easy recovery of specification installs. If spec files have to be replaced, all specification installations will be lost if backups are not kept.

- To find problems that occur due to server failure, go to the system/bin32 directory:

  - grep -n "failed" *log* > problems.txt

    The file "problems.txt" will contain a list of errors with the file and line number.

- Remember that UNIX is case-sensitive. "jde.ini" is NOT the same file as "JDE.INI".

Caution:

To complete the resolutions provided for these issues, you must sign on to the UNIX enterprise server using an account that has administrative privileges.

Troubleshooting UNIX Enterprise Server Installation

This section provides details of the following topics that might create issues during the installation of a UNIX enterprise server.

Copying ERP 8.0 to a Server

Issue	Resolution
You cannot copy files from the deployment server to the temporary directory on the enterprise server.	This could be because ftp cannot connect. See your system administrator.
You want to verify that the correct subdirectories are installed on the enterprise server.	See the list of directories and descriptions of their contents in the chapter ERP 8.0 Directory Structure for UNIX in this guide.
You want to verify that the correct third-party software is installed on the enterprise server.	See the list of required software in the ERP 8.0 Installation Guide.

Configuring Database Tables

Issue	Resolution
Strange results or errors occur that imply that OCM is not set up correctly.	• Review the description of how OCM is used by ERP 8.0 in the chapter Understanding ERP 8.0 Initialization for UNIX in this guide. • Run the VerifyOCM program to verify that the OCM tables are set up correctly. One valid environment must be available to run VerifyOCM.

Setting Up a Printer

For general printing issues, see the ERP 8.0 documentation *Printing ERP 8.0 Reports* in the *System Administration Guide,* which describes how to use ERP 8.0's printer setup tools.

Issue	Resolution
Reports do not print from a server.	Verify the name of the default printer. Send a simple text file to the default printer using the lp command. If you get an error similar to the following: lp: destination aPrinter non-existent then the printer is not configured on the server or is not online. Contact your system administrator for assistance.

Finding the Log Files

Issue	Resolution
	• The log files' location is in the DebugFile and JobFile keys in the [DEBUG] section of the JDE.INI. If no paths are shown, the logs are in the system/bin32 directory. The log files are named according to the following: - The log file associated with the DebugFile key contains the sequence of ERP 8.0 events. - The default value for this key is jdedebug.log. - An underscore (_) and the process ID that creates the log file are inserted before the period (for example, jdedebug_123.log or jde_123.log for a process with an ID of 123). - The log file associated with the JobFile key will contain messages of ERP 8.0 errors. - The default value for this key is jde.log.
You cannot find the log files.	• When a batch application runs and the JDE.INI on the server has [DEBUG] KeepLogs=1, the jde_*xxx*.log and jdedebug_*xxx*.log files for the runbatch that processed the batch application is merged into a file in the PrintQueue directory. The file's root name is the same as the .pdf file's name and the extension is .log. If the batch application dies before merging the jde_*xxx*.log and jdedebug_*xxx*.log files, the merge fails. • Turn on logging in the JDE.INI using the following settings in the [DEBUG] section: [DEBUG] LogErrors=1 Output=FILE Variables and their descriptions: LogErrors 0 = Do not generate logs.

1 = Create logs.

Output

NONE = Do not write messages to any output device.

FILE = Write messages to log files.

Additional logging may need to be turned on in the JDE.INI. Set the following keys for additional output to the log files. [DEBUG] logging must be set as described above for these settings to work.

[JDENET]

netTrace=1

[JDEIPC]

ipcTrace=1

[DEBUG]

TAMTraceLevel=1

[UBE]

UBEDebugLevel=6

[TCEngine]

TraceLevel=10

Variables and their descriptions:

netTrace

Not enough relevant information is written to the log files.

0 = Do not generate JDENet error messages (that is, communication between platforms).

1 = Generate JDENet error message.

ipcTrace

0 = Do not generate Interprocess Communication (IPC) error messages (that is, communication between processes on a single platform).

1 = Generate IPC error messages.

TAMTraceLevel

0 = Do not generate Table Access Management (TAM) error messages (that is, regarding specification files).

1 = Generate TAM error messages.

UBEDebugLevel

0 = Do not generate batch application error messages.

1 = Generate increasingly detailed error messages (1 gives the least specific messages, 6 gives the most detailed messages).

TraceLevel

0 = Do not generate Table Conversion (TC) error messages.

1-10 = Generate increasingly detailed error messages (1 gives the least detail,, whereas 10 gives the most detail).

Testing with PORTTEST

Issue	Resolution
An error with the security server occurred.	The ERP 8.0 network may not be running. If jdenet_n is running, a jdenet_k should have been started. If this is the case, look in the log file for the jdenet_k process for the security server for more information. If this is not the case, verify that the [SECURITY] section of the JDE.INI file is correct.
An error with the security server occurred.	The supplied user name or password do not match any names or passwords in the ERP 8.0 security table. Try the following: • Run PORTTEST with a valid user name and password. • Add the given user name and password to the ERP 8.0 security table.
You get the following message on the screen: Invalid parms PORTTEST: <USER> <PWD> <ENV>	You may not have included the correct number of arguments to PORTTEST. Use the following arguments: User - A valid ERP 8.0 account name. Password - Password for the ERP 8.0 account. Environment - A valid ERP 8.0 environment.
Fewer than 99 records are written to the screen by PORTTEST.	• Examine the log files in case PORTTEST failed. • If fewer than 99 records exist in the F0902 table, this is not an error. Review the log files for any errors. • In case the F0902 database table is not accessible, verify that you can query the F0902 table using SQL.
An error initializing the environment occurs in the log file.	The environment may not be set up correctly. See the chapter Understanding ERP 8.0 Initialization for UNIX in this guide for more information about how ERP 8.0 programs use OCM. Any errors in the affected JDE.INI keys or database tables could cause the ERP 8.0 initialization to fail. The environment that PORTTEST uses is passed as a command line argument.

Troubleshooting E-Mail

Issue	Resolution
The report, server package installation, or table conversion log file (in the PrintQueue directory) shows the message "DoSendMessage Error: User 5600427 does not exist in the address book file (F0101)."	The particular user may not be found in the Address Book table (F0101). Add the user to the Address Book table (F0101).

Troubleshooting Multiple Release Setup

This section explains problems that can occur with multiple releases set up on UNIX machines.

Releases must be run under separate UNIX signons. In the .profile that corresponds to each signon, the $OWHOME environment variable must point to the appropriate ERP 8.0 base path. The $OWHOME might also appear as $EVRHOME.

Issue	Resolution
The log files do not go to separate directories.	Each installed release of ERP 8.0 has its own JDE.INI in its system/bin32 directory. Entries in the JDE.INI files point to the same subdirectory for the location of the log files. Change the DebugFile and JobFile keys in the [DEBUG] section of one or both JDE.INI files to point to unique directories for each installed instance of ERP 8.0.
When you try to run multiple releases of ERP 8.0 at the same time, conflicts seem to occur between releases.	Each installed release of ERP 8.0 may not have its own unique set of keys in the JDE.INI. Change the following keys to one or both JDE.INI files: • [INSTALL] B733 The value of this key should be the base directory of the ERP 8.0 installation - for example, /u01/jdedwardsoneworld/b733. • [JDEIPC] startIPCKeyValue An integer value that indicates an arbitrary starting memory offset for interprocess communications. For multiple instances of ERP 8.0 server, be sure that the differences between these values are 1000 or more. The default value is 5000. • [JDENET] serviceNameListen Port through which JDENet listens for communications attempts. The default is jde_server (which is translated using the services file). Each instance of ERP 8.0 server needs to communicate with ERP 8.0 clients through different ports. • [JDENET] serviceNameConnect Port through which JDENet tries to initialize connections with other platforms. The default is jde_server (which is translated using the services file). Each instance of ERP 8.0 server needs to communicate with ERP 8.0 clients through different ports.

Troubleshooting ERP 8.0 Server Processes

This section explains how to troubleshoot problems that can occur with ERP 8.0 server processes.

To view ERP 8.0 jobs, run the jdejobs script. This will show ERP 8.0 processes that are currently running for this UNIX sign-on.

jdequeue dies immediately following RunOneWorld.sh.	IPC resources from a previous ERP 8.0 process may not have been released. Try the following: • Run system/bin32/rmics.sh immediately after shutdown (that is, after running EndOneWorld.sh) every time, and you will avoid most restart problems. • Determine if PORTTEST runs correctly. If not, correct those problems, and then try running ERP 8.0.

rmics.sh fails to remove some shared memory segments, semaphores, or message queues. A message or messages will be output to the screen similar to the following when rmics.sh is run:

ipcrm: shmid (13328): not found

ERP 8.0 jdenet_n, jdenet_k, jdequeue, or runbatch processes may still be running. Obtain the process IDs of the offending processes using ps or showjobs.sh as described above. Shut the processes down using "kill -9 <processid>". Then rerun rmics.sh.

An error initializing the environment occurs in the log file. Review Testing with PORTTEST above.

Determine if PORTTEST runs correctly. If not, correct those problems, and then try running ERP 8.0.

Workstations can no longer sign on to ERP 8.0. The user gets a message stating "Unable to locate security server." The following situations also occur:

- A check of the server shows all jdenet_n, jdenet_k, and jdequeue processes are working fine.

- Users already connected to ERP 8.0 may be able to submit reports, although specification installation might not work.

- PORTTEST works.

- Even if netTrace=1 on the server, no new entries are written to the jdedebug_<pid> .log file.

- With netTrace=1 on the client, lines similar to the following may be in the jdedebug.log file (see below):

- Increase the # of allowable open files per process. On HP9000 this is the kernel configuration parameter maxfiles. This will require recompiling the kernel.

- Increase the number of jdenet_n processes on the server.

- In the log file shown below, the key to the problem is the second to last line with error-10053 on the FD_CLOSE. This means the server aborted the connection.

The other possible symptom is that jdenet_n and all jdenet_k processes are all gone. If ipcTrace is on the server, it should show that a SIGTERM (15) signal was received by each of the jdenet_k processes. The log for jdenet_n probably will not show much because it could not open the log file. What has happened is that jdenet_n failed to open a file and ended ungracefully (perhaps due to a SIGSEGV, a segmentation violation). As jdenet_n ended, the process shut down the jdenet_k processes.

Also, the jdenet_n process on the server exceeded the maximum number of open files for a process. Each socket connection - and therefore every workstation - creates one open file descriptor on the server.

```
Feb 02 10:30:22 ** 73/133   JDENET returning port 6003 for
     service `6003'
Feb 02 10:30:22 ** 73/133   JDENET Socket
     324,sendto-16,rc-(16),err-0
Feb 02 10:30:22 ** 73/139   JDENET Socket
     324,event-FD_READ,error-0
Feb 02 10:30:22 ** 73/139   JDENET Socket
     324,recvfrom-8196,rc-(26),err-0
Feb 02 10:30:22 ** 73/139   JDENET rcvfrom data- CONNECT_TO
     1299 2886992388
Feb 02 10:30:22 ** 73/139   JDENET
     73(pid),createSocket-connection
     used: 3
Feb 02 10:30:22 ** 73/139   JDENET Socket
     396,event-FD_CONNECT,error-0
Feb 02 10:30:22 ** 73/133   JDENET putQueue 0184073E,msg-1
Feb 02 10:30:22 ** 73/139   JDENET Socket
     396,event-FD_CLOSE,error-10053
Feb 02 10:30:22 ** 73/139   JDENET
     73(pid),freeSocket-connection
     used: 2
```

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Finding the Report Files

Issue	Resolution
You cannot find the report output files.	• The location is specified as the OutputDirectory key of the [NETWORK QUEUE SETTINGS] section in the JDE.INI on the server. If this key is not found, the location is the PrintQueue subdirectory of the ERP 8.0 base directory (for example, /u01/jdedwardsoneworld/b733 /PrintQueue).
	• The JDE.INI file on the workstation may have the SaveOutput key of the [NETWORK QUEUE SETTINGS] section set to FALSE. This is because a problem after the report has been printed. After the report is printed, then the record will be deleted, as will the .PDF file. Change the value of the SaveOutput key of the [NETWORK QUEUE SETTINGS] section in the JDE.INI on the workstation to TRUE.

Troubleshooting JDBNET

This section explains how to troubleshoot problems that can occur with JDBNET.

Issue	Resolution
You do not know how JDBNET is used.	JDBNET is a server-to-server protocol for accessing databases from a server that cannot access the database directly. For example, if a UNIX server needs to access data on a SQL Server database, it can use JDBNET running on a Windows NT server to access the data.
	JDBNET eliminates the need for database-specific network software. All database requests are transported to the JDBNET server, processed in a local database, and the results are transported back to the JDBNET client.
You get an error that the data source on the JDBNET server is not found.	The correct data source on the JDBNET server may not exist. Create a data source on the server that will be used by JDBNET. This is a normal configuration for a server data source that can be accessed by JDENet running on that server. Note the data source name (OMDATP) that will be used for the JDBNET client configuration.
You get an error that the data source on the JDBNET client is not found.	The correct data source on the JDBNET client may not exist. Create a JDBNET data source in the F98611 table using the following information:
	• Data source name (OMDATP field) - Used to access tables as specified in the F986101 table.
	• Server name (OMSRVR field) - Identifies the JDBNET server.
	• Database name (OMDATB field) - Matches exactly the data source name (that is, the OMDATP field) to be used by the JDBNET server.
	• Shared library name (OMDLLNAME field) - Identifies the JDBNET client .DLL. (libjdbnet.sl on HP-UX, libjdbnet.so on AIX)
	• All other columns must match the values in the corresponding columns of the server data source.
	• Set this data source as an active override in the F986101 table for all tables that will be accessed through JDBNET.
JDBNET does not transfer any data.	• If the network is not running, run the ERP 8.0 network on both the JDBNET server and client.
	• If the JDBNET server and client are not using the same server port number, modify the serviceNameListen and serviceNameConnect fields in the [JDENET] section of JDE.INI files on both the JDBNET server and the JDBNET workstation. These values must match on both the JDBNET server and JDBNET client.

Troubleshooting the ERP 8.0 JDE.INI File

This section explains how to troubleshoot problems that can occur with the ERP 8.0 JDE.INI file. For more information about the JDE.INI file, see the chapter *The jde.ini File* in the *System Administration Guide*.

To locate the JDE.INI file, search in the system/bin32 subdirectory - for example, /u01/jdedwardsoneworld/b733/ini/JDE.INI.

The following notes apply to the JDE.INI:

- It is composed of several sections. The section names are enclosed in square brackets - for example, [JDENET].

- The environment variable $JDE_BASE should contain the location of the .INI file.

- Within each section are one or more keys. The key name is on the left side of the equals sign, and the value of the key is on the right side.

- Do not include spaces in the keys' names or values of the keys unless you know that a space is required. Do not include spaces immediately before or after the equals sign.

- Keys may be commented out by adding a semicolon (;) at the start of the key name.

- J.D. Edwards recommends that you place any incidental comments on a separate line above the key to which the comment applies. Be sure to include a preceding semicolon. Comments can be included at the end of the keys' values, but these comments can be wrongly interpreted if they are not separated from the keys' values by enough white space. Because the amount of white space between the keys' values and the comments is not strictly defined, we recommend that you do not place comments after the keys' values.

- The section and key names are not case sensitive.

- Many key values are case sensitive.

- Although all of the following may mean to turn on a feature, they may not be interchangeable as values in the JDE.INI. Use a value that is comparable to the default value provided in the original JDE.INI. Also, many of these values are case sensitive. If you have any questions about valid values, contact J.D. Edwards Worldwide Customer Support Services.

  - YES
  - ON
  - TRUE
  - 1

    The following values mean to turn a feature off. They are not necessarily interchangeable as values in the JDE.INI.

  - NO
  - OFF
  - FALSE
  - NONE
  - 0

If you are told by J.D. Edwards Worldwide Customer Support Services to modify a key that does not exist, you can add the key. Just be sure that the key is in the correct section.

Troubleshooting ERP 8.0 Testing

Examine the problems under *Troubleshooting ERP 8.0 Testing by Submitting a Report* in this chapter. In addition, the following issue may occur.

Issue	Resolution
The jdequeue processes die shortly after startup.	One potential cause is that if you have Oracle running on the enterprise server and Oracle and ERP 8.0 services are set to start automatically at system startup, ERP 8.0 services may start before Oracle is running completely.
	A second cause is that ERP 8.0 lost the connection to the database because either the network or database went down. You should see some sort of network or database error in the log files.
	Stop the ERP 8.0 services (the Queue service followed by the Network) and restart the ERP 8.0 services (the Network service followed by the Queue).

Troubleshooting ERP 8.0 Testing by Submitting a Report

This section explains how to submit reports to troubleshoot ERP 8.0 testing issues.

To properly run reports or package installations, the following values must match on client and server:

- On the client JDE.INI: the UBEQueue key in the [NETWORK QUEUE SETTINGS] section, for example:

```
 [NETWORK QUEUE SETTINGS]

UBEQueue=QBATCH
```

Note:

This setting is meaningless on the server JDE.INI. The value is set in RunOneWorld.sh, as described below.

On the UNIX sever system/bin32/RunOneWorld.sh script: the fourth argument to the runqueue.sh calls - for example:

```
$SYSTEM/bin32/runque.sh JDESVR JDESVR PRODHPOC2 QBATCH UBE 5 >
runque1.log 2>&1 &
```

This means that the batch name of the UBE and PKG queues must match the batch name to which the client is sending the reports or package installations.

Failure to do this may cause one of the following:

- If the batch exists on another ERP 8.0 enterprise server, the wrong server runs the report.

or

- If the batch does not exist, the report might not run at all. It may stay in a wait state "W" in the F986110 table.

- Report debugging: To get full logging of a report, edit the server .INI to the following settings:

```
 [DEBUG]
Output=FILE
LogErrors=1
KeepLogs=1
 [UBE]
UBEDebugLevel=6
```

When the report is complete, a report debug log file will be put in the PrintQueue directory and is named something like:

```
R55100_ZJDE0001_45678_PDF.log.
This is <UBEReportname>_ <UBEVersion._ <UBEProcessid> _PDF.log
```

If you want to avoid restarting the server do the following steps. Modify your server JDE.INI as detailed above. Then start a new queue with a unique queue name - QDEBUG, for example. The command is:

```
"$SYSTEM/bin32/runque.sh QDEBUG UBE 5 &"
```

If you are not using the Quser, QPassword, and Qenv settings in the JDE.INI on the server, the command would be:

```
$SYSTEM/bin32/runque.sh <USERID> <PASSWD> <ENVIRONMENT> QDEBUG UBE
5&
```

Then modify your client JDE.INI with the following setting:

```
 [NETWORK QUEUE SETTINGS]
UBEQUEUE=QDEBUG
```

Submit the report that you are trying to debug. Once the report is complete, shut down the queue using the following command:

```
"$SYSTEM/bin32/killque.sh QDEBUG UBE"
```

If you are not using the Quser, QPassword, and Qenv settings in the JDE.INI on the server, the command would be:

```
$SYSTEM/bin32/killque.sh <USERID> <PASSWD> <ENVIRONMENT> QDEBUG UBE)
```

Now reset your .INI settings on both the client and the server to what you had before. Use ftp to get the file from the server and continue debugging.

Issue	Resolution
You get the error "Communication Failure with <server_name>" on the client.	- A time-out may have occurred if the ERP 8.0 server was started after the ERP 8.0 client was run. Resubmit the report. - A time-out may have occurred due to heavy network traffic or server load. Increase the time-out value for the JDENETTimeout setting in the [NETWORK QUEUE SETTINGS] section of the JDE.INI on the server, restart ERP 8.0, and resubmit the report. - The wrong communications port may be in use:

- Verify the serviceNameListen value in the [JDENET] section of the JDE.INI file on the workstation matches the serviceNameConnect value in the [JDENET] section of the JDE.INI file on the server. Verify the serviceNameConnect value on the workstation matches the serviceNameListen in the JDE.INI file on the server. If these values are strings, the numeric value is retrieved from the services file in: c:\winnt\system32\drivers\etc on the Windows NT client, c:\windows\system32\drivers\etc on the Windows 95 client, or /etc./services on the UNIX server.

- Verify the services file contains a list of strings and their corresponding port numbers. If the port in which you are interested is on the last line of the services file, be sure to include a carriage return at the end of the line or else the string will not be translated to the corresponding port number.

- The client may be using Dynamic Host Configuration Protocol (DHCP) and the server does not have an entry for itself in its hosts file in the c:\winnt\system32\drivers\etc directory. Add an entry for the server.

- Run Server Administration Workbench (SAW) from the \b7\system\bin32 directory on the workstation. This program shows only the machines on the specified ports that are running ERP 8.0 (either client or server). Troubleshoot using the following information:

- If the remote machine is visible, a time out probably occurred. Rerun the report.

- If the remote machine is not visible, ping the remote machine using the name of the machine.

- If the ping fails, ping the remote machine using its IP address.

- With this information, determine if the client and server agree on the IP address for the server.

- If none of the above works, a general network error probably occurred (for example, the network is down or a machine is disconnected).

The following occur:

- You sometimes get a "Communications failure" error on the workstation.
- Restarting ERP 8.0's network program (jdenet_n) sometimes gets rid of the error.
- SAW (running on the client PC) cannot always see the server.
- You can ping the server from the workstation.

These situations could occur because the server has two network cards. This results in confusion on the part of JDENET when the net communications are initialized between the client and server. One machine tries to connect using one network card, and the other machine connects using the other network card.

The hosts file on the server should list two different IP addresses for the server--one for each network card. To fix, set the NetHostName field in the [JDENET] section of the JDE.INI to one of the names for the server given in the hosts file. JDENET then uses the IP address associated with the given network card.

The report printouts are in portrait mode but should be in landscape mode (or vice versa).

The properties of your default printer may need to be changed. Change the properties of your default printer (using the Printer Application P98616 on menu GH9013) so that the orientation is correct.

The report does not show any data.

This could be because no data exists in the database for the report or you do not have access to the data.

- Select a different report.
- Add data to the database.

- Change the processing options for the report.
- Verify the OCM and/or data sources point to the correct database.
- If the report is launched on the server, verify the vertical tables in the server OCM match those in the workstation OCM.
- An error may have occurred with the report. Look in the jde_xxx.log for error messages.
- If you believe data should have been found, follow these steps:
    1. Edit the report log in the PrintQueue directory.
    2. Search for the SQL select statement that would have retrieved data from the database. You must have some idea what data is being read to do this step.
    3. Copy the SQL statement.
    4. Open the database's respective SQL command interface - for example, SQL Plus and ISQL_w.
    5. Paste the SQL statement into the SQL command interface.
    6. Submit the SQL statement.

If no data is found, one of the following might be true:

- No data exists.
- The processing options are incorrect.
- The OCM for either the client or server is pointing to the wrong data source.
- The data sources for either the client or server are pointing to the wrong database.
- The SQL statement is incorrect (possibly due to a program bug).
- The database drivers are out of date.

An error initializing the environment occurs in the log file.

The environment may not be set up correctly.

- See the chapter Understanding ERP 8.0 Initialization on UNIX in this guide for information about how ERP 8.0 programs use OCM. Any errors in the affected JDE.INI keys or database tables could cause the ERP 8.0 initialization to fail. In the RunOneWorld.sh script, the environment that jdequeue uses is passed as a command line argument to runqueue.sh.
- Stop ERP 8.0 and determine if PORTTEST runs correctly. Correct any problems and try rerunning ERP 8.0.

Troubleshooting Shutting Down ERP 8.0

This section explains how to troubleshoot problems that can occur when shutting down ERP 8.0.

Running rmics.sh directly after shutdown (that is, after running EndOneWorld.sh) every time that you shutdown will help you avoid most restart problems.

To end a hung batch job (runbatch), never use "kill -9 runbatch". Always use "kill -2" to avoid casting resource locks out of sync. The queues will cease working if "kill -9" is used, and ERP 8.0 will need to be restarted.

Issue	Resolution
You need to stop all ERP 8.0 processes.	Use system/bin32/EndOneWorld.sh.
The EndOneWorld.sh script hangs or fails to end all ERP 8.0 processes.	If the script hangs, do a Ctrl-C at the command line where the script was started. Get the process IDs of still-active processes using "ps" or "showjobs.sh" as described above.
Note:	Use "kill -9 <processid>" on the process IDs of all ERP 8.0 jobs: jdenet_n, jdenet_k, and jdequeue (which will show up as runque.sh).
This process takes a few minutes.	Caution: Only use the kill -9 command if you also intend to end ERP 8.0. This command ends processes in such a way that IPC resources are not released gracefully.

Troubleshooting the Enterprise Server - Windows NT

This section describes some typical problems that you might encounter and their solutions. When troubleshooting, follow these guidelines:

- Try to narrow down the definition of any problem that you may have, particularly when communicating the issue to someone else (such as J.D. Edwards Worldwide Customer Support Services). For example, rather than saying, "The batch application failed," tell how the batch application failed. More specific information, such as "The batch status is `E'" or "The report had the wrong data," will help resolve the problem faster.

- When communicating an error message to someone, be sure to include all parts of the error message exactly as they appear in the log file or on the screen. Parts of the message that may not seem important may actually hold the key to why an error occurs. Also, distinguish between characters that might be misinterpreted (for example, the capital letter "O" and the number zero "0").

- As soon as you notice an error, examine the log files. Messages near the end of the log files will probably reveal the most important information about the cause of the error.

- Before you restart ERP 8.0 on the server, either delete or move the jde_*xxx*.log and jdedebug_*xxx*.log files (where *xxx* is a number). Do not rename the log files because it is easier to work with logs that use the standard naming convention ("jde_*xxx*.log" and "jdedebug_*xxx*.log"). If you need to save the log files until the problem is solved, create a temporary directory and move the files there.

- Clear the log directory regularly to avoid filling the file system. If the file system fills up, then the specification files will become corrupt.

- Always keep a backup of the specification files handy in case they become corrupt. Specification files should be backed up regularly for easy recovery of spec installs. If specification files have to be replaced, all specification installations will be lost if backups are not kept.

Important:

To complete the resolutions provided for these issues, you must sign on to the Windows NT enterprise server using an account that has administrative privileges.

Troubleshooting the Windows NT Enterprise Server Installation

This section explains how to troubleshoot the following problems that can occur when installing the Windows NT enterprise server.

Setting up ERP 8.0 Accounts

Issue	Resolution
You cannot set up any accounts in the User Manager program.	The account into which you are logged in Windows NT may not have the privileges to modify or add accounts. Log out of Windows NT and log back on under the Administrator account or an account in the Administrators group.

Copying ERP 8.0 to a Server

Issue	Resolution
You cannot copy files from the CD to the ERP 8.0 directory on the enterprise server.	Verify the CD is in the CD-ROM drive. Another cause is that one or more of the files to be copied are currently open on the CD. - Close any files on the CD that are open. - Close any applications that may have files open on the CD.
One or more of the files that will be overwritten in the target directory is open.	- Close any files in the target directory that are open. - Close any applications that may have files open in the target directory.
The target disk is full.	- Delete or move files from the target disk. - Copy ERP 8.0 to a different disk.
You want to verify that the correct subdirectories are installed on the enterprise server.	See the list of directories and descriptions of their contents in the chapter Understanding the ERP 8.0 Directory Structure for Windows NT in this guide.
You want to verify that the correct third-party software is installed on the enterprise server.	See the list of required software in the ERP 8.0 Installation Guide.

Configuring Database Tables

Issue	Resolution
Strange results or errors occur, implying that OCM is not set up correctly.	• Review the description of how OCM is used by ERP 8.0 in the chapter Understanding the ERP 8.0 Initialization for Windows NT in this guide. • Run the VerifyOCM program to ensure that the OCM tables are set up correctly. Unfortunately, one valid environment must be available to run VerifyOCM.

Setting Up a Printer

Issue	Resolution
You cannot set up a printer.	• The printer may not be attached (local printer), or the print server is not available (network printer). Attach to the local printer, or determine why the print server is not available. • The printer drivers may not be installed. Install the correct printer drivers.
You need more information about setting up Windows NT services, accounts, and privileges.	Review the description of how to set up Windows NT services, accounts, and privileges in Understanding Windows NT Services, Accounts, and Privileges.

Setting Up the JDE.INI File

Issue	Resolution
You cannot find the JDE.INI file.	• Search in the system\bin32 subdirectory in the ERP 8.0 tree - for example, z:\jdedwardsoneworld\b733\ddp\system\bin32\ jde.ini. • Make sure you have access rights to the system\bin32 directory by logging onto Windows NT under a user who has administrative rights.
You need more information about the ERP 8.0 jde.ini file.	Review the notes and descriptions of JDE.INI settings in the chapter *Troubleshooting the ERP 8.0 JDE.INI File* in this section and in the chapter *The jde.ini File in the System Administration Guide.*

Finding the Log Files

Issue	Resolution
You cannot find the log files.	• Log files are listed in the DebugFile and JobFile keys in the [DEBUG] section of the jde.ini. If no paths are shown, the logs are in the system\bin32 directory. The log files are named according to the following scheme: - An underscore (_) and the process ID of the process that creates the log file are inserted before the period - for example, jde_123.log or jdedebug_123.log for a process with an ID of 123. - The log file associated with the DebugFile key contains the sequence of ERP 8.0 events. - The default value for this key is jdedebug.log. - The log file associated with the JobFile key contains error messages that occur in ERP 8.0. - The default value for this key is jde.log. • When a batch application is run and the jde.ini on the workstation has

[NETWORK QUEUE SETTINGS] SaveOutput=TRUE, the jde_*xxx*.log and jdedebug_*xxx*.log files for the runbatch that processed the batch application is copied to a file in the PrintQueue directory. The root name of the files are the same as the name of the PDF file. The extension is .jde.log and .jdedebug.log. The duplication of these log files does not occur if the batch application runbatch.exe dies before duplication.

- Verify logging in the jde.ini is turned on using the following settings in the [DEBUG] section:

[DEBUG]

LogErrors=1

Output=FILE

Variables and their descriptions:

LogErrors

0 = Do not generate logs.

1 = Create logs.

Output

NONE = Do not write messages to any output device.

AUX = Write messages to a console window.

FILE = Write messages to log files.

BOTH = Write messages to log files and console window.

Not enough relevant information is written to the log files.	This could be because additional logging information needs to be turned on in the jde.ini. Set the following keys in the jde.ini for additional output to the log files:

[JDENET]

netTrace=1

[JDEIPC]

ipcTrace=1

[DEBUG]

TAMTraceLevel=1

[UBE]

UBEDebugLevel=6

[TCEngine]

TraceLevel=10

Variables and their descriptions:

netTrace

0 = Do not generate JDENet error messages (that is, communication between platforms).

1 = Generate JDENet error message.

ipcTrace

0 = Do not generate Interprocess Communication (IPC) error messages (that is, communication between processes on a single platform).

1 = Generate IPC error messages.

TAMTraceLevel

0 = Do not generate Table Access Management (TAM) error messages (that is,

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regarding specification files).

1 = Generate TAM error messages.

UBEDebugLevel

0 = Do not generate batch application error messages.

1 = Generate increasingly detailed error messages (1 gives the least specific messages, whereas 6 gives the most detailed messages).

TraceLevel

0 = Do not generate Table Conversion (TC) error messages.

1-10 = Generate increasingly detailed error messages (1 gives the least detail, whereas 10 gives the most detail).

Testing with PORTTEST

Issue	Resolution
An error with the security server occurred.	• Verify the ERP 8.0 network is running either as a service or started from a command prompt. • If the security server is inactive, or if it is active on a server and port that is different from the ones PORTTEST uses, do one of the following: - Start ERP 8.0 net on the server and port where PORTTEST is being run. The security server key in the [SECURITY] section of the jde.ini specifies the security server, and the serviceNameListen and serviceNameConnect settings in the [JDENET] section specify the ports. - Change the name of the security server or the names of the ports, or both, in the jde.ini file to point to the correct security server. • Make sure that the ERP 8.0 network and PORTTEST are running under the same account by doing the following: - To determine under which account PORTTEST is running, press the Control, Alt, and Delete keys at the same time. - If the ERP 8.0 network is running as a service, determine under which account it is running. To do this, choose the service in Windows NT's Control Panel, then go to Services and click on Startup. - For initial testing, you can stop the ERP 8.0 network service, open a Windows NT command prompt, cd to the system\bin32 directory, run jdenet_n without any parameters, and rerun PORTTEST. When finished, stop jdenet_n from the Windows NT Task Manager. - To run PORTTEST under the same account as the ERP 8.0 network service, log out of Windows NT, log into the same account under which the service is running, open a Windows NT command prompt, cd to the system\bin32 directory, and rerun PORTTEST. • To make sure the supplied user name and password, or both, match names and passwords, or both, in the ERP 8.0 security table, do one of the following: - Run PORTTEST with a valid user name and password. - Add the given user name and password to the ERP 8.0 security table.
You get the message "Invalid parms PORTTEST: <USER> <PWD> <ENV>".	The correct number of arguments to PORTTEST may not have been included. Use the following arguments: User - A valid ERP 8.0 account name. Password - Password for the ERP 8.0 account.

Environment - A valid ERP 8.0 environment.

Fewer than 99 records are written to the screen by PORTTEST.	• If PORTTEST failed, examine the log files.
	• Fewer than 99 records exist in the F0902 table. This is not an error. You should review the log files for errors.
	• If the F0902 table is not accessible, verify that you can query the F0902 table using SQL.
An error initializing the environment occurs in the log file.	The environment may not have been set up correctly. See the chapter Understanding the ERP 8.0 Initialization for Windows NT in this guide for more information about how ERP 8.0 programs use OCM. Any errors in the affected jde.ini keys or database tables could cause the ERP 8.0 initialization to fail. The environment that PORTTEST uses is passed as a command line argument.

Running ERP 8.0 Manually

Issue	Resolution
Jdequeue dies immediately.	• If a runaway killque process is still running, go to the Windows NT Task Manager and kill any killques that are still running. Then restart jdequeue.
	• If the ERP 8.0 network is not running, start the ERP 8.0 network service before the ERP 8.0 queue service.
	• Verify the ERP 8.0 network and queue are running under the same account by doing the following:
	- The ERP 8.0 network and queue should either be running both as services or both from a Windows NT command prompt.
	- If they are running as services, determine under which account they are running. To do this, choose the ERP 8.0 network service in Windows NT's Control Panel, choose Services, then Startup. Note the account name. If you are using Windows 2000, choose the ERP 8.0 network service in Windows NT's Control Panel, choose Services, then Properties. Repeat for the ERP 8.0 queue service.
	- If they are run from a command prompt, both the network and queue will be running under the Windows NT account into which you signed on. When you log off Windows NT, network and queue processes started from a command prompt and all child processes will terminate.
	• If the setup of some part of ERP 8.0, such as the jde.ini file or OCM, is incorrect, determine if PORTTEST runs correctly. If not, correct those problems and then try running ERP 8.0 manually.
An error initializing the environment occurs in the log file.	The setup for some part of ERP 8.0, such as the jde.ini file or OCM, may be incorrect. Examine the applicable problems under Testing with PORTTEST in this chapter. Determine if PORTTEST runs correctly. If not, correct those problems, and then try running ERP 8.0 manually.

Finding the Report Files

Issue	Resolution
You cannot find the report output files.	Check the OutputDirectory key of the [NETWORK QUEUE SETTINGS] section in the jde.ini file on the server. If no location is shown, the files are in the PrintQueue directory of the ERP 8.0 base directory - for example, z:\jdedwardsoneworld\b733\ddp\PrintQueue.
	Verify SaveOutput in the [NETWORK QUEUE SETTINGS] section in the jde.ini file on the workstation is TRUE.

Testing ERP 8.0 by Submitting a Report

Issue	Resolution
You get the error "Communication Failure with <server_name>" on the client.	• If a time out occurred because the ERP 8.0 server was started after the ERP 8.0 client was run, resubmit the report. • If a time out occurred due to heavy network traffic or server load, increase the time-out value in the jde.ini file on the workstation and resubmit the report. Use the JDENETTimeout setting in the [NETWORK QUEUE SETTINGS] section. • If the wrong communications port is being used, do one of the following: - Verify that the serviceNameListen value in the [JDENET] section of the jde.ini file on the workstation matches the serviceNameConnect value in the [JDENET] section of the jde.ini file on the server. In addition, the serviceNameConnect value in the jde.ini file on the workstation must match serviceNameListen in the jde.ini file on the server. If the values of these keys are strings, the numeric value is retrieved from the services file in the c:\winnt\system32\drivers\etc directory (Windows NT; client or server) or c:\windows\system32\drivers\etc directory (Windows 95; client only). - The services file contains a list of strings and their corresponding port numbers. If the port that you are interested in is on the last line of the services file, be sure to include a return at the end of the line or else the string will not be translated to the corresponding port number. • If the client is using Dynamic Host Configuration Protocol (DHCP) and the server does not have an entry for itself in its hosts file in the c:\winnt\system32\drivers\etc directory, add an entry for the server in the hosts file on the server. • Run the Server Administration Workbench (SAW) program. This program shows only the machines on the specified port (also known as service) that are running ERP 8.0 (either client or server). Troubleshoot using the following: - If the remote machine is visible, a time out probably occurred. Rerun the report. - If the remote machine is not visible, ping the remote machine using the name of the machine. - If the ping fails, ping the remote machine using its IP address. - If these pings fail, run SAW from the other machine (either client or server) and repeat the above steps. - With this information, determine if the client and server agree on the IP address for the server. - If none of these steps identify the problem, a general network error probably occurred (for example, the network is down or a machine is disconnected).
The following situations occur: • "Communications failure" error message on the workstation. • Restarting Network Service or jdenet_n sometimes gets rid of the error. • SAW (running on the	These issues can occur because the server has two network cards. This confuses JDENET when the net communications are initialized between the client and server. One machine tries to connect using one network card, and the other machine connects using the other network card. The hosts file on the server should list two different IP addresses for the server--one for each network card. Resolve the error by setting the NetHostName field in the [JDENET] section of the jde.ini to one of the names for the server given in the hosts file. JDENET then uses the IP address associated with the given network card.

workstation) cannot always see the server.	address associated with the given network card.
• You can ping the server from the workstation.	

The error "Cannot connect to printer" appears in the jde_xxx.log or the log file in the PrintQueue subdirectory.	• If a general printing error occurred, try to print a text document from Notepad. Resolve any issues.
	• If no default printer is set up on the enterprise server, set up a printer using the task "Add a new printer" or "Modify an existing printer" in the System Administration Guide.
	• If you do not have privileges to the printer, define the owner as a local or network account. The type of account depends on the type of printer:
	- Local printer--The owner could be either a local or network account but either type must have privileges to access the printer.
	- Network printer--The owner must be a network account with access privileges.
	See Understanding Windows NT Services, Accounts, and Privileges for more information about account privileges. To take ownership of a printer:
	1. From the Windows NT Start menu, choose Settings, then Printers. 2. Right-click on the desired printer. 3. Choose Properties and then the Privileges tab. 4. Click Ownership and then Take Ownership. If the printer drivers are not installed, see the section Database Driver Files in this guide for information about which drivers you need.

The report printouts are in portrait mode but should be in landscape mode (or vice versa).	• Verify that the orientation specified in RDA for the report is correct.
	• If the default printer is set to the wrong orientation, set the orientation using the following task:
	1. From the Windows NT Start menu, choose Settings, and then Printers. 2. Right-click on the desired printer. 3. Choose Document Defaults. 4. Choose the desired default orientation. 5. Click OK. All jobs sent to this printer using the current server will default to the selected orientation. Note that the report template or other programs may override this default orientation.

You cannot change the printer orientation.	You may not have the right to change the orientation. Log on to Windows NT in an account that has administrative rights for the printer. For a local printer, use an account that has administrative privileges. For a network printer, use an account given administrative privileges by a network administrator.

The report does not show any data.	Data may not exist in the database for the report that you are running or you do not have access to the data. Try one of the following:
	• Select a different report.
	• Add data to the database.
	• Change the processing options for the report.
	• Change the OCM and/or data sources to point to the correct database.
	• If the report is launched on the server, verify the vertical tables in

the server OCM match those in the workstation OCM.

- If you believe data should have been found, use the following task:

  1. Edit the report jdedebug.log found in the PrintQueue subdirectory.
  2. Search for the SQL select statement used to retrieve data from the database. You must have some idea what data is being read to do this.
  3. Copy the SQL statement.
  4. Open the database's respective SQL command interface - for example, SQL Plus or ISQL_w.
  5. Paste the SQL statement into the SQL command interface.
  6. Submit the SQL statement.

If no data is found, one of the following may be true:

- No data exists.
- The processing options are incorrect.
- The OCM for either the client or server is pointing to the wrong data source.
- The data sources for either the client or server are pointing to the wrong database.
- The SQL statement is incorrect (possibly due to a program bug).
- The database drivers are out of date.
- If an error occurred with the report, look in the jde_xxx.log for error messages.

An error initializing the environment occurs in the log file.	The environment may not be set up correctly. - See the chapter Understanding the ERP 8.0 Initialization for Windows NT in this guide for information about how ERP 8.0 programs use OCM. Any errors in the affected JDE.INI keys or database tables could cause the ERP 8.0 initialization to fail. If ERP 8.0 is run from the command line, the environment that jdequeue uses is passed as a command line argument. If ERP 8.0 is run as services, the environment is retrieved from the "QEnv" key in the [NETWORK QUEUE SETTINGS] section of the jde.ini. - Stop ERP 8.0 and determine if PORTTEST runs correctly. If not, correct those problems and then run ERP 8.0 manually.

Stopping ERP 8.0 as Run Manually

Issue	Resolution
You need to stop the ERP 8.0 processes that you started from the command prompt - for example, jdenet_n and jdequeue.	Stop any of the following processes that are running: - Jdenet_n.exe - Jdequeue.exe - Jdenet_k.exe - Runbatch.exe - Killque.exe - ipcsrv.exe These additional processes, such as jdenet_k and runbatch, are started by jdenet_n and jdequeue. To stop all the ERP 8.0 processes, use the following task: 1. Run the Windows NT Task Manager. 2. Choose the Processes tab.

3. Choose one of the running processes.

4. Click End Process.

5. Repeat for each process to be stopped.

The ERP 8.0 processes do not stop from the Task Manager as explained above.

You may not have the rights to stop the processes. Try one of the following:

- Log on to Windows NT in an account that has rights to stop processes.

- To stop processes via Visual C++, use the following task:

1. Run the Windows NT Task Manager.

2. Choose the Processes tab.

3. Choose one of the running processes.

4. Click Debug Process. Visual C++ will start.

5. Click on the "X" in the upper right-hand corner to close Visual C++. Do not save the project workspace. This should kill the runaway process.

6. Repeat these steps for each runaway process. If they still do not die, reboot the machine.

Troubleshooting E-Mail

Issue	Resolution
The report, server package installation, or table conversion log file (in the PrintQueue directory) shows the message "DoSendMessage Error: User 5600427 does not exist in the address book file (F0101)."	This could be because the particular user is not found in the Address Book table (F0101). Add the user to the Address Book table (F0101).

Troubleshooting Running ERP 8.0 as Services

This section explains how to troubleshoot issues that can occur with ERP 8.0 services.

Installing Services

Issue	Resolution
You get the message that the ERP 8.0 services are already installed.	To uninstall the ERP 8.0 services and then reinstall them, use the following task:

1. Run "jdesnet -u" from the system\bin32 directory.

2. Run "jdesque -u" from the system\bin32 directory.

3. Run "jdesnet -i" from the system\bin32 directory.

4. Run "jdesque -i" from the system\bin32 directory.

Starting Services

Issue	Resolution
The ERP 8.0 services do not start.	• The wrong ERP 8.0 services are installed (for example, the ImagePath value from the Windows NT Registry points to the wrong directory and executable). Use the following task to uninstall the incorrect services before installing the correct services:

1. Run "jdesnet -u" from the wrong system\bin32 directory.

2. Run "jdesque -u" from the wrong syste

3. Run "jdesnet -i" from the correct system\bin32 directory.

4. Run "jdesque -i" from the correct system\bin32 directory.

5. Try to start the services.

• If the account under which the services are set up to run does not have the privileges to stop or start services, use an account that is in the Administrators group, as opposed to the Administrator local user, in the local domain.

1. From the Windows NT Start button on the enterprise server, select Programs, Administrative Tools, and User Manager.

2. On the main menu,

The Select Domain window lists all domains. If the local domain (that is, it resides only on the local enterprise server) is named the same as the enterprise server, it will not be displayed in the list. You can type the name of the enterprise server in the Domain field - for example, SERVER1. The domain name displays in the title bar.

3. Click OK.

The User Manager window will display all the accounts for the domain that you selected.

4. From the User Manager main window, double-click the group Administrators.

The Local Group Properties window displays all users in the local Administrators group. Local accounts are not preceded by a domain name while network accounts include a domain name. For example, JDE is a local account, whereas JDEMD1\JDE is a network account.

To add a user to the Administrators group, use the following task:

1. From the Windows NT Start button on the enterprise server, choose Programs, Administrative Tools, and User Manager.

2. On the main menu, choose User and User Domain.

The Select Domain window shows all domains. If the local domain (that is, it resides only on the local enterprise server) is named the same as the enterprise server, it is not in the list. However, you can still type the name of the enterprise server in the Domain field. The domain name is displayed in the title bar.

3. Click OK.

4. Click Add. The Add Users and Groups form lists all users in the chosen domain.

5. Choose the desired domain.

6. Choose the desired user.

7. Click Add to add the user to the group.

8. Click OK.

- If the account under which you are logged on to Windows NT cannot start or stop services, log off and log in with an account that has privileges, such as an account in the

Administrators group in the local domain. (This is a group, as opposed to the Administrator local user.) Also, the account can be different from the account under which the services actually run.

- If the password for the account under which the services ran was entered incorrectly, use the following task to correct the password:

1. From the Windows NT Start button on the enterprise server, choose Settings, and then Control Panel.

2. Double-click the Services applet.

3. Choose the ERP 8.0 network service.

4. Choose Startup.

5. Verify the This Account option is turned on.

6. Enter the account name and password under which the network service will run. If the account is in the local domain, no domain name will precede the account name. If the account belongs to a network domain (it can access resources on the network), its domain name and a backslash (\) precedes the account name.

7. Click OK.

8. Repeat for the ERP 8.0 queue service.

Determine if ERP 8.0 runs correctly when started manually (jdenet_n and jdequeue run from the command line). If not, correct those problems, then rerun ERP 8.0 as services.

- For Windows 2000 users, if the password for the account under which the services ran was entered incorrectly, use the following task to correct the password:

1. From the Windows NT Start button on the enterprise server, choose Programs, then Administrative Tools, then Services.

2. Choose the ERP 8.0 network service.

3. From the Action menu, choose Properties.

4. On the Log On tab, verify the This Account option is turned on.

5. Enter the account name and password under which the network service will run. If the account is in the local domain, no domain name will precede the account name. If the account belongs to a network domain (it can access resources on the network), its domain name and a backslash (\) precedes the account name.

6. Click OK.

7. Repeat for the ERP 8.0 queue service.

Determine if ERP 8.0 runs correctly when started manually (jdenet_n and jdequeue run from the command line). If not, correct those problems, then rerun ERP 8.0 as services.

Testing ERP 8.0

Note:

Review the problems under *Testing ERP 8.0 by Submitting a Report* above. In addition, the following issues may occur:

Issue	Resolution
You get the error "Cannot connect to printer" in the jde_xxx.log or the log file in the PrintQueue subdirectory.	The account under which the ERP 8.0 services are running may not have privileges to the printer. Try the following: • If the printer is set up as a local printer, you can run the services from either a local or network account (this account must have the

privileges to start or stop services on the enterprise server).

- Determine if ERP 8.0 runs correctly when started manually (that is, jdenet_n and jdequeue run from the command line). If not, correct those problems and then try rerunning ERP 8.0 as services.
- If the printer is a network printer, run the services from a network account (this account must have the privileges to start or stop services on the enterprise server).

1. From the Windows NT Start button on the enterprise server, choose Settings, and then Control Panel.

2. Double-click the Services applet.

3.

4. Click Startup.

5. If not already turned on, click the This Account option.

6. Enter the account name and password under which the network service will run. If the account is in the local domain (that is, it is local to the enterprise server), no domain name will precede the account name. If the account belongs to a network domain (that is, it can access resources on the network), its domain name and a backslash (\) will precede the account name.

7. Click OK.

8. Repeat for the ERP 8.0 queue service.

- If you are a Windows 2000 user and the printer is a network printer, run the services from a network account (this account must have the privileges to start or stop services on the enterprise server).

1. From the Windows NT Start button on the enterprise server, choose Programs, then Administrative Tools, then Services.

2. Select the ERP 8.0 network service.

3. From the Action menu, choose Properties.

4. On the Log On tab, verify the This Account option is turned on.

5. Enter the account name and password under which the network service will run. If the account is in the local domain (that is, it is local to the enterprise server), no domain name will precede the account name. If the account belongs to a network domain (that is, it can access resources on the network), its domain name and a backslash (\) will precede the account name.

6. Click OK.

7. Repeat for the ERP 8.0 queue service.

The jdequeue processes die shortly after startup.

- If you have a database (such as SQL Server or Oracle) running on the enterprise server, and the database and the ERP 8.0 services are set to start automatically at system boot-up, the ERP 8.0 services may start before the database is fully up and running. Reinstall the ERP 8.0 services so that they depend on the database service using the following task:

1. From the Windows NT Start button on the enterprise server, choose Settings, then Control Panel.

2. Double-click the Services applet.

3. Determine the name of the database service - for example, MSSQLServer.

4. From a command prompt, cd to ERP 8.0's system\bin32 directory and uninstall the ERP 8.0 network and queue services using the following

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commands:

- jdesnet -uu

- jdesque -u

5. Reinstall the services using the following commands:

- jdesnet -i -dDatabaseService

- jdesque -i -dDatabaseService

where DatabaseService is the name of the service for the database, such as MSSQLServer.

These statements install the ERP 8.0 network and queue and specify that they will not start until the database completes its startup process.

6. From Services in the Control Panel, reset the account name and password under which the ERP 8.0 network and queue services will run.

- Windows 2000 users should reinstall ERP 8.0 services using the following task:

1. From the Windows NT Start button on the enterprise server, choose Programs, then Administrative Tools, then Services.

2. Determine the name of the database service - for example, MSSQLServer.

3. From a command prompt, cd to ERP 8.0's system\bin32 directory and uninstall the ERP 8.0 network and queue services using the following commands:

- jdesnet -uu

- jdesque -u

4. Reinstall the services using the following commands:

- jdesnet -i -dDatabaseService

- jdesque -i -dDatabaseService

where DatabaseService is the name of the service for the database, such as MSSQLServer.

These statements install the ERP 8.0 network and queue and specify that they will not start until the database completes its startup process.

5. From Services in the Control Panel, reset the account name and password under which the ERP 8.0 network and queue services will run.

- If ERP 8.0 lost the connection to the database because either the network or database went down, you should see a network or database error in the log files. Stop the ERP 8.0 services (the queue service followed by the network) and restart the ERP 8.0 services (the network service followed by the queue).

- If the setup of some part of ERP 8.0, such as the jde.ini file or OCM, is incorrect, determine if ERP 8.0 runs correctly when started manually (that is, jdenet_n and jdequeue run from the command line). If not, correct those problems, then try rerunning ERP 8.0 as services.

Stopping Services

Issue	Resolution
ERP 8.0 services do not stop.	• If the account under which the services are set up to run does not have the privileges to start or stop services, use an account that is in the Administrators group in the local domain (note that this is a group, as opposed to the Administrator local user). • If the account under which you are logged on to Windows NT does not have the privileges to start or stop services, log off of Windows NT and log in under an account that has privileges to start or stop services. The recommended solution is to use an account that is in the Administrators group in the local domain (note that this is a group, as opposed to the Administrator local user). This account can be different from the account under which the services actually run.
The ERP 8.0 processes still do not stop.	Stop any of the following processes that are running: • Jdesnet.exe • Jdesque.exe • Jdenet_n.exe • Jdequeue.exe • Jdenet_k.exe • Runbatch.exe • Killque.exe • ipcsrv.exe These processes are started by jdesnet and jdesque. Use the following task to stop any processes that do not stop: 1. Run the Windows NT Task Manager. 2. Choose the 3. Choose one of the following processes. 4. Click End Process. 5. Repeat for each process to be stopped.
ERP 8.0 processes do not stop from the Task Manager.	You may not have the administrative authority to stop the processes. Try one of the following: • Log on to Windows NT in an account that has authority to stop processes. • To stop processes using Visual C++, use the following task: 1. Run the Windows NT Task Manager. 2. Choose the Processes tab. 3. Choose one of the running processes. 4. Click Debug Process. Visual C++ will start. 5. Click on the "X" in the upper right-hand corner to close Visual C++. Do not save the project workspace. This should kill the runaway process. 6. Repeat these steps for each runaway process. If the processes still do not die, reboot the machine.

Troubleshooting a Multiple Release Setup

This section explains how to troubleshoot issues that can occur when you have multiple releases of ERP 8.0.

Issue	Resolution
The log files do not go to separate directories.	Each installed release of ERP 8.0 may have its own jde.ini in its system\bin32 directory. Entries in the jde.ini files point to the same subdirectory for the location of the log files. Change the DebugFile and JobFile keys in the [DEBUG] section of one or both jde.ini files to point to unique directories for each installed instance of ERP 8.0.
When you try to install the services of a different release, you get a message that the ERP 8.0 services are already installed.	Each installed release of ERP 8.0 may not have its own unique set of service names (that is, for JDE network and queue). Change the value of the StartServicePrefix key in the [INSTALL] section of one or both jde.ini files to point to a unique name. This name is used to build the names of the JDE network and queue services. The default value (if this key is absent or commented out with a semicolon) is "JDE" followed by a space, the current version number (for example, "B733"), another space, and either "Network" or "Queue." This default produces the service names "JDE B733 Network" and "JDE B733 Queue." If the StartServicePrefix has a value, this value will replace the "JDE" in the above network and queue service names. For example, if the value is "Instance2," the service names will be "Instance2 B733 Network" and "Instance2 B733 Queue."
When you try to run multiple releases of ERP 8.0 at the same time, conflicts occur between releases.	Each installed release of ERP 8.0 may not have its own unique set of keys in the JDE.INI file. Change the following in one or both JDE.INI files:

- [INSTALL] B733

The name of this key (for example, B733) is the ERP 8.0 release. The value of this key is the base directory of the ERP 8.0 installation (for example, z:\jdedwardsoneworld\b733\ddp).

- [JDEIPC] startIPCKeyValue

An integer value that indicates an arbitrary starting memory offset for interprocess communications. For multiple instances of the ERP 8.0 server, be sure that the differences between these values are 1000 or more. The default value is 5000.

- [JDEIPC] CLSID

A unique string generated by the Windows NT guidgen program. (See the reference section Installing ERP 8.0 on the Enterprise Server in the ERP 8.0 Upgrade Guide (Windows NT-Based Systems) for information on how to run guidgen.) The default identifier is a unique string that was created when the services programs were first developed. There should not be a problem with guidgen duplicating that original string.

- [NETWORK QUEUE SETTINGS] UBEQueue1, UBEQueue2, . . . , UBEQueuen

The name of the queue on which the Windows NT service programs run batch applications. The default is QBATCH.

Each batch application that is submitted has a corresponding record in the F986110 table. These records contain the ERP 8.0 server machine and queue name on which the batch application should process. The queue name and port number ensure that the correct instance of the ERP 8.0 server runs the intended job. The serviceNameListen and serviceNameConnect settings in the JDE.INI file determine the port

number.

- [JDENET] serviceNameConnect

Port through which JDENet tries to initialize connections with other platforms. The default is jde_server (which is translated using the services file). Each instance of ERP 8.0 server needs to communicate with ERP 8.0 clients through different ports.

- [JDENET] serviceNameListen

Port through which JDENet listens for connections from other platforms. The default value is jde_server (which is translated through the services file). Each instance of ERP 8.0 server needs to communicate with ERP 8.0 clients through different ports.

The J.D. Edwards Service Control program (jdesctrl), which can be used instead of the Services applet in Control Panel to start and stop ERP 8.0 services, takes a long time (perhaps several minutes) to start and stop services.	This could be because Jdesctrl periodically queries the services to determine their status. Because the default time between queries is one second, the large number of queries may slow down the computer. Try the following: • Change the [JDENET] ServiceControlRefresh key's value in one or more of the jde.ini files to a larger number, such as 5. This value is in seconds. • If the services still take a long time (several minutes) to start and stop, use the Services applet in Control Panel to start and stop the ERP 8.0 services.

Troubleshooting JDBNET

This section explains how to troubleshoot issues that can occur with JDBNET.

Issue	Resolution
You do not know how JDBNET is used.	JDBNET processes database requests using a client and server. It can also be configured to process server-to-server requests--one server functions as a JDBNET client and the other as a JDBNET server. JDBNET eliminates the need for database-specific network software. All database requests are transported to the JDBNET server and processed in a local database. The results are transported back to the JDBNET client.
You get an error that the data source on the JDBNET server cannot be found.	The correct data source on the JDBNET server may not exist. Create a data source on the server that will be used by JDBNET. This is a normal configuration for a server data source that can be accessed by JDENet running on that server. Note the data source name (OMDATP) that will be used for the JDBNET client configuration.
You get an error that the data source on the JDBNET client is not found.	The correct data source on the JDBNET client may not exist. Create a JDBNET data source in the F98611 table using the following information: • Data source name (OMDATP field) - Used to access tables as specified in the F986101 table. • Server name (OMSRVR field) - Identifies the JDBNET server. • Database name (OMDATB field) - Same as the data source name (that is, the OMDATP field) to be used by the JDBNET server. • Dynamic link library name (OMDLLNAME field) - Identifies the JDBNET workstation .DLL (jdbnet.dll on Windows NT). • All other columns must match the values in the corresponding columns of the server data source. • Set this data source as an active override in the F986101 table for all tables that will be accessed through JDBNET.

| **JDBNET does not transfer any data.** | • If the network is not running, run the ERP 8.0 network on both the JDBNET server and client. |
| | • If the JDBNET server and client are not using the same server port number, modify the serviceNameListen and serviceNameConnect fields in the [JDENET] section of the jde.ini file on both the JDBNET server and the JDBNET workstation. These values must match on both the JDBNET server and the JDBNET workstation. |

Troubleshooting the ERP 8.0 JDE.INI File

This section explains how to troubleshoot problems that can occur with the ERP 8.0 JDE.INI file. For more information about the JDE.INI file and its settings, see the chapter *The jde.ini File* in the *System Administration Guide*.

The following notes apply to the JDE.INI file:

- It is composed of several sections. The section names are enclosed in square brackets - for example, [JDENET].

- Within each section are one or more keys. The key name is on the left side of the equals sign, and the value of the key is on the right side.

- Do not include spaces in the names or values of the keys unless you know that a space is required. Do not include spaces immediately before or after the equals sign.

- Keys may be commented out by adding a semicolon (;) at the start of the key name.

- J.D. Edwards recommends that you place any incidental comments on a separate line above the key to which the comment applies. Be sure to include a preceding semicolon. (Comments can be included at the end of the keys' values, but these comments can be wrongly interpreted if they are not separated from the keys' values by enough white space. Because the amount of white space between the keys' values and the comments is not strictly defined, J.D. Edwards recommends that you do not place comments after the keys' values.)

- The section and key names are not case sensitive.

- Many key values are case sensitive.

- Although all of the following may mean to turn a feature on, they may not be interchangeable as values in the JDE.INI. Use a value that is comparable to the default value provided in the original JDE.INI. Also, many of these values are case sensitive. If you have any questions about valid values, ask J.D. Edwards Worldwide Customer Support Services.

  - YES

  - ON

  - TRUE

  - 1

  Likewise, the following values mean to turn a feature off. They are not necessarily interchangeable as values in the JDE.INI.

- NO

- OFF

- FALSE

- NONE

- 0

  If you are told by J.D. Edwards Worldwide Customer Support Services to modify a key that does not exist, you can add the key. Just be sure that it is in the correct section.

Troubleshooting Web Servers

This section describes some typical issues you might encounter when using WebSphere 3.0.2 and Java Application Server (JAS). It also explains other issues you might encounter with web servers and how to track down problems by using the log files in SAW.

Troubleshooting WebSphere 3.0.2

Issue	Resolution
Changes you make to configuration do not take effect.	Click the Apply button after you make any configuration changes within the Topology tab of the WebSphere Application Server.
When switching from one application server to another in the WebSphere Administration Console, the screen does not refresh the way it should. Fields appear as if you were looking at the original application server rather than the new application server.	Refresh the screen.
DB/2 will not start and an error message appears, stating that the license is no longer valid.	Downloading the trial WebSphere Application Server from the web only installs a trial version of the DB/2 database that expires in 60 days. Look in the stdout.log and the stderr.log for indications of license expiration.
	Alternatively, at the DOS prompt enter the following command:
	C:\>db2start
	License expiration should occur only when you download the Trial WebSphere Application Server from the web. If you install the WebSphere Application server from Net.Commerce or from the WebSphere Commerce Suite package, you should not have licensing problems because IBM supplies a valid license with DB/2 on their CDs. If you do encounter licensing problems, contact your WebSphere vendor.
Need to ensure that WebSphere started successfully.	The size and content of the logs listed below are a good indicator of successful startup.
	In most cases, the server does not need to be bounced. Stopping and restarting the Application Server is usually sufficient.

Log	Approximate Size (Windows NT)	Messages to look for
Jas.log	2 KB	ERP 8.0 JAS startup initiated
		ERP 8.0 JAS startup completed
Jasdebug.log	2 KB	Same as above, with additional logging for database calls, business function calls, etc.
Stdout.log	15 KB	Messages regarding successful instantiation of servlets like the ServletProxy and errorReporter
Stderr.log	0 KB	Should be empty. Displayed messages indicate errors from the main WebSphere servlet Java process.

Troubleshooting IIS and IBM HTTP Web Servers

Issue	Resolution
Configuration with IIS and IBM HTTP Server	Refer to installation documentation.
Need to make sure IIS is running for the particular instance of JAS. Message might read, "Recursive error - page not found."	IIS instances can be stopped very easily and the user may forget to start them back up. Verify IIS instance properties by selecting the appropriate instance, and then right-click and choose Properties. Confirm the correct paths are listed for the desired JAS code.

Troubleshooting JAS

Issue	Resolution
No logs appear	Verify that the [LOGS] setting, in the jas.ini, has logging turned on and points the log files to reside in the location you desire (for example, ;log=d\b7\internet\jas.log or ;debuglog=d:\b7\internet\jasdebuglog. If the log file paths are not correctly stipulated, the logs may be writing to a file located somewhere else.
JAS seems slow	Check to see whether jdbcTrace is set to TRUE or FALSE. If tracing is turned on, or set to TRUE, the additional logging will dramatically slow down the performance of JAS.

Troubleshooting Serialized Database and Generation Issues

Issue	Resolution
Error message: "Form is out of date...most likely needs to be regenerated."	This error usually occurs because the specifications used to construct the serialized database do not match the JAS code. Ensure that the date the JAS code was written matches the date of the jdecom.dll that resides in the b7\system\bin32 directory of the generating machine. Also be sure to register the jdecom.dll. After you run the regsvr32 jdecom.dll command, the Java & HTML Generator recognizes the jdecom.dll and uses it to fetch ERP 8.0 specs and convert them into Java serialized objects.
Menu does not appear when user signs on to ERP 8.0.	Check the following: • [JDBC URL] section in jde.ini is set correctly, or [JDBC DRIVERS] is set correctly. The [JDBC URL] points to the serialized database (the one you just set up). • Bounce the WebSphere application server. Menus are cached, and by bouncing the server you clear out the cached information. • Ensure that the host database for serialized objects is running.

Troubleshooting SQL Server Issues

Issue	Resolution
SQL Server process or Oracle process consumes excess CPU in a web server environment.	The serialized objects for the web server are stored in either SQL server or the Oracle database. The web server must access these tables frequently when running an application. Indexes may be missing, which can cause severe performance problems.
	First, ensure that all existing ERP 8.0 indexes have been created for tables F989998 and F989999. You should have one index over F989998 for columns WBJOBID and WBOID. You should also have one index for F989999 for columns WBUID, WBOID, WBLNGPREF. If these indexes do not exist in your database, generate them using Object Librarian.
	Second, you should add a new index to the F989999. This index should include columns WBOID, WBUID, and WBJVER. Generate this index over the F9899999 table.
	Third, you will need to update statistics on both tables as follows:
	1. Oracle: Issue the following commands in SQL *Plus:
	ANALYZE TABLE owner.F989999 COMPUTE STATISTICS
	ANALYZE TABLE owner.F989999 COMPUTE STATISTICS
	2. SQL Server: Issue the following command:
	UPDATE STATISTICS owner.F989999
	UPDATE STATISTICS owner.F989998
	Improvements will vary depending on the number of users accessing the serialized database.

Troubleshooting Problems Using Log Files

Issue	Resolution
Need to view logging information for the Java client.	Open the Java Console by choosing Java Console from the View menu in Internet Explorer. The Java Console displays all problems that the Java Virtual Machine on your client is having. Errors appear as uncaught exceptions in the console. Note: You must have the appropriate internet options turned on in order to view the Java Console.
	To enable the Java Console in Internet Explorer, choose Tools, and then choose Internet Options. In Internet Options, click the Advanced tab, scroll down to the section titled Java VM and choose the following options:
	• Java Console enabled
	• Java logging enabled
	• JIT compiler for virtual machine enabled
Need to troubleshoot errors in Web applications	1. If possible, verify that the problem is only a problem on the Web. Test the fat client version of the same application against the same enterprise server that the web is using. Make sure that you use the same ERP 8.0 accounts and environments.
	2. Determine whether the problem happens in HTML, Java, or both. Since both Java and HTML use the Java runtime engine, they should behave the same. There will be some variation based on the inherent differences between the Portal, HTML page processing, and Java interactive processing, but underlying functionality and

processing should be the same.

3. If possible, recreate the problem on the Web server. (The logs will work in the Portal, HTML, and Java.)

4. Open a separate Internet Explorer browser and use it to access the Web Server Monitor for the web server being used. See Monitoring ERP 8.0 with the Web Server Monitor for information about accessing the Web Server Monitor.

5. Check the Standard Error Log (stderr.log) for errors. A common error you might see here is BSFN Failed. If you see this error, verify that the enterprise server is up and that the BSFN is not a T1 BSFN.

T1 refers to Type 1 business functions, which are client-only business functions. They cannot run on a server.

6. Check the Standard Output Log (stdout.log) for more information. For example, you can view the time and date stamps from the errors found in both the Jas.log and the standard error log to find more detailed information about what was going on around the same time the errors happened.

Issue **Resolution**

7. If you need more information, enable Debug.log and set Net Trace, which you can do in the [LOGS] section of jas.ini file. Recreate the problem, following steps 5 and 6 above. View the Debug.log and look for more information.

See Monitoring ERP 8.0 with the Web Server Monitor for more information about enabling log files and setting Net Trace using that tool.

You can also use the Server Administration Workbench (SAW) for monitoring web servers. See the chapter Monitoring Web Server Statistics in the section Monitoring ERP 8.0 with SAW on Windows NT in this guide for more information.

8. Try to find SQL statement information. SQL statements can give you an idea of what values are being passed. Some common failures include:

- Form Interconnects are passing incorrect information. Verify that the fat client is working correctly. Watch especially for null, blank, and zero problems as well as special characters.
- String is too big. Note carefully what you did to get this error.
- Null values are being passed. Your SQL statement information search results in nothing being found. Check the SQL statements and make sure correct values were passed. Determine where failure happened and make a note of it.
- The application stops responding. Check logs for BSFN failures.

Glossary

This glossary defines terms in the context of your use of J.D. Edwards systems and the accompanying documentation.

3rd Generation Language (3GL). A programming language that requires detailed information about how to complete a task. Examples of 3GLs are COBOL, C, Pascal and FORTRAN.

4th Generation Language (4GL). A programming language that focuses on what you need to do and then determines how to do it. SQL is an example of a 4GL.

Action Message. With ERP 8.0, users can receive messages (system-generated or user-generated) that have shortcuts to ERP 8.0 forms, applications, and appropriate data. For example, if the general ledger post sends an action error message to a user, that user can access the journal entry (or entries) in error directly from the message. This is a central feature of the ERP 8.0 workflow strategy. Action messages can originate either from ERP 8.0 or from a third-party e-mail system.

ActiveX. A computing technology based on Microsoft's OLE, that enables Java applet-style functionality for Web browsers as well as other applications. (Java is limited to Web browsers at this time.) The ActiveX equivalent of a Java applet is an ActiveX control. These controls bring computational, communications, and data manipulation power to programs that can "contain" them. For example, certain web browsers, Microsoft Office programs, and anything developed with Visual Basic or Visual C++.

API. See *Application Programming Interface*.

Applet. A small application, such as a utility program or a limited-function spreadsheet. It is generally associated with the programming language Java, and in this context refers to Internet-enabled applications that can be passed from a web server to a web browser residing on a client.

Application. In the computer industry, the same as an executable. In ERP 8.0, an interactive or batch application is a DLL containing programming for a set of related forms that can be run from the menu driver to perform a business task.

Application Developer. A programmer who develops ERP 8.0 applications using the ERP 8.0 toolset.

Application Programming Interface (API). A software function call that can be made from a program to access functionality provided by another program.

Application Workspace. The area in which all related forms within an application appear.

Batch-of-One Immediate. A transaction method that allows a client application to perform work on a client platform, then submit the work all at once to a server application as a batch process. While the batch process is running on the server platform, the client application can continue performing other tasks.

BDA. See *Business View Design Aid.*

Binary String (BSTR). A length prefixed string used by OLE automation data manipulation functions. Binary Strings are wide, double-byte (Unicode) strings on 32-bit Windows platforms.

Browser. A client application that translates information sent by the World Wide Web. A client must use a browser to receive World Wide Web information on the desktop.

BSTR. See *Binary String*.

Business Function. An encapsulated set of business rules and logic that can normally be reused by multiple applications. Business functions can execute a transaction or a subset of a transaction (check inventory, issue work orders, and so on). Business functions also contain the APIs that allow them to be called from a form, a database trigger, or a non-ERP 8.0 application. Business functions can be combined with other business functions, forms, event rules, and other components to make up an application. Business functions can be created through event rules or third-generation languages, such as C. Examples of business functions include Credit Check and Item Availability.

Business Function Event Rule. Encapsulated, reusable business logic created through event rules rather than C programming.

Business View. Used by ERP 8.0 applications to access data from database tables. A business view is a means for selecting specific columns from one or more tables whose data will be used in an application or report. It does not select specific rows and does not contain any physical data. It is strictly a view through which data can be handled.

Business View Design Aid (BDA). A ERP 8.0 GUI tool for creating, modifying, copying, and printing business views.

Central Objects. Objects that reside in a central location and consist of two parts: the central objects data source and central C components. The central objects data source contains ERP 8.0 specifications, which are stored in a relational database. Central C components contain business function source, header, object, library and DLL files and are usually stored in directories on the deployment server. Together they make up central objects.

Child. See *Parent/Child Form*.

Check-in Location. The directory structure location for the package and its set of replicated objects. This is usually \\deploymentserver\release\path_code\package\packagename. The sub-directories under this path are where the central C components (source, include, object, library, and DLL file) for business functions are stored.

Client/Server. A relationship between processes running on separate machines. The server process is a provider of software services. The client is a consumer of those services. In essence, client/server provides a clean separation of function based on the idea of service. A server can service many clients at the same time and regulate their access to shared resources. There is a many-to-one relationship between clients and a server, respectively. Clients always initiate the dialog by requesting a service. Servers passively wait for requests from clients.

Configurable Client Engine. Allows user flexibility at the interface level. Users can easily move columns, set tabs for different data views, and size grids according to their needs. Also enables the incorporation of Web browsers in addition to the Windows 95- and Windows NT-based interfaces.

Configurable Network Computing. An application architecture that allows interactive and batch applications, composed of *a single code base,* to run across a TCP/IP network of multiple server platforms and SQL databases. The applications consist of reusable business functions and associated data that can be configured across the network dynamically. The overall objective for businesses is to provide a future-proof environment that enables them to change organizational structures, business processes, and technologies independently of each other.

Configurable Processing Engine. Handles all "batch" processes, including reporting, Electronic Data Exchange (EDIt) transactions, and data duplication and transformation (for data warehousing). This does not mean that it exists only on the server. It can be configured to run on desktop machines (Windows 95 and NT Workstation) as well.

Control. Formerly known as "field," a control is any data entry point on a form that controls the data presented in the detail area. For instance, check boxes, pull-down lists, hyper-buttons, and similar features are controls.

Custom Gridlines. A grid row that does not come from the database, as with totals. To display a total in a grid, sum the values and insert a custom grid row to display the total. Use the system function, Insert Grid Row Buffer to accomplish this.

Data Dictionary. The ERP 8.0 data dictionary contains data item definitions and specifications. J.D. Edwards has an active data dictionary that is accessed at runtime.

Data Mart. Department-level decision support databases. They usually draw their data from an enterprise data warehouse that serves as a source of consolidated and reconciled data from around the organization. Data marts can be either relational or multidimensional databases.

Data Source. A specific instance of a database management system running on a computer. Data source management is accomplished through Object Configuration Manager (OCM) and Object Map (OM).

Data Structure. A group of data items that can be used for passing information between objects, for example, between two forms, between forms and business functions, or between reports and business functions.

Data Warehouse. A database used for reconciling and consolidating data from multiple databases before it is distributed to data marts for department-level decision support queries and reports. The data warehouse is generally a large relational database residing on a dedicated server between operational databases and the data marts.

Data Warehousing. Essentially, data warehousing involves off-loading operational data sources to target databases that will be used exclusively for decision support (reports and queries). There are a range of decision support environments, including:

1.) Duplicated database

2.) Enhanced analysis database

3.) Enterprise data warehouse

Data Replication. In a replicated environment, multiple copies of data are maintained on multiple machines. There must be a single source that "owns" the data. This ensures that the latest copy of data can be applied to a primary place and then replicated as appropriate. (This is in contrast to a simple copying of data, where the copy is not maintained from a central location, but exists independently of the source.)

Database Driver. Software that connects an application to a specific database management system.

Database Server. A server that stores data. A database server does not have ERP 8.0 logic.

DCE. See *Distributed Computing Environment*.

Deployment Server. The central point of the ERP 8.0 installation process. It is used for package deployment and to hold the central C components portion of central objects.

Detail Area. A control that is found in ERP 8.0 applications and functions similarly to a spreadsheet grid for viewing, adding, or updating many rows of data at one time.

Direct Connect. A transaction method in which a client application communicates interactively and directly with a server application.

Distributed Computing Environment (DCE). A set of integrated software services that allows software running on multiple computers to perform in a manner that is seamless and transparent to the end-users. DCE provides security, directory, time, remote procedure calls, and files across computers running on a network.

DLL. See *Dynamic Link Library*.

Duplicated Database. A decision support database that contains a straightforward copy of operational data. The advantages involve improved performance for both operational and reporting environments.

Dynamic Link Library (DLL). DLLs contain a set of program modules that are designed to be invoked from executables when the executables are run, without having to be linked to the executables. They typically contain commonly used functions.

Dynamic Partitioning. The ability to dynamically distribute logic or data to multiple tiers in a client/server architecture.

Embedded Event Rule. An event rule that is specific to a particular table or application. Examples include form-to-form calls, hiding a field based on a processing options value, and calling a business function.

Encapsulation. The ability to confine access to and manipulation of data within an object to the procedures that contribute to the definition of that object.

Enhanced Analysis Database. A database containing a subset of operational data. The data on the enhanced analysis database has some light calculations and summarization to speed report and query response times. This solution is appropriate when some external data needs to be added to source data, or when historical data is necessary for trend analysis or regulatory reporting.

Enterprise Data Warehouse. A complex solution involving data from many areas of the enterprise. This environment requires a large relational database (the data warehouse) that will serve as a central repository of clean, reconciled, and consolidated enterprise data. From this repository, department-level data marts draw their decision support data.

Enterprise Server. A database server and logic server. See *Database Server, Logic Server.* Also referred to as host.

Enterprise Workflow Center. The central hub for monitoring workflow activities in ERP 8.0. This is a defined series of steps for tracking process flows and activities using mail messages to communicate information. In conjunction, the enterprise workflow center acts as a central mail messaging center.

ERP. Enterprise Resource Planning.

Event. Actions that might occur when a GUI application or ERP 8.0 report is running. Example events are tabbing out of an edit control, clicking a push button, initializing a form, or performing a page break on a report. The GUI operating system uses miniprograms to manage user activities within a form. Additional logic can be attached to these miniprograms and used to give greater functionality to any event within a ERP 8.0 application or report using event rules.

Event Rule. Used to create complex business logic without the difficult syntax that comes with many programming languages. These logic statements can be attached to applications or database events and are executed when the defined event occurs, such as entering a form, selecting a menu bar option, page breaking on a report, or deleting a record. An event rule can validate data, send a message to a user, call a business function, as well as many other actions. There are two types of event rules:

1.) Embedded event rules

2.) Business function event rules

Executable. A computer program that can be run from the computer's operating system. Equivalent terms are "application" and "program."

FDA. See *Forms Design Aid*.

Find/Browse. A type of form used to:

1) Search, view, and select multiple records in a detail area

2) Delete records

3) Exit to another form

4) Serve as an entry point for most applications

Firewall. A set of technologies that allows an enterprise to test, filter, and route all incoming messages. Firewalls are used to keep an enterprise secure.

Fix/Inspect. A type of form used to view, add, or modify existing records. A fix/inspect form has no detail area.

Form. In Microsoft Windows terminology a form is known as a *dialog box*. In ERP 8.0, a form is a GUI window that contains controls to display, accept input of, and process information. A ERP 8.0 application might contain multiple forms.

Form Interconnection. Allows you to go to any other ERP 8.0 form and pass data to that form. Form interconnections can be attached to any event; however, they are normally used when a button is clicked.

Form Type. The following form types are available in ERP 8.0:

1) Find/browse

2) Fix/inspect

3) Header/detail

4) Headerless detail

5) Message

6) Parent/child

7) Search/select

Forms Design Aid (FDA). The ERP 8.0 GUI development tool for building applications and forms.

Graphical User Interface. A computer interface that is graphically based as opposed to being character-based. An example of a character-based interface is that of the AS/400. An example of a GUI is Microsoft Windows. Graphically based interfaces allow pictures and other graphic images to be used in order to give people clues on how to operate the computer.

Grid. See *Detail Area*.

GUI. See *Graphical User Interface.*

Header/Detail. A type of form used to add, modify, or delete records from two different tables. The tables usually have a parent/child relationship.

Headerless Detail. A type of form used to work with multiple records in a detail area. The detail area is capable of receiving input.

Host. In the centralized computer model, a large timesharing computer system that terminals communicate with and rely on for processing. It contrasts with client/server in that those users work at computers that perform much of their own processing and access servers that provide services such as file management, security, and printer management.

HTML. See *Hypertext Markup Language.*

Hypertext Markup Language. A markup language used to specify the logical structure of a document rather than the physical layout. Specifying logical structure makes any HTML document platform independent. You can view an HTML document on any desktop capable of supporting a browser. HTML can include active links to other HTML documents anywhere on the Internet or on intranet sites.

Index. Represents both an ordering of values and a uniqueness of values that provide efficient access to data in rows of a table. An index is made up of one or more columns in the table.

Inheritance. The ability of a class to receive all or parts of the data and procedure definitions from a parent class. Inheritance enhances development through the reuse of classes and their related code.

Integrated Toolset. Unique to ERP 8.0 is an industrial-strength toolset embedded in the already comprehensive business applications. This toolset is the same toolset used by J.D. Edwards to build ERP 8.0 interactive and batch applications. Much more than a development environment, however, the ERP 8.0 integrated toolset handles reporting and other batch processes, change management, and basic data warehousing facilities.

Internet. The worldwide constellation of servers, applications, and information available to a desktop client through a phone line or other type of remote access.

Interoperability. The ability of different computer systems, networks, operating systems, and applications to work together and share information.

Intranet. A small version of the Internet usually confined to one company or organization. An intranet uses the functionality of the Internet and places it at the disposal of a single enterprise.

IP. A connection-less communication protocol that by itself provides a datagram service. Datagrams are self-contained packets of information that are forwarded by routers based on their address and the routing table information contained in the routers. Every node on a TCP/IP network requires an address that identifies both a network and a local host or node on the network. In most cases the network administrator sets up these addresses when installing new workstations. In some cases, however, it is possible for a workstation, when booting up, to query a server for a dynamically assigned address.

IServer Service. Developed by J.D. Edwards, this internet server service resides on the web server, and is used to speed up delivery of the Java class files from the database to the client.

J.D. Edwards Database. See *JDEBASE Database Middleware*.

Java. An Internet executable language that, like C, is designed to be highly portable across platforms. This programming language was developed by Sun Microsystems. Applets, or Java applications, can be accessed from a web browser and executed at the client, provided that the operating system or browser is Java-enabled. (Java is often described as a scaled-down C++). Java applications are platform independent.

Java Database Connectivity (JDBC). The standard way to access Java databases, set by Sun Microsystems. This standard allows you to use any JDBC driver database.

JDEBASE Database Middleware. J.D. Edwards proprietary database middleware package that provides two primary benefits:

1) Platform-independent APIs for multidatabase access. These APIs are used in two ways:

a. By the interactive and batch engines to dynamically generate platform-specific SQL, depending on the data source request.

b. As open APIs for advanced C business function writing. These APIs are then used by the engines to dynamically generate platform-specific SQL.

2) Client-to-server and server-to-server database access. To accomplish this ERP 8.0 is integrated with a variety of third-party database drivers, such as Client Access 400 and open database connectivity (ODBC).

JDECallObject. An API used by business functions to invoke other business functions.

JDENET. J.D. Edwards proprietary middleware software. JDENET is a messaging software package.

JDENET Communications Middleware. J.D. Edwards proprietary communications middleware package for ERP 8.0. It is a peer-to-peer, message-based, socket-based, multiprocess communications middleware solution. It handles client-to-server and server-to-server communications for all ERP 8.0 supported platforms.

Just In Time Installation (JITI). ERP 8.0's method of dynamically replicating objects from the central object location to a workstation.

Key. A column or combination of columns that identify one or more records in a database table.

Message center. This is a central location for sending and receiving all ERP 8.0 messages (system and user generated) regardless of the originating application or user. Each user has a mailbox that contains workflow and other messages, including Active Messages. With respect to workflow, the Message Center is MAPI compliant and supports drag and drop work reassignment, escalation, forward and reply, and workflow monitoring. All messages from the message center can be viewed through ERP 8.0 messages or Microsoft Exchange.

Middleware. A general term that covers all the distributed software needed to support interactions between clients and servers. Think of it as the software that's in the middle of the client/server system or the "glue" that lets the client obtain a service from a server.

Modal. A restrictive or limiting interaction created by a given condition of operation. Modal often describes a secondary window that restricts a user's interaction with other windows. A secondary window can be modal with respect to its primary window or to the entire system. A modal dialog box must be closed by the user before the application continues.

Modeless. Not restrictive or limiting interaction. Modeless often describes a secondary window that does not restrict a user's interaction with other windows. A modeless dialog box stays on the screen and is available for use at any time but also permits other user activities.

Multitier Architecture. A client/server architecture that allows multiple levels of processing. A tier defines the number of computers that can be used to complete some defined task.

Network Computer. As opposed to the personal computer, the network computer offers (in theory) lower cost of purchase and ownership and less complexity. Basically, it is a scaled-down PC (very little memory or disk space) that can be used to access network-based applications (Java applets, ActiveX controls) via a network browser.

Network Computing. Often referred to as the next phase of computing after client/server. While its exact definition remains obscure, it generally encompasses issues such as transparent access to computing resources, browser-style front-ends, platform independence, and other similar concepts.

Object. A self-sufficient entity that contains data as well as the structures and functions used to manipulate the data. For ERP 8.0 purposes, an object is a reusable entity that is based on software specifications created by the ERP 8.0 toolset. See also *Object Librarian*.

Object-Based Technology (OBT). A technology that supports some of the main principles of object-oriented technology: classes, polymorphism, inheritance, or encapsulation.

Object Configuration Manager (OCM). ERP 8.0's Object Request Broker and the control center for the runtime environment. It keeps track of the runtime locations for business functions, data, and batch applications. When one of these objects is called, the Object

Configuration Manager directs access to it using defaults and overrides for a given environment and user.

Object Embedding. When an object is embedded in another document, an association is maintained between the object and the application that created it; however, any changes made to the object are also only kept in the compound document. See also *Object Linking.*

Object Librarian. A repository of all versions, applications, and business functions reusable in building applications. It provides check-out and check-in capabilities for developers, and it controls the creation, modification, and use of ERP 8.0 objects. The Object Librarian supports multiple environments (such as production and development) and allows objects to be easily moved from one environment to another.

Object Linking. When an object is linked to another document, a reference is created with the file the object is stored in, as well as with the application that created it. When the object is modified, either from the compound document or directly through the file it is saved in, the change is reflected in that application as well as anywhere it has been linked. See also *Object Embedding.*

Object Linking and Embedding (OLE). A way to integrate objects from diverse applications, such as graphics, charts, spreadsheets, text, or an audio clip from a sound program. See also *Object Embedding, Object Linking.*

Object-Oriented Technology (OOT). Brings software development past procedural programming into a world of reusable programming that simplifies development of applications. Object orientation is based on the following principles: classes, polymorphism, inheritance, and encapsulation.

ODBC. See *Open Database Connectivity.*

OCM. See *Object Configuration Manager.*

OLE. See *Object Linking and Embedding*.

ERP 8.0. A combined suite of comprehensive, mission-critical business applications and an embedded toolset for configuring those applications to unique business and technology requirements. ERP 8.0 is built on the Configurable Network Computing technology -- J.D. Edwards' own application architecture, which extends client/server functionality to new levels of configurability, adaptability, and stability.

ERP 8.0 Application. Interactive or batch processes that execute the business functionality of ERP 8.0. They consist of reusable business functions and associated data that are platform independent and can be dynamically configured across a TCP/IP network.

ERP 8.0 Object. A reusable piece of code that is used to build applications. Object types include tables, forms, business functions, data dictionary items, batch processes, business views, event rules, versions, data structures, and media objects. See also *Object.*

ERP 8.0 Process. Allows ERP 8.0 clients and servers to handle processing requests and execute transactions. A client runs one process, and servers can have multiple instances. ERP 8.0 processes can also be dedicated to specific tasks (for example, workflow messages and data replication) to ensure that critical processes don't have to wait if the server is particularly busy.

ERP 8.0 Web Development Computer. A standard ERP 8.0 Windows developer computer with the additional components installed:

- Sun's JDK 1.1
- JFC (0.5.1)
- Generator Package with Generator.Java and JDECOM.dll

- R2 with interpretive and application controls/form

Open Database Connectivity (ODBC). Defines a standard interface for different technologies to process data between applications and different data sources. The ODBC interface is made up of a set of function calls, methods of connectivity, and representation of data types that define access to data sources.

Open Systems Interconnection (OSI). The OSI model was developed by the International Standards Organization (ISO) in the early 1980s. It defines protocols and standards for the interconnection of computers and network equipment.

Package. ERP 8.0 objects are installed to workstations in packages from the deployment server. A package can be compared to a bill of material or kit that indicates the necessary objects for that workstation and where on the deployment server the install program can find them. It is a point-in-time "snap shot" of the central objects on the deployment server.

Package Location. The directory structure location for the package and its set of replicated objects. This is usually \\deploymentserver\release\path_code\package\packagename. The sub-directories under this path are where the replicated objects for the package will be placed. This is also referred to as where the package is built or stored.

Parent/Child Form. A type of form that presents parent/child relationships in an application on one form. The left portion of the form presents a tree view that displays a visual representation of a parent/child relationship. The right portion of the form displays a detail area in browse mode. The detail area displays the records for the child item in the tree. The parent/child form supports drag and drop functionality.

Partitioning. A technique for distributing data to local and remote sites to place data closer to the users who access. Portions of data can be copied to different database management systems.

Path Code. A pointer to a specific set of objects. A path code is used to locate:

1.) Central Objects

2.) Replicated Objects

Platform Independence. A benefit of open systems and Configurable Network Computing. Applications that are composed of a single code base can be run across a TCP/IP network consisting of various server platforms and SQL databases.

Polymorphism. A principle of object-oriented technology in which a single mnemonic name can be used to perform similar operations on software objects of different types.

Portability. Allows the same application to run on different operating systems and hardware platforms.

Primary Key. A column or combination of columns that uniquely identifies each row in a table.

Processing Option. The choices available when you submit a version of a program for processing. Processing options set up default values, control formats, control breaks and totaling for reports, and control how an application or report processes data.

Query by Example (QBE). Located at the top of a detail area, it is used to search for data to be displayed in the detail area.

Redundancy. Storing exact copies of data in multiple databases.

Regenerable. Source code for ERP 8.0 business functions can be regenerated from specifications (business function names). Regeneration occurs whenever an application is recompiled, either for a new platform or when new functionality is added.

Relationship. Links tables together and facilitates joining business views for use in an application or report. Relationships are created based on indexes.

Release/Release Update. A "release" contains major new functionality, and a "release update" contains an accumulation of fixes and performance enhancements, but no new functionality.

Replicated Object. A copy or replicated set of the central objects must reside on each client and server that run ERP 8.0. The path code indicates the directory where these objects are located.

SAR. See *Software Action Request.*

Scalability. Allows software, architecture, network, or hardware growth that will support software as it grows in size or resource requirements. The ability to reach higher levels of performance by adding microprocessors.

Search/Select. A type of form used to search for a value and return it to the calling field.

Server. Provides the essential functions for furnishing services to network users (or clients) and provides management functions for network administrators. Some of these functions are:

1) Storage of operating system program modules, utilities, and commands

2) Storage of user programs and data

3) Management functions for the file system

4) Management functions for security and user access

5) Network monitoring and management components

6) Data protection functions for fault tolerance

It may not be possible for one server to support all users with the required services. Dedicated servers that handle specific tasks, such as those listed below, are also common:

1) Backup and archive servers

2) Application server

3) Database server

4) Electronic mail server

5) Fax server

6) Print server

7) Directory services server

Software Action Request (SAR). An entry in the AS/400 database used for requesting modifications to J.D. Edwards software.

Specifications. A complete description of a ERP 8.0 object. Each object has its own specification, or name, which is used to build applications.

Static Text. Short, descriptive text that appears next to a control variable or field. When the variable or field is enabled, the static text is black; when the variable or field is disabled, the static text is gray.

SQL. See *Structured Query Language.*

Store and Forward. A transaction method that allows a client application to perform work and, at a later time, complete that work by connecting to a server application. This often involves uploading data residing on a client to a server.

Structured Query Language (SQL). A fourth generation language used as an industry standard for relational database access. It can be used to create databases and to retrieve, add, modify, or delete data from databases. SQL is not a complete programming language because it does not contain control flow logic.

System Function. A program module, provided by ERP 8.0, available to applications and reports for further processing.

Table. A two-dimensional entity made up of rows and columns. All physical data in a database are stored in tables. A row in a table contains a record of related information. An example would be a record in an Employee table containing the Name, Address, Phone Number, Age, and Salary of an employee. Name is an example of a column in the employee table.

Table Design Aid (TDA). A ERP 8.0 GUI tool for creating, modifying, copying, and printing database tables.

Table Event Rules. Use table event rules to attach database triggers (or programs) that automatically run whenever an action occurs against the table. An action against a table is referred to as an event. When you create a ERP 8.0 database trigger, you must first determine which event will activate the trigger. Then, use Event Rules Design to create the trigger. Although ERP 8.0 allows event rules to be attached to application events, this functionality is application specific. Table event rules provide embedded logic at the table level.

TCP/IP. Transmission Control Protocol/Internet Protocol. The original TCP protocol was developed as a way to interconnect networks using many different types of transmission methods. TCP provides a way to establish a connection between end systems for the reliable delivery of messages and data.

TCP/IP Service Port. Used by a particular server application to provide whatever service the server is designed to provide. The port number must be readily known so that an application programmer can request it by name.

TDA. See *Table Design Aid.*

Trigger. Allow you to attach default processing to a data item in the data dictionary. When that data item is used on an application or report, the trigger is invoked by an event associated with the data item. ERP 8.0 also has three visual assist triggers: calculator, calendar and search form.

Universal Resource Locator (URL). Names the address of a document on the Internet or an intranet. The following is an example of a URL:

http://www.jdedwards.com

This is J.D. Edwards Internet address.

Visual Assist. Forms that can be invoked from a control to assist the user in determining what data belongs in the control.

wchar_t. Internal type of a wide character. Used for writing portable programs for international markets.

Web Client. Any workstation that contains an internet browser. The web client communicates with the web server for ERP 8.0 data.

Web Server. Any workstation that contains the IServer service, SQL server, Java menus and applications, and Internet middleware. The web server receives data from the web client, and passes the request to the enterprise server. When the enterprise server processes the information, it sends it back to the web server, and the web server sends it back to the web client.

Workflow. According to the Workflow Management Coalition, workflow means "the automation of a business process, in whole or part, during which documents, information, or tasks are passed from one participant to another for action, according to a set of procedural rules."

World Wide Web. A part of the Internet that can transmit text, graphics, audio, and video. The World Wide Web allows clients to launch local or remote applications.

Z File. For store and forward (network disconnected) users, ERP 8.0 store and forward applications perform edits on static data and other critical information that must be valid to process an order. After the initial edits are complete, ERP 8.0 stores the transactions in work tables on the workstation. These work tables are called Z files. When a network connection is established, Z files are uploaded to the enterprise server and the transactions are edited again by a master business function. The master business function will then update the records in your transaction files.