

Administrator's Guide

*iPlanet Application Server Enterprise Connector
for CICS*

Version 6.0

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The iPlanet Application Server Enterprise Connector for CICS explains how to get started with, install, manage, and configure the iPlanet Application Server Enterprise Connector for CICS.

This preface contains information about the following topics:

- Prerequisites
- Supported Platforms
- System Requirements
- What's in This Guide
- Documentation Conventions
- Online Guide
- Related Information

Prerequisites

The *iPlanet Application Server Enterprise Connector for CICS Administrator's Guide* is written for system administrators who want to install, manage and configure the CICS connector.

This guide assumes you are familiar with the following topics:

- iPlanet Application Server Programming Concepts.
See the *iPlanet Application Server Enterprise Connector for CICS Developer's Guide* for more details.
- The Internet and the World Wide Web
- CICS and MVS Programming Concepts
- Java Programming Language

Supported Platforms

The iPlanet Application Server Enterprise Connector for CICS supports the following platforms:

Table 1 Platform Specifications

Vendor	Platform
Microsoft	Windows NT version 4.0 with Service Pack 5
Sun	SPARC running Solaris 2.6 or 8

System Requirements

To install the iPlanet Application Server for CICS, your system must have the following:

- iPlanet Application Server 6.0 SP1 installed
- iPlanet Unified Integration Framework 6.0 SP1 installed
- Available disk space: 200 MB for NT, 400 MB for Solaris
- Memory per CPU: 256MB minimum; 512MB recommended
- IBM CICS running on OS/390. MVS 5.22 and CICS 3.2 and above with current APARS.

What's in This Guide

The *iPlanet Application Server Enterprise Connector for CICS Administrator's Guide* provides the information you need to understand, set up, and administer all aspects of the iPlanet Application Server Enterprise Connector for CICS.

The following table lists a short summary of what each chapter covers.

See this chapter:	If you want to do this:
Chapter 1, "Overview"	Familiarize yourself with general concepts of the iPlanet Application Server Enterprise Connector for CICS.
Chapter 2, "Installation"	Install the connector on NT or Solaris.

See this chapter:	If you want to do this:
Chapter 3, “Installing the Mainframe Component”	Install the mainframe component of the CICS connector.
Chapter 4, “Managing Data”	Manage the data sources and data objects.
Chapter 5, “Configuring the Application”	Configure the system and pooling settings.
Appendix A, “Operating the TELCO Sample”	Install the TELCO Customer Service sample, based on CICS and DB2 for OS/390.

Documentation Conventions

File and directory paths are given in Windows format with backslashes separating directory names. For Unix versions, the directory paths are the same, except slashes should be substituted in place of backslashes.

This guide uses URLs of the form:

`http://server.domain/path/file.html`

In these URLs, *server* is the name of the server on which you run your application; *domain* is your Internet domain name; *path* is the directory structure on the server; and *file* is an individual filename. Italics items in URLs are placeholders.

This guide uses the following font conventions:

- The monospace font is used for sample code and code listings, API and language elements (such as function names and class names), file names, pathnames, directory names, and HTML tags.
- *Italic* type is used for book titles, emphasis, variables and placeholders, and words used in the literal sense.

Online Guide

You can find the *iPlanet Application Server Enterprise Connector for CICS Administrator’s Guide* online in PDF and HTML formats. To locate these files, use the following URL:

`http://docs.ipplanet.com/docs/manuals/`

Related Information

In addition to this guide, there is additional information available for administrators, end users, and developers. The following lists these documents:

- *iPlanet Application Server Enterprise Connector for CICS Developer's Guide*
- *iPlanet Web Server Developer's Guide*
- *iPlanet Application Server Administrator's Guide*
- *iPlanet Application Server Installation Guide*
- *iPlanet Application Server Overview Guide*
- *iPlanet Application Server Release Notes*
- *iPlanet Application Server Administrator's Guide*
- *iPlanet Application Builder User's Guide*
- *iPlanet Application Builder Installation Guide*
- *iPlanet Application Builder Release Notes*
- *iPlanet Unified Integration Framework Release Notes*
- *iPlanet Unified Integration Framework Developer's Guide*

Overview

The iPlanet Application Server Enterprise Connector for CICS is used for building and delivering scalable applications that integrate the application server with legacy CICS applications. The iPlanet Application Server Enterprise Connector for CICS enables communication between an end user and a remote CICS system. This chapter introduces the three-tier, web-based computing model and describes the basic connector concepts.

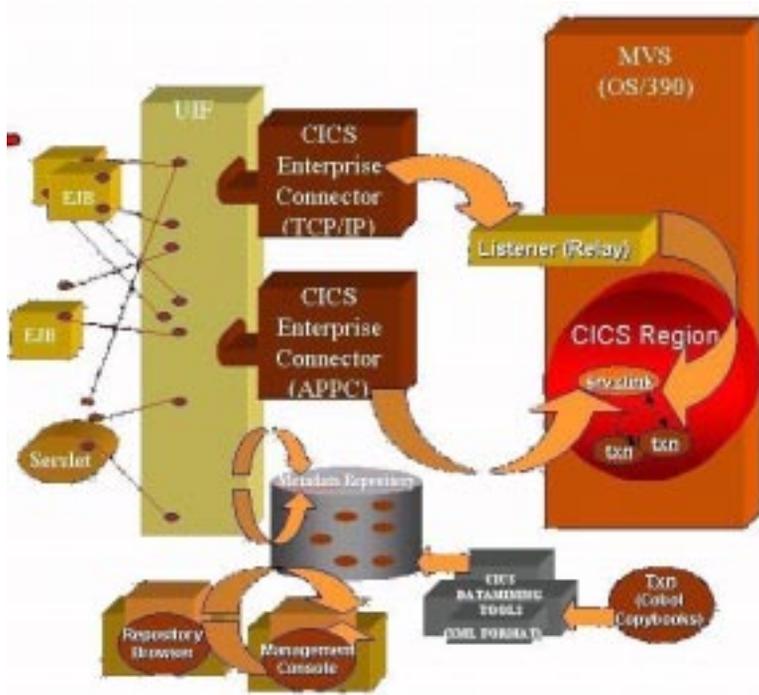
This chapter contains information about the following topics:

- Unified Integration Framework
- Three-tier Application Model
- Enterprise Connector Tools for CICS

Unified Integration Framework

The Unified Integration Framework (UIF) is an application programming framework that provides a single Application Programming Interface (API) to access different Enterprise Information Systems (EIS). A connector is developed for each EIS to allow communication between the UIF API and the EIS, see Figure 1-1. The UIF API is the only API necessary to access the EIS.

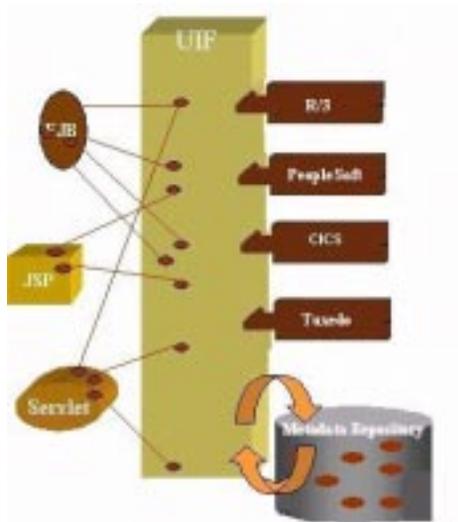
Figure 1-1 CICS Integration



The UIF enables development of server extensions that integrate with legacy CICS applications and systems, client-server applications, and third party Internet solutions. These extensions provide a consistent access layer to disparate EISs, dramatically reducing development effort. The framework provides support for features such as object pooling, distributed state and session management.

A generic data repository, also a part of the UIF, which is used to hold metadata parameters and other information about the EIS. For example, the metadata often describes the physical connection between systems, the data that is available, and methods you can use to process data. See Figure 1-2.

Figure 1-2 The Unified Integration Framework



Since EISs are implemented differently, the details for each EIS implementation differ.

UIF Services

The UIF is a component of the iPlanet Application Server. The iPlanet Application Server plays a prominent role in a three-tier application model. See the Three-tier Application Model for a description. The UIF mediates between the iPlanet Application Server application and the EIS tier, namely the data sources and databases.

The UIF provides an API to access the following services:

- Runtime
- Data Object Services
- Repository and Metadata Services

Runtime

The UIF runtime services supply core services for resource management, thread management, communication and life cycle management, and exception management. The UIF runtime services understand and interpret metadata repository contents.

Data Object Services

The Data Object Services implements universal data representation common to all connectors. See the *iPlanet Application Server Enterprise Connector for CICS Developer's Guide* for a description of data objects.

Repository and Metadata Services

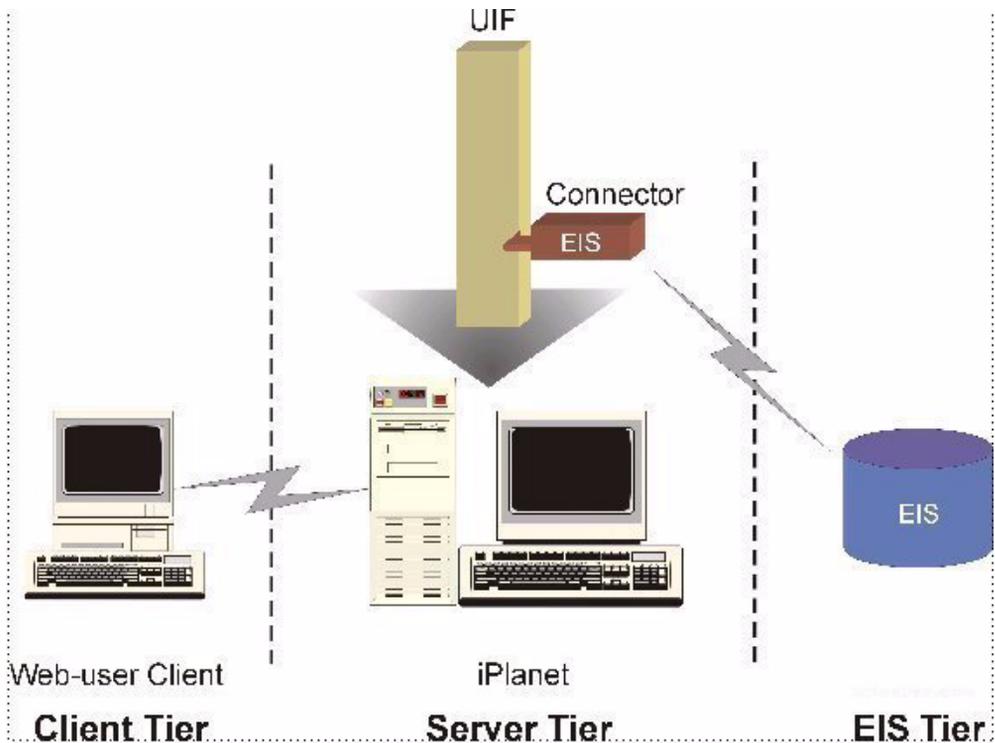
The UIF repository and metadata services model a persistent information hierarchy that supports datatype definitions, and inheritance. It also manages the instances and reuse of data objects from datatype definitions.

Three-tier Application Model

The machine and software involved are divided into the following three tiers:

- Client Tier
- Server Tier (iPlanet Application Server)
- EIS Tier

The connectors serve as an essential link allowing the server tier to communicate with the EIS tier, as shown in Figure 1-3. Communication between the application server and the EIS is facilitated by the UIF API. This layer of functionality resides as an added layer to the iPlanet Application Server, and enables data communication with diverse EISs in a seamless and uniform manner.

Figure 1-3 Three-tier Web-based Computer Model

Client Tier

The client tier is represented as the user interface. Requests for data originate here, represented by web browsers or rich clients (such as a Java applet).

Server Tier

The server tier is represented by an application server, and optionally a web server such as the iPlanet Web Server Enterprise Edition. The server tier houses the business logic (your application servlets and/or Enterprise Java Beans), and provides scalability, high availability load balancing, and integration with a variety of data sources.

EIS Tier

The EIS tier is represented by Enterprise Resource Planning (ERP) systems or other EIS data systems such as CICS.

Enterprise Connector Tools for CICS

The Enterprise Connector Tools are as follows:

- Management Console - includes User Mapping and Data Mining Tools
 - User Mapping - allows you to map user IDs for access into the EIS, and to edit and manage data sources.
 - Data Mining Tool - includes capabilities such as determining the available functions in the EIS, translating and reformatting data, and loading data into the data repository.
- Repository Browser - allows you to browse data in the repository. You can view the available functions (input and output parameters) for the EIS.

The Management Console

The iPlanet Application Server Enterprise Connector for CICS has an interactive Management Console Tool. The Management Console is used by the administrator to do the following:

- data mine function objects and data types from the EIS metadata, and populate the repository with these data mined definitions
- administer repository contents for creating new data sources, editing settings, and altering pooling settings
- populate user mapping tables in the data repository

For more information on the Management Console, see Chapter 4.

The Repository Browser

The Repository Browser allows the user to explore the repository contents. While not used for editing, however, the Repository Browser provides import, export, and delete actions on repository nodes.

Repository contents are modified/populated using the *import* function. This feature is available as a browser function and as a command line tool and imports XML under a specified repository node. Additionally, the export function is available as a browser function and as a command line tool, and exports a selected subtree as an XML document. For more information on the Repository Browser, see Chapter 4.

Installation

This chapter describes how to install, start, and uninstall the iPlanet Application Server Enterprise Connector for CICS.

This chapter contains information about the following topics:

- Software Prerequisites
- Hardware Requirements
- Installing on Windows NT
- Uninstalling from Windows NT
- Installing on Solaris
- Uninstalling from Solaris
- Upgrading or Re-installing Issues
- Post Installation Issues

Software Prerequisites

The following software prerequisites are necessary to install the iPlanet Application Server Enterprise Connector for CICS:

- the iPlanet Application Server 6.0 SP1 must be installed
- the iPlanet Application Server Unified Integration 6.0 SP1 must be installed
- CICS software on the mainframe must be installed
- One of the following web browsers should be installed:
 - Netscape Communicator 4.5

- Microsoft Internet Explorer 4.0 (NT only)
- A web server, such as iPlanet Web Server (iWS) and iPlanet Application Server 6.0 SP1, must reside on the same system on which you are installing the connector.

CAUTION The CICS connector operates with the iPlanet Application Server, therefore it must be installed in the same directory in which the iPlanet Application Server is installed.

Supported Versions of CICS

The iPlanet Application Server Enterprise Connector for CICS supports IBM CICS running on OS/390. The required releases are MVS 5.2.2 and CICS ESA 4.1 and above with current APARS.

iPlanet Application Server Enterprise Connector for CICS includes installation and configuration for both TCP/IP and SNA (APPC) protocols.

Hardware Requirements

The following hardware requirements are necessary for installing the connectors.

Computers and Operating Systems

- One of the following operating systems:
 - Microsoft Windows NT version 4.0 with Service Pack 5
 - Sun SPARC running Solaris 2.6 or Solaris 8
- Memory Per CPU: 256 MB minimum; 512 MB recommended
- Available disk space: 200 MB for NT, 400 MB for Solaris

Preparing to Install

Before installing the iPlanet Application Server Enterprise Connector for CICS complete the following steps:

- Verify the CICS Server connectivity.
- Stop the iPlanet Application Server if it is running. Without stopping the application server, the installation program may not be able to overwrite files currently in use.
- Read the *iPlanet Application Server Enterprise Connector for CICS Release Notes* for any last minute updates.

Installing on Windows NT

The following describes the procedures for installing and uninstalling the CICS Enterprise Connector on Windows NT.

You must be logged in to Windows NT as the administrator to install the CICS Enterprise Connector.

To Install on Windows NT

1. Read the README.txt file on the CD-ROM.
2. Copy `NT/inscics.zip` from the CD-ROM into a temporary local directory.
3. Unzip `inscics.zip`, then run `setup.exe`.
4. Read the Welcome message and click on the Next button. See Figure 2-1.
5. Follow the instructions on the screen to progress through the introduction.

Figure 2-1 Welcome Message

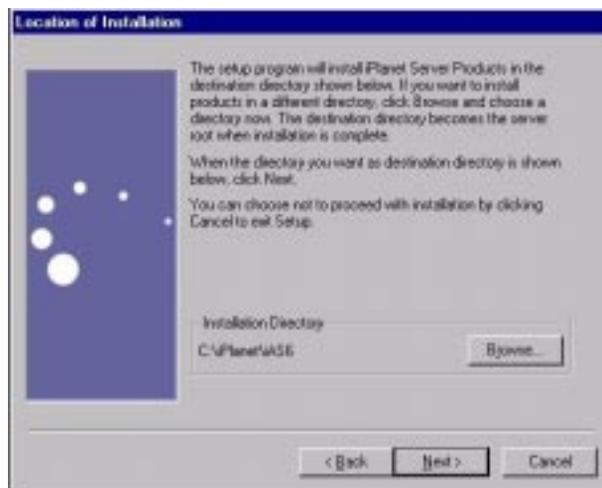


6. Thoroughly read and understand the licensing information before installing, and accept the license agreement. See Figure 2-2.

Figure 2-2 Software License Agreement



7. Choose your installation directory, then click Next. See Figure 2-3.

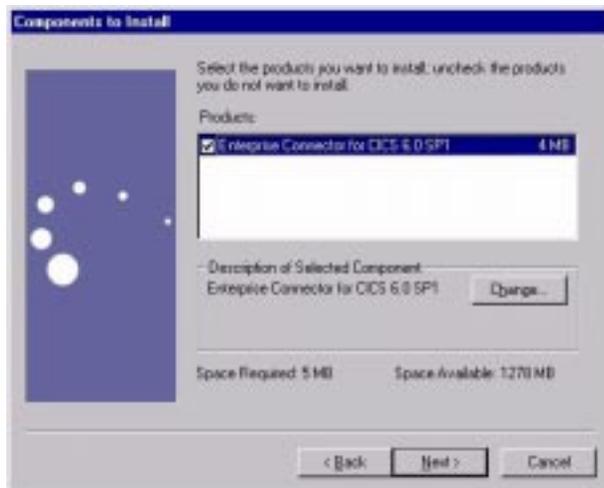
Figure 2-3 Location of Installation

NOTE You must install the iPlanet Application Server Enterprise Connector for CICS in the same directory as where you installed iPlanet Application Server and UIF.

8. Click Next to continue.

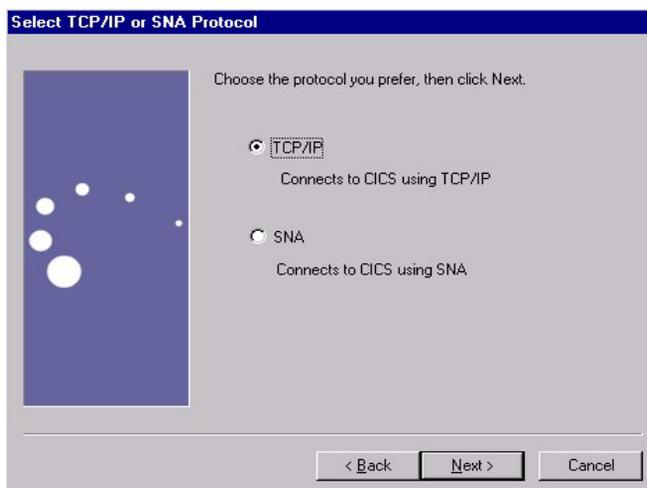
Select the Enterprise Connector for CICS 6.0 check box. See Figure 2-4.

Figure 2-4 Components to Install



9. Choose the protocol you prefer, either TCP/IP or SNA protocol, by marking the appropriate button, and then click Next. See Figure 2-5.

NOTE See Chapter 3 “Installing the Mainframe Component” for a description of alternatives to connect the CICS Enterprise Connector to the mainframe.

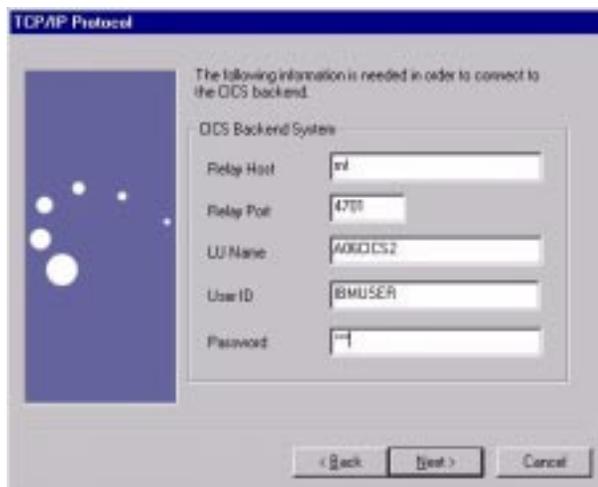
Figure 2-5 Select TCP/IP or SNA Protocol

Continue with Step 10 if you selected TCP/IP protocol or continue with Step 11 if you selected the SNA protocol.

10. Type in your CICS Backend System definition for TCP/IP and click Next.

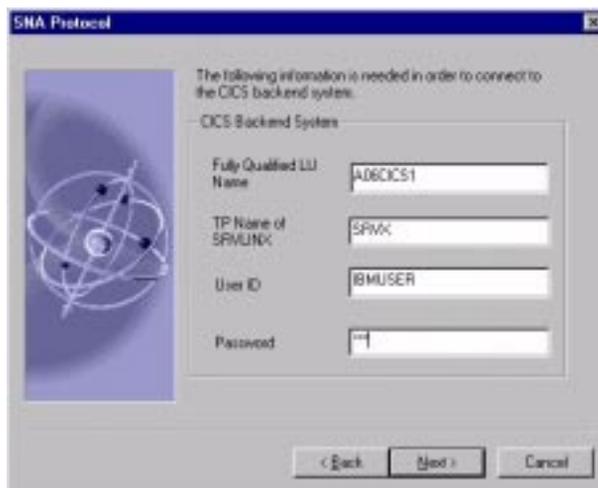
The Configuration Summary shown in Figure 2-8 is displayed.

Figure 2-6 TCP/IP Protocol

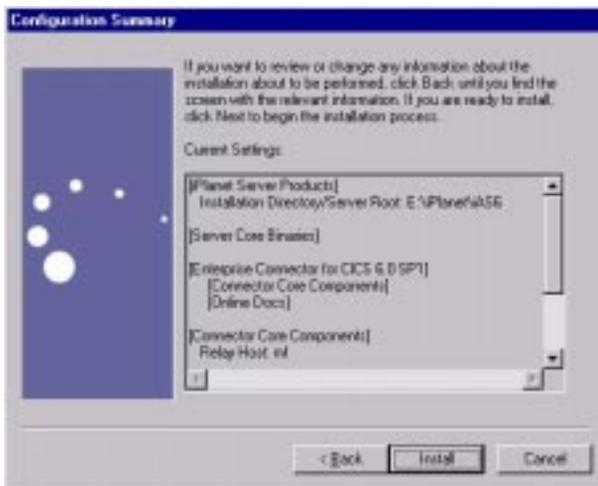


11. Enter the CICS Backend System information for APPC and click Next.
The Configuration Summary shown in Figure 2-8 is displayed.

Figure 2-7 SNA Protocol

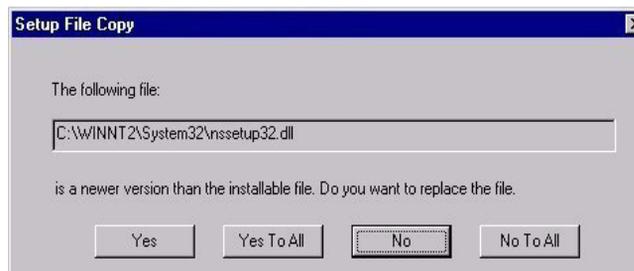


12. Review the configuration summary and click install if the information is correct.

Figure 2-8 Configuration Summary

13. Click Install if the information is correct.
14. (Optional) Figure 2-9 displays the possible warning window(s) that can appear if the installer detects that the CICS Enterprise Connector is already installed. Choose Yes to overwrite the existing adapter type and all sample data source definitions shipped with the CICS Enterprise Connector. User defined data sources are not overwritten. Select No if you are simply adding another iPlanet Application Server instance to an existing cluster.

Confirm your decision.

Figure 2-9 Setup File Copy

CAUTION You must restart your computer after you complete the installation.

15. After installing the CICS Enterprise Connector on Windows NT, proceed with the Mainframe component installation as described in Chapter 3.

If you selected a direct APPC connection from NT, SNA/APPC on NT must be configured as explained in the following section.

SNA/APPC Configuration for Windows NT

A sample configuration file for IBM Personal Communications (PCOMM) product for Windows NT is listed, and supplied in:

```
<instdir>\APPS\adapters\CICS\backend\appconfig.ACG
```

Load this file into your PCOMM SNA Node Configuration as a basis for changes and adaptations to your SNA/APPC setup.

Code Example 2-1 PCOMM LU6.2 Configuration Definitions on a PC

```
*TSTue Mar 7 10:57:58 2000
NODE=(
  ANYNET_SUPPORT=NONE
  CP_ALIAS=SHMUELNT
  DEFAULT_PREFERENCE=NATIVE
  DISCOVERY_SUPPORT=NO
  FQ_CP_NAME=P390.SHMUELNT
  NODE_ID=05D00000
  NODE_TYPE=END_NODE
  REGISTER_WITH_CDS=1
  REGISTER_WITH_NN=1
)
PORT=(
  PORT_NAME=LANX_04
  ACTIVATION_DELAY_TIMER=30
  DELAY_APPLICATION_RETRIES=1
  DLC_DATA=00000000000004
  DLC_NAME=LAN
  IMPLICIT_CP_CP_SESS_SUPPORT=1
  IMPLICIT_DEACT_TIMER=0
  IMPLICIT_DSPU_SERVICES=NONE
  IMPLICIT_HPR_SUPPORT=1
  IMPLICIT_LIMITED_RESOURCE=NO
  IMPLICIT_LINK_LVL_ERROR=0
  LINK_STATION_ROLE=NEGOTIABLE
  MAX_ACTIVATION_ATTEMPTS=10
  MAX_IFRM_RCVD=8
  MAX_RCV_BTU_SIZE=32767
  PORT_TYPE=SATF
  RETRY_LINK_ON_DISCONNECT=1
  RETRY_LINK_ON_FAILED_START=1
```

Code Example 2-1 PCOMM LU6.2 Configuration Definitions on a PC *(Continued)*

```

RETRY_LINK_ON_FAILURE=1
PORT_LAN_SPECIFIC_DATA=(
    ACK_DELAY=100
    ACK_TIMEOUT=3000
    ADAPTER_NUMBER=9999
    BUSY_STATE_TIMEOUT=60
    IDLE_STATE_TIMEOUT=30
    LOCAL_SAP=04
    MAX_RETRY=10
    OUTSTANDING_TRANSMITS=16
    POLL_TIMEOUT=3000
    POOL_SIZE=16
    REJECT_RESPONSE_TIMEOUT=30
    TEST_RETRY_INTERVAL=8
    TEST_RETRY_LIMIT=5
    XID_RETRY_INTERVAL=8
    XID_RETRY_LIMIT=5
)
)
LINK_STATION=(
    LS_NAME=LINK0000
    ACTIVATE_AT_STARTUP=1
    ACTIVATION_DELAY_TIMER=-1
    ADJACENT_NODE_TYPE=LEARN
    AUTO_ACTIVATE_SUPPORT=0
    CP_CP_SESS_SUPPORT=1
    DEFAULT_NN_SERVER=0
    DELAY_APPLICATION_RETRIES=0
    DEST_ADDRESS=42000000006604
    DISABLE_REMOTE_ACT=0
    DSPU_SERVICES=NONE
    ETHERNET_FORMAT=1
    HPR_LINK_LVL_ERROR=0
    HPR_SUPPORT=0
    INHERIT_PORT_RETRY_PARAMS=1
    LIMITED_RESOURCE=NO
    LINK_DEACT_TIMER=0
    LINK_STATION_ROLE=USE_ADAPTER_DEFAULTS
    MAX_ACTIVATION_ATTEMPTS=-1
    MAX_IFRM_RCVD=0
    MAX_SEND_BTU_SIZE=32767
    NODE_ID=05D00000
    PORT_NAME=LANX_04
    RETRY_LINK_ON_DISCONNECT=0
    RETRY_LINK_ON_FAILED_START=0
    RETRY_LINK_ON_FAILURE=0
    SOLICIT_SSCP_SESSION=0
    TG_NUMBER=0
    USE_DEFAULT_TG_CHARS=1
)
)
DLUR_DEFAULTS=(
    DEFAULT_PU_NAME=SHMUELNT
    DLUS_RETRY_LIMIT=65535
    DLUS_RETRY_TIMEOUT=5
)

```

Code Example 2-1 PCOMM LU6.2 Configuration Definitions on a PC *(Continued)*

```

)
MODE= (
    MODE_NAME=BLANK
    AUTO_ACT=0
    COMPRESSION=PROHIBITED
    COS_NAME=#CONNECT
    DEFAULT_RU_SIZE=1
    MAX_NEGOTIABLE_SESSION_LIMIT=256
    MAX_RU_SIZE_UPPER_BOUND=1024
    MIN_CONWINNERS_SOURCE=128
    PLU_MODE_SESSION_LIMIT=256
    RECEIVE_PACING_WINDOW=3
)
MODE= (
    MODE_NAME=#BATCH
    AUTO_ACT=0
    COMPRESSION=PROHIBITED
    COS_NAME=#BATCH
    DEFAULT_RU_SIZE=0
    MAX_NEGOTIABLE_SESSION_LIMIT=256
    MAX_RU_SIZE_UPPER_BOUND=2048
    MIN_CONWINNERS_SOURCE=128
    PLU_MODE_SESSION_LIMIT=256
    RECEIVE_PACING_WINDOW=20
)
MODE= (
    MODE_NAME=#BATCHSC
    AUTO_ACT=0
    COMPRESSION=PROHIBITED
    COS_NAME=#BATCHSC
    DEFAULT_RU_SIZE=1
    MAX_NEGOTIABLE_SESSION_LIMIT=256
    MAX_RU_SIZE_UPPER_BOUND=2048
    MIN_CONWINNERS_SOURCE=128
    PLU_MODE_SESSION_LIMIT=256
    RECEIVE_PACING_WINDOW=3
)
MODE= (
    MODE_NAME=#INTER
    AUTO_ACT=0
    COMPRESSION=PROHIBITED
    COS_NAME=#INTER
    DEFAULT_RU_SIZE=1
    MAX_NEGOTIABLE_SESSION_LIMIT=256
    MAX_RU_SIZE_UPPER_BOUND=4096
    MIN_CONWINNERS_SOURCE=128
    PLU_MODE_SESSION_LIMIT=256
    RECEIVE_PACING_WINDOW=20
)
MODE= (
    MODE_NAME=#INTERSC
    AUTO_ACT=0
    COMPRESSION=PROHIBITED
    COS_NAME=#INTERSC

```

Code Example 2-1 PCOMM LU6.2 Configuration Definitions on a PC *(Continued)*

```

        DEFAULT_RU_SIZE=1
        MAX_NEGOTIABLE_SESSION_LIMIT=256
        MAX_RU_SIZE_UPPER_BOUND=2048
        MIN_CONWINNERS_SOURCE=128
        PLU_MODE_SESSION_LIMIT=256
        RECEIVE_PACING_WINDOW=7
    )
MODE=(
    MODE_NAME=APPCMODE
    AUTO_ACT=0
    COMPRESSION=PROHIBITED
    COS_NAME=#CONNECT
    DEFAULT_RU_SIZE=1
    MAX_NEGOTIABLE_SESSION_LIMIT=128
    MAX_RU_SIZE_UPPER_BOUND=4096
    MIN_CONWINNERS_SOURCE=16
    PLU_MODE_SESSION_LIMIT=32
    RECEIVE_PACING_WINDOW=1
)
MODE=(
    MODE_NAME=QPCSUPP
    AUTO_ACT=0
    COMPRESSION=PROHIBITED
    COS_NAME=#CONNECT
    DEFAULT_RU_SIZE=1
    MAX_NEGOTIABLE_SESSION_LIMIT=52
    MAX_RU_SIZE_UPPER_BOUND=1024
    MIN_CONWINNERS_SOURCE=26
    PLU_MODE_SESSION_LIMIT=52
    RECEIVE_PACING_WINDOW=2
)
MODE=(
    MODE_NAME=QSERVER
    AUTO_ACT=0
    COMPRESSION=PROHIBITED
    COS_NAME=#CONNECT
    DEFAULT_RU_SIZE=1
    MAX_NEGOTIABLE_SESSION_LIMIT=64
    MAX_RU_SIZE_UPPER_BOUND=1024
    MIN_CONWINNERS_SOURCE=0
    PLU_MODE_SESSION_LIMIT=64
    RECEIVE_PACING_WINDOW=7
)
MODE=(
    MODE_NAME=SNASVCMG
    AUTO_ACT=0
    COMPRESSION=PROHIBITED
    COS_NAME=SNASVCMG
    DEFAULT_RU_SIZE=0
    MAX_NEGOTIABLE_SESSION_LIMIT=2
    MAX_RU_SIZE_UPPER_BOUND=512
    MIN_CONWINNERS_SOURCE=1
    PLU_MODE_SESSION_LIMIT=2
    RECEIVE_PACING_WINDOW=1
)

```

Code Example 2-1 PCOMM LU6.2 Configuration Definitions on a PC *(Continued)*

```

)
PARTNER_LU=(
    FQ_PLU_NAME=P390.A06CICS2
    ADJACENT_CP_NAME=P390.P390SSCP
    CONV_SECURITY_VERIFICATION=1
    MAX_MC_LL_SEND_SIZE=32767
    PARALLEL_SESSION_SUPPORT=1
    PARTNER_LU_ALIAS=A06CICS2
    PREFERENCE=USE_DEFAULT_PREFERENCE
)
CPIC_SIDE_INFO=(
    SYM_DEST_NAME=SRVX
    CONVERSATION_SECURITY_TYPE=NONE
    MODE_NAME=APPCMODE
    PARTNER_LU_NAME=P390.A06CICS2
    TP_NAME=SRVX
    TP_NAME_TYPE=APPLICATION_TP
)
ADJACENT_NODE=(
    FQ_CP_NAME=P390.P390SSCP
    LU_ENTRY=(
        FQ_LU_NAME=P390.A06CICS2
    )
)
)
SHARED_FOLDERS=(
    CACHE_SIZE=256
)
)
VERIFY=(
    CFG_MODIFICATION_LEVEL=13
    CFG_VERSION_LEVEL=1
)
)

```

Initializing the SNA/APPC Protocol Stack in Windows NT

1. Select Start > Programs > IBM Personal Communications > Administrative and PD Aids > SNA Node Operations.
2. Select Operations > Start Node.
The Personal Communications Node Operations window appears.
3. Select Operations > CNOS Initialize.

Uninstalling from Windows NT

This procedure is used to uninstall the iPlanet Application Server Enterprise Connector for CICS from Windows NT.

To Uninstall from Windows NT

1. Select Start > Programs - iPlanet Application Server 6.0 > Uninstaller.

The iPlanet Uninstall window appears. See Figure 2-10.

Figure 2-10 iPlanet Uninstall



2. Deselect all components *except* the Enterprise Connector for CICS 6.0.
3. Click Sub Components.

The uninstaller checks for dependencies between subcomponents and the main component. If you try to deselect a component and its subcomponent are toggled on, a warning message appears.

Deselecting the CICS Enterprise Connector

Deselect items in the following order:

1. Deselect Netscape Server Product Core components.
2. Deselect Administration Services and Netscape Directory Suite.
3. Deselect iPlanet Application Server 6.0.

To Deselect the iPlanet Application Server

1. Deselect Application Server 6.0 core binaries.
2. Deselect Web Connector Plug-in component.
3. Deselect Administrator's component.
4. Deselect Deployment Manager component.
5. Deselect core Server component.

Click the Continue button to return to the main uninstall menu.

CAUTION If you do not follow the above mentioned order of deselections, alert messages are displayed and you may not be able to deselect the desired option.

6. Click Uninstall.

The Uninstall message is displayed. See Figure 2-11.

Figure 2-11 Uninstall



7. Click OK to complete the uninstallation procedure.

The Enterprise Connector for CICS 6.0 has been uninstalled. Some files may remain. Check for these files at the location listed and manually remove them.

Installing on Solaris

The following is the installation process for the iPlanet Application Server Enterprise Connector for CICS on a Solaris operating system.

To ensure that you have everything necessary to complete the installation, review this section before starting the installation.

Pre-installation

1. Insert the CICS Enterprise Connector Install CD-ROM into the CD-ROM drive.
2. Mount the CD-ROM, for example, `/cdrom/cdrom0`.
3. Read the README.txt file on the CD-ROM.

To Install on Solaris

1. Copy the `Solaris/inscics.tar` file from the CD-ROM into a temporary local directory.

2. Untar the `inscics.tar` file.

For example: `tar -xvf inscics.tar`

3. Run the `./setup` command from the `inscics` directory

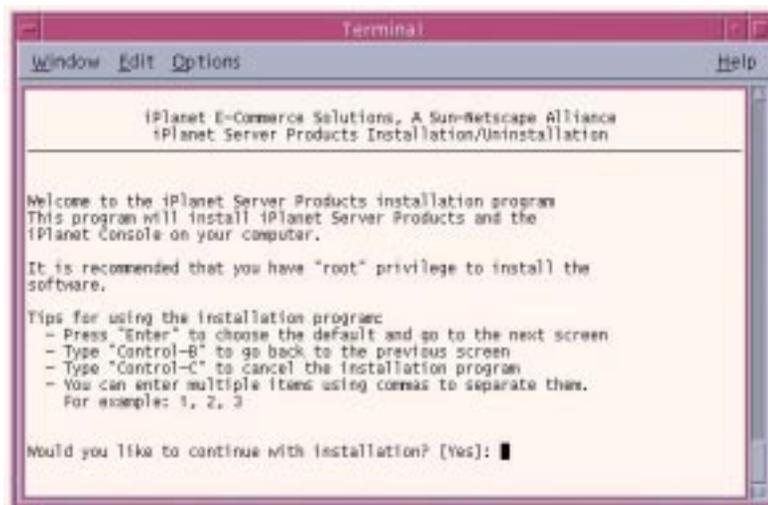
Follow the instructions of the installation program. During installation, press the following key sequences for:

CTRL+B to back up to the previous screen.

CTRL+C to cancel the installation program. This results in an incomplete installation. To install again, rerun the installation program from the beginning.

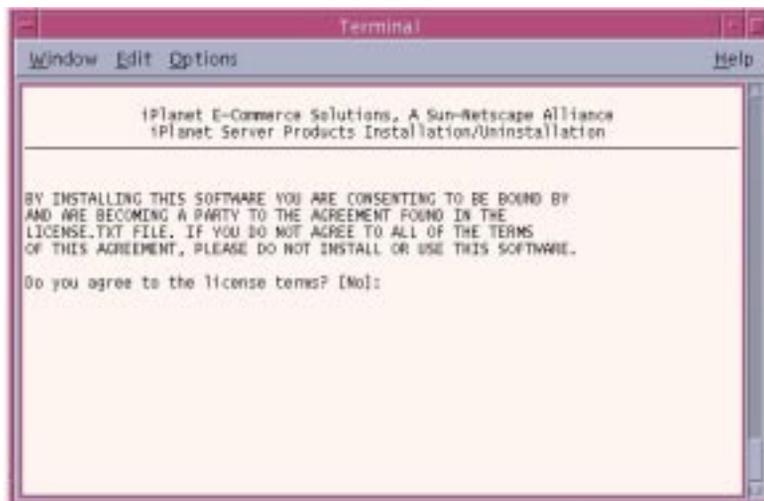
4. Figure 2-12 is displayed. Either press enter or type Yes to continue.

Figure 2-12 Welcome



5. Enter Yes and the License message appears. See Figure 2-13.

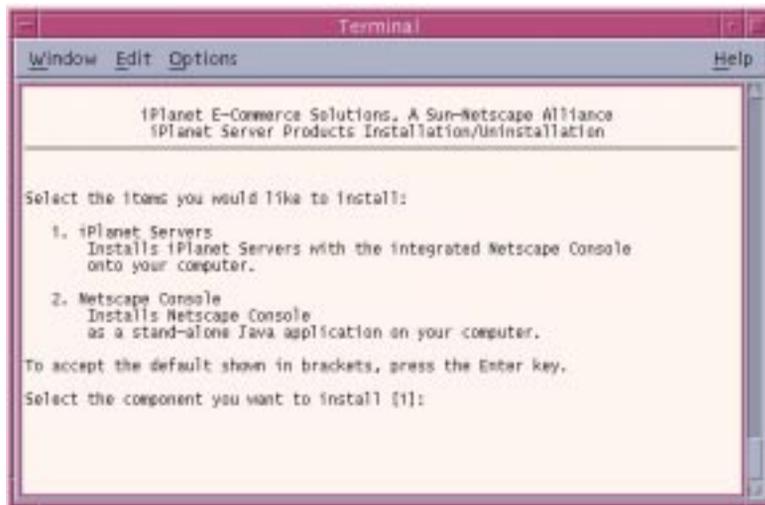
Figure 2-13 License



6. Thoroughly read and understand the licensing information before installing and then enter Yes.

The Selection message appears. See Figure 2-14.

Figure 2-14 Selection

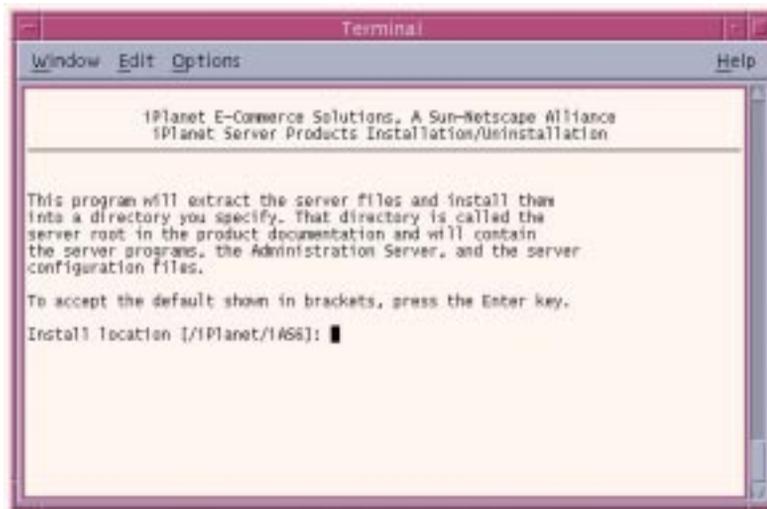


7. Press Enter.

NOTE The iPlanet Application Server must already be installed on your system. You must perform this step to proceed with the connector installation.

The Location message appears. See Figure 2-15.

Figure 2-15 Location



8. To accept the default shown in the brackets, press Enter.

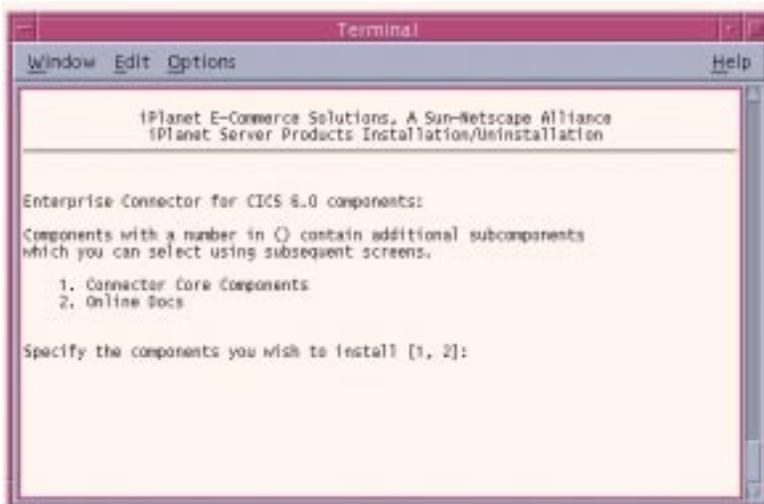
Otherwise, enter in the iPlanet Application Server installation directory, and then press Enter.

The Components message appears. See Figure 2-16.

Figure 2-16 Components

9. Press Enter.

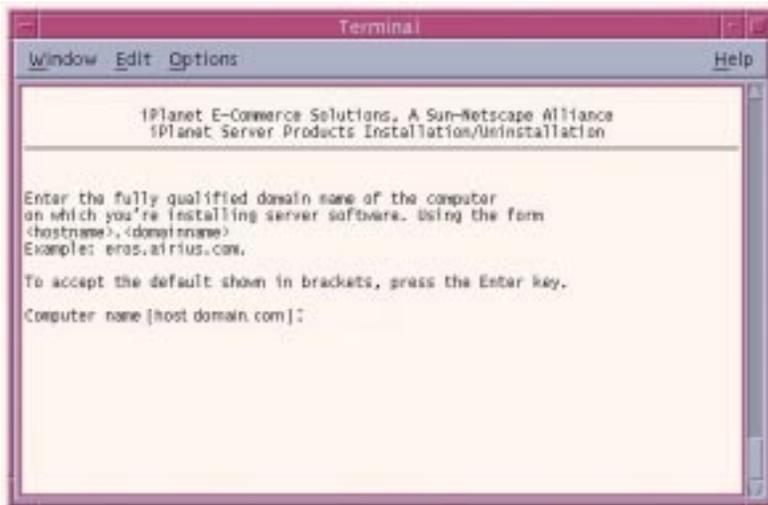
The Subcomponents message appears. See Figure 2-17.

Figure 2-17 Subcomponents

10. Press Enter.

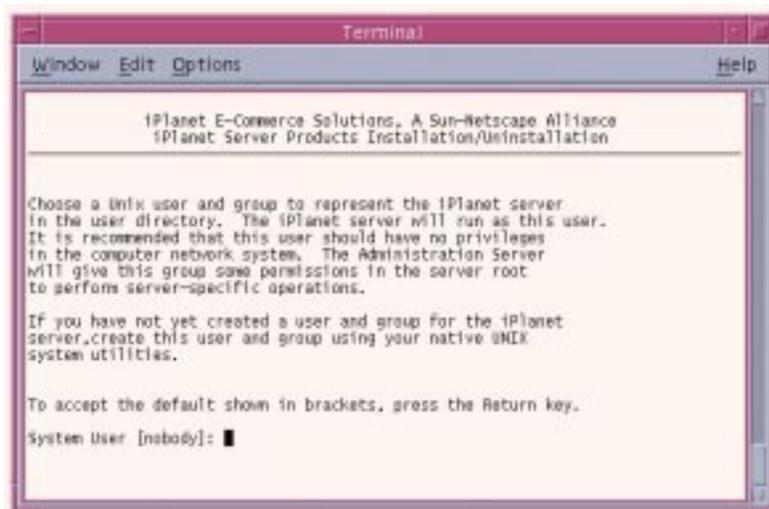
The Domain Name message appears. See Figure 2-18.

Figure 2-18 Domain Name



11. Click Enter to accept the default or enter another name `<host.domain.com>`.

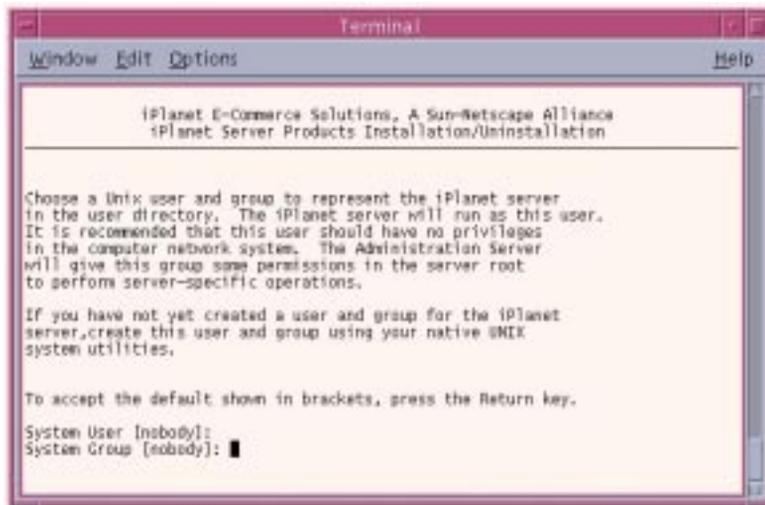
The System User message appears. See Figure 2-19.

Figure 2-19 System User

12. Enter in a System User, or accept the default shown in brackets, and press Enter.

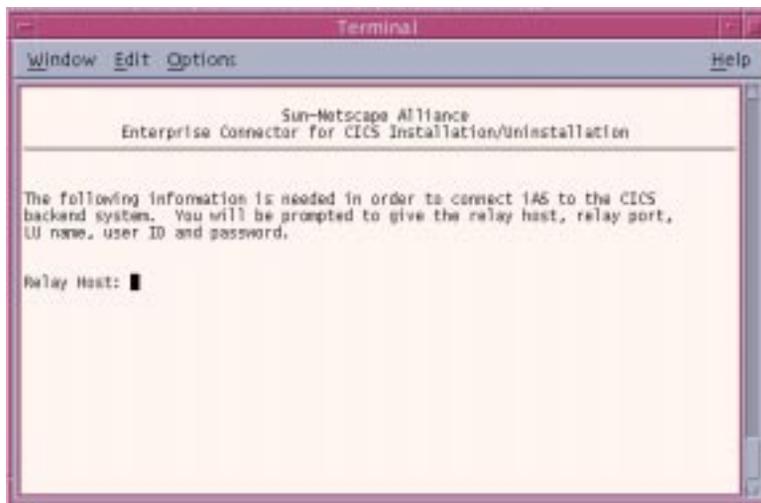
The System Group message appears. See Figure 2-20.

Figure 2-20 System Group



13. Enter in a System Group, or accept the default shown in brackets, and press Enter.

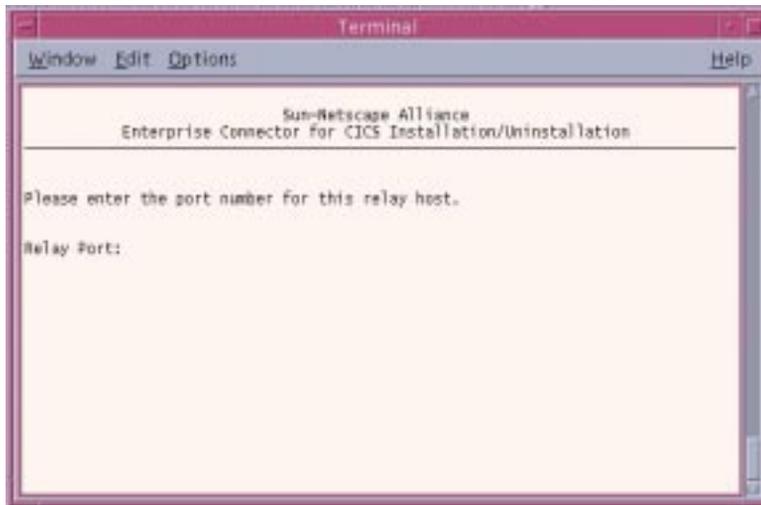
The Relay Host message appears. See Figure 2-21.

Figure 2-21 Relay Host

NOTE The following steps are concerned with information from the mainframe.

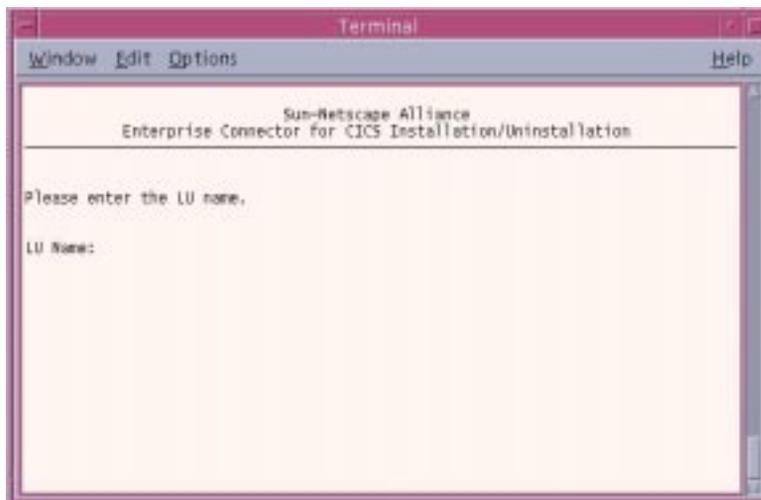
14. Type in the Mainframe TCP/IP Host name and press Enter.
The Relay Port message appears. See Figure 2-22.

Figure 2-22 Relay Port



15. Type in the Relay Port, and press Enter.

The LU (logical unit) message appears. See Figure 2-23.

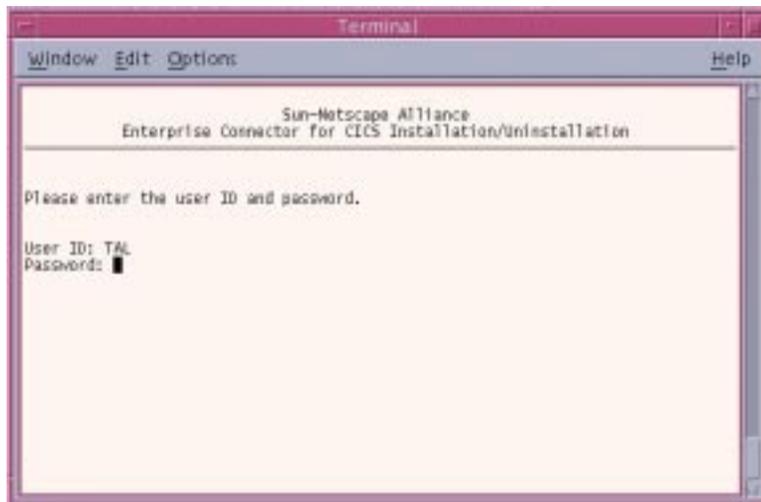
Figure 2-23 Logical Unit

16. Enter the LU name and press Enter.

The LU name is the VTAM application LU name for CICS.

The User ID and Password screen appears. See Figure 2-24.

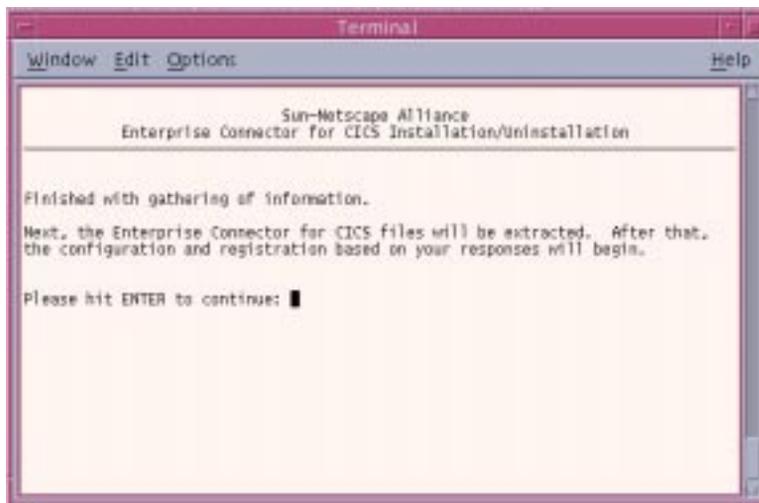
Figure 2-24 User ID and Password



17. Type in the User ID and Password, and press Enter.

This must be a valid User ID and Password pair as defined in the CICS system.

The Final installation screen appears. See Figure 2-25.

Figure 2-25 Final

18. Press Enter to continue.

A Work in Progress screen appears as the connector and related files are installed. When finished, you are instructed to restart all iPlanet Application Server engines before running any sample application.

19. Restart iPlanet Application Server engines.

To restart the iPlanet Application Server engines execute the following script:

```
<instdir>/ias/bin/KIVAes.sh stop
<instdir>/ias/bin/KIVAes.sh start
```

20. Continue with Chapter 3, “Installing the Mainframe Component”.

Uninstalling from Solaris

This procedure is used to uninstall iPlanet Application Server Enterprise Connector for CICS from Solaris.

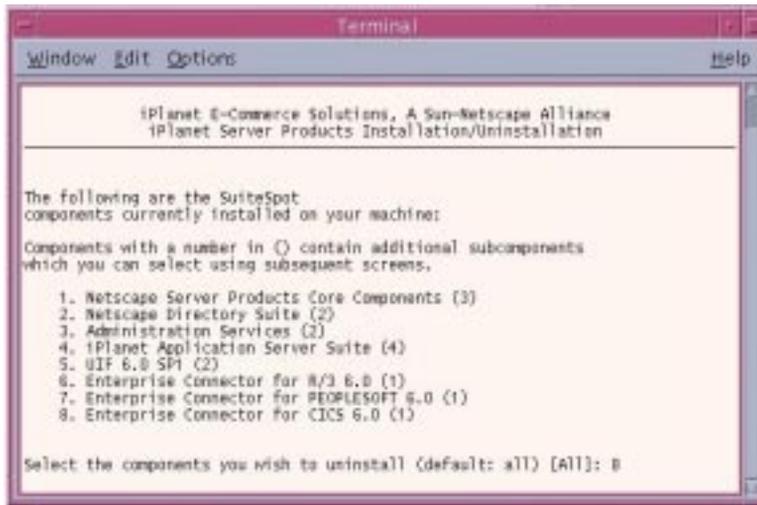
To Uninstall from Solaris

1. Go to the installation directory `/user/iplanet/ias6` and enter the following command:

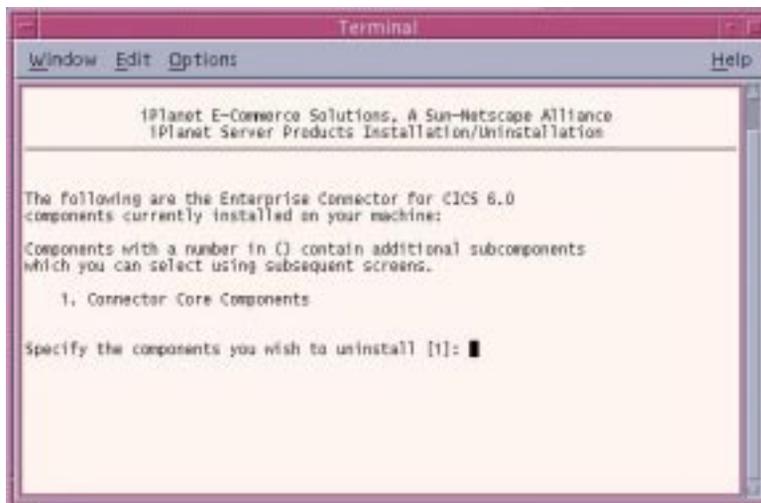
```
./uninstall
```

A list of uninstall component options appears. See Figure 2-26.

Figure 2-26 Uninstall Component Options

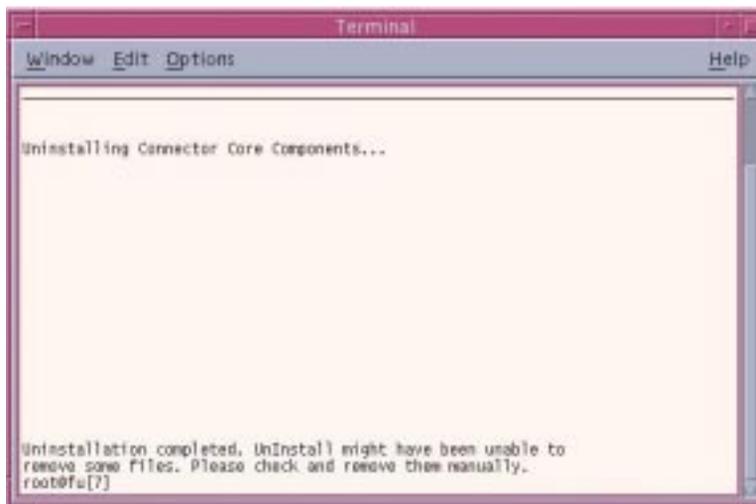


2. Select the specific product components you want to uninstall and click Enter.
The Uninstall Subcomponents message appears. See Figure 2-27.

Figure 2-27 Uninstall Subcomponents

3. Press Enter.

The Uninstalling message appears. See Figure 2-28.

Figure 2-28 Uninstalling

The Enterprise Connector for CICS 6.0 SP1 has been uninstalled. Some files may remain. Check for these files and manually remove them.

Upgrading or Re-installing Issues

If upgrading an earlier version or reinstalling the current version of the CICS Enterprise Connector, the installation procedure overwrites the currently installed files. Uninstalling the current version is not required.

The Uninstaller removes common files in multi-connector installation. When uninstalling one of several connectors, such as R/3, PeopleSoft, or CICS, the common directories /ias/APPS/console and /ias/APPS/ecu may be deleted. You must copy these directories back to APPS directory from /ias/APPS/UIF backup for the CICS connector to function correctly. Installation of multiple enterprise connectors for multiple EISs (R/3, Tuxedo, and PeopleSoft) on the same iPlanet Application Server is allowed.

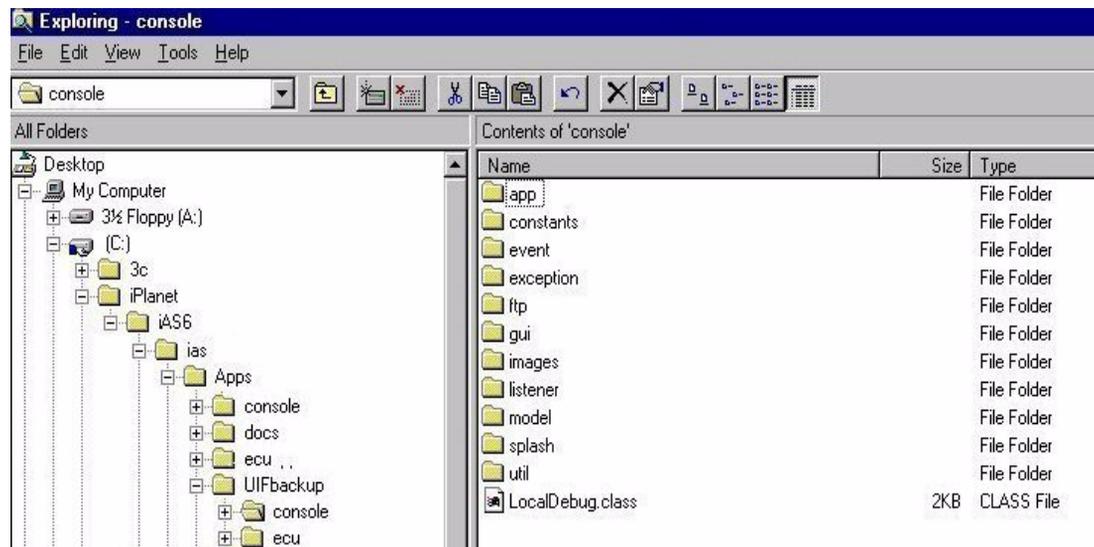
NOTE To avoid problems with overwriting files in use, stop the iPlanet Application Server before installing any new software. Always backup the current files prior to installation including the UIF Repository content.

To Uninstall a Connector on Windows NT

If you want to uninstall a connector from a Windows NT machine that has more than one connector installed, perform the following tasks.

1. Uninstall the connector. Refer to Chapter 2 in the Administrator's Guide.

During the uninstallation procedure the connector files shown in the right pane, see Figure 2-29, are removed from the iPlanet/iAS6/ias directory and moved to the UIFbackup/console directory. The connector files need to be copied back to their original location.

Figure 2-29 Uninstalling Connector

2. Copy the console specific directories, the top level directory and the connector specific directories to the ias/Apps/console for the following folders:
 - o constants
 - o exceptions
 - o ftp
 - o gui
 - o model
3. All the other directories, with all their included files, and the LocalDebug.class should be copied back.
4. Copy the following connector files to the console directory:
 - o Appltab
 - o ldobuffer.dll.

To Uninstall from Solaris

If you want to uninstall an Enterprise Connector from a Solaris machine that has more than one connector installed, perform the following tasks.

1. Uninstall the connector. Refer to Chapter 2 in the Administrator's Guide.

During the uninstallation procedure the connector files are removed from the `iPlanet/iAS6/ias` directory and moved to the `UIFbackup/console` directory. The connector files need to be copied back to their original location.
2. Copy the console specific directories, the top level directory and the connector specific directories to the `ias/APPS/console` for the following folders:
 - o constants
 - o exceptions
 - o ftp
 - o gui
 - o model
3. All the other directories, with all their included files, and the `LocalDebug.class` should be copied back.

Post Installation Issues

The following issues are described:

- Activating the Samples through NT or Solaris
- Copying Files in Webless Installation

Activating the Samples through NT or Solaris

After installing the CICS Enterprise Connector you can verify that your installation succeeded and run the CICS samples provided.

For more information on how to activate and run CICS samples, see Chapter 4 of the *iPlanet Application Server Enterprise Connector for CICS Developer's Guide*.

Copying Files in Webless Installation

In a webless installation, the web server and iPlanet Application Server reside on separate machine. In this configuration mode, the iPlanet Application Server Enterprise Connector for CICS installation procedure does not automatically copy the `index.html` file pertaining to connector samples to web server document root directory.

To run the samples shipped with the iPlanet Application Server Enterprise Connector for CICS, an `index.html` file must be copied manually from the iPlanet Application Server instance to web server instance.

To Copy Files to Run the Program Samples

1. Create the `cicsSamples` directory under the web server document root directory.

For example, `<iWS installdir>/docs/cicsSamples`.

2. Copy the `index.html` file from `<iASrootdir>/ias/APPS/adapters/htmldocs/cics/cicsSamples` directory to `<iWS installdir>/docs/cicsSamples` directory on web server machine.

Installing the Mainframe Component

After you install the iPlanet Application Server Enterprise Connector for CICS you need to install the mainframe component.

This chapter describes the following topics:

- Overview
- Installing and Configuring CICS
- Installing and Configuring the Relay
- Installing the PhoneBook Application

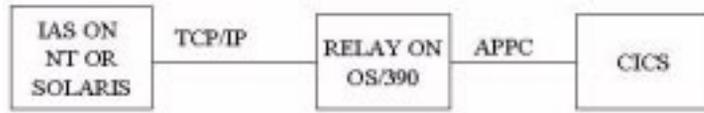
Overview

You can connect the CICS Connector to the IBM mainframe in one of the following ways:

- via TCP/IP

This method is used when the iPlanet Application Server installed on Windows NT or Solaris is connected via TCP/IP to a Relay component on OS/390 (MVS). The Relay communicates over the APPC with CICS. See Figure 3-1.

Figure 3-1 Installing the Connector via TCP/IP



- via Direct APPC/SNA

This method is used when the iPlanet Application Server installed on Windows NT is connected via direct APPC connection to CICS on OS/390 (MVS). See Figure 3-2.

Figure 3-2 Installing the Connector via Direct APPC Using SNA



When you complete the installation either via TCP/IP or via direct APPC using SNA installation, the PhoneBook sample application is available for end-to-end installation verification of the *iPlanet Application Server Enterprise Connector for CICS*. See Appendix A, “Operating the TELCO Sample”.

Installing and Configuring CICS

The CICS components are supplied as downloaded PC files on the iPlanet Application Server Enterprise Connector for CICS installation media. You must upload the required Partitioned Data Sets (PDS) to MVS as part of the mainframe installation using either FTP or a 3270 emulator file transfer utility.

To Upload the Library Files on Windows NT

Run the `mfinst.bat` installation utility from the following directory:

```
\iPlanet\ias6\ias\APPS\adapters\cics\backend
```

To Upload the Library Files on Solaris

Run the file `mfinst.sh` installation utility from the following directory:

```
<instdir>/ias6/ias/APPS/adapters/cics/backend
```

The Installer Dialog Box appears. See Figure 3-3.

Figure 3-3 Installer Dialog Box

The image shows a window titled "Installer" with several sections of input fields:

- User and Host Information:** Host Name, Userid, Password, Permanent Prefix.
- CICS Installation Dataset:** Temp name, Permanent name.
- CICS Load Dataset:** Temp name, Permanent name.
- Relay Installation Dataset:** Temp name, Permanent name.
- Relay Load Dataset:** Temp name, Permanent name.
- CICS DBRM Dataset:** Temp name, Permanent name.
- Unit and Volume Name:** Unit name, Volume name.

At the bottom of the dialog are "Ok" and "Close" buttons.

The Installer Dialog Box contains information about the following fields:

- User and Host Information, see Table 3-1
- CICS Installation Dataset, see Table 3-2

- CICS Load Dataset, see Table 3-3
- Relay Installation Dataset, see Table 3-4
- Relay Load Dataset, see Table 3-5
- CICS DBRM, see Table 3-6
- Unit and Volume Name, see Table 3-7

User and Host Information

Table 3-1 lists names and IDs used to connect to the CICS system.

Table 3-1 User and Host Information

Variable	Definition
Host Name	TCP/IP Host address where the CICS system is located.
Userid	The administrator's ID on the mainframe.
Password	Password of administrator's ID
Permanent Prefix	The dataset prefix for the installation libraries. This prefix affects the permanent names of the CICS Installation Dataset, the CICS Load Dataset, the Relay Installation Dataset, the Relay Load Dataset, and the CICS DBRM dataset.

CICS Installation Dataset

The CICS Installation Dataset contains jobs for the CICS installation. Table 3-2 lists variables and definitions for the CICS Installation Dataset.

Table 3-2 CICS Installation Dataset

Variable	Definition
Temp Name	The temporary name assigned to the installation dataset during upload.
Permanent name	The permanent name assigned to the installation dataset. The prefix of this name is the Permanent prefix defined in the User and Host information.

CICS Load Dataset

The CICS Load Dataset contains modules for the CICS connector. Table 3-3 lists variables and definitions for the CICS Load Dataset parameters.

Table 3-3 CICS Load Dataset

Variable	Definition
Temp Name	The temporary name assigned to the CICS Load dataset during upload.
Permanent name	The permanent name assigned to the CICS Load dataset.

Relay Installation Dataset

The Relay Installation Dataset contains jobs for the Relay installation. Table 3-4 lists and defines parameters for the Relay Installation Dataset.

Table 3-4 Relay Installation Dataset

Variable	Definition
Temp Name	The temporary name assigned to the Relay Installation dataset during upload.
Permanent name	The permanent name assigned to the Relay Installation dataset.

Relay Load Dataset

The Relay Load Dataset contains modules for the component. Table 3-5 lists and defines parameters for the Relay Load Dataset.

Table 3-5 Relay Load Dataset

Variable	Definition
Temp Name	The temporary name assigned to the Relay Load dataset during upload
Permanent name	The permanent name assigned to the Relay Load dataset.

CICS DBRM

The CICS DBRM is the Data Base Request Module library. Table 3-6 lists and defines parameters for the CICS DBRM.

Table 3-6 CICS DBRM

Variable	Definition
Temp Name	The temporary name assigned to the CICS DBRM dataset during upload.
Permanent name	The permanent name assigned to the CICS DBRM dataset.

Unit and Volume Name

The Unit and Volume Name lists the assigned names for the Unit and Volume used.

Table 3-7 Unit and Volume Name

Variable	Definition
Unit name	Disk unit name.
Volume name	Disk volume name.

Figure 3-4 shows an example of a completed installer dialog box.

Figure 3-4 Completed Installer Dialog Box.

The screenshot shows a Windows-style dialog box titled "Installer". It contains several sections with input fields:

- User and Host Information:**
 - Host Name: mf
 - Userid: tal
 - Password: ***
 - Permanent Prefix: IAS4CICS.NT
- CICS Installation Dataset:**
 - Temp name: TAL.IAS.CICS.INST.XMIT
 - Permanent name: IAS4CICS.NT.V6R0M0.CICS.INST
- CICS Load Dataset:**
 - Temp name: TAL.IAS.CICS.LOAD.XMIT
 - Permanent name: IAS4CICS.NT.V6R0M0.CICS.LOAD
- Relay Installation Dataset:**
 - Temp name: TAL.IAS.RELAY.INST.XMIT
 - Permanent name: IAS4CICS.NT.V6R0M0.RELAY.INST
- Relay Load Dataset:**
 - Temp name: TAL.IAS.RELAY.LOAD.XMIT
 - Permanent name: IAS4CICS.NT.V6R0M0.RELAY.LOAD
- CICS DBRM Dataset:**
 - Temp name: TAL.IAS.CICS.DBRM.XMIT
 - Permanent name: IAS4CICS.NT.V6R0M0.CICS.DBRM
- Unit and Volume Name:**
 - Unit name: 3390
 - Volume name: SUNL01

At the bottom of the dialog box are two buttons: "Ok" and "Close".

3. Press OK to continue. Figure 3-5 displays the generated JCL file.

Figure 3-5 Management Console Editor - Generated JCL

```

//TAL1      JOB MSGCLASS=K
/*USE THIS JOB TO RECEIVE THE NAS FILES YOU TRANSFERRED TO OS/390.
/* BEFORE SUBMITTING IT PLEASE VERIFY:
/* 1) A VALID JOBCARD
/* 2) THE NAMES ON THE INDATASET KEYWORDS (THESE ARE THE FILES
/* YOU UPLOADED)
/* 3) THE NAMES ON THE DATASET KEYWORDS (THESE ARE THE PRODUCT
/* LIBRARIES)
//STEP3    EXEC PGM=IKJEFT01,DYNAMNBR=40
//SYSTSPT DD   SYSOUT=*
//SYSUT1 DD   DSN=&SYSUT1,UNIT=SYSDA,SPACE=(1700,(400,50))
//SYSUT2 DD   DSN=&SYSUT2,UNIT=SYSDA,SPACE=(1700,(400,50))
//SYSUT3 DD   DSN=&SYSUT3,UNIT=SYSDA,SPACE=(1700,(400,50))
//SYSTSIN DD   *
PROF NOPREF
RECEIVE INDATASET(TAL.IAS.CICS.LOAD.XMIT)
DATASET(IAS4CICS.NT.V6ROMO.CICS.LOAD)      -
UNIT(3390 ) VOL(SUNL01)
RECEIVE INDATASET(TAL.IAS.CICS.INST.XMIT)
DATASET(IAS4CICS.NT.V6ROMO.CICS.INST)      -
UNIT(3390 ) VOL(SUNL01)
RECEIVE INDATASET(TAL.IAS.RELAY.LOAD.XMIT)
DATASET(IAS4CICS.NT.V6ROMO.RELAY.LOAD)      -
UNIT(3390 ) VOL(SUNL01)
RECEIVE INDATASET(TAL.IAS.RELAY.INST.XMIT)
DATASET(IAS4CICS.NT.V6ROMO.RELAY.INST)      -
UNIT(3390 ) VOL(SUNL01)
RECEIVE INDATASET(TAL.IAS.CICS.DBRM.XMIT)
DATASET(IAS4CICS.NT.V6ROMO.CICS.DBRM)      -
UNIT(3390 ) VOL(SUNL01)

```

The JCL editor modifies the JCL to fit your mainframe environment according to the instructions as viewed in the screen capture above. All of the JCL file can be changed, except for the job name. To apply the changes, choose File and then Save before submitting the job.

To Submit JCL for Execution

1. Choose File>Exit from the menu bar.

The utility will begin to FTP the files to the mainframe, and submit the JCL file to extract the files into permanent libraries.

2. Once a job (JCL) finishes, outputs from the job are displayed as shown in Figure 3-6.

Figure 3-6 Management Console Editor: Outputs from job (JCL)

```

1                                IEBCOPY MESSAGES AND CONTROL STATEMENTS
PAGE                               1
-IEB1135I IEBCOPY FMID HDZ11D0 SERVICE LEVEL UW46025 DATED 19980216 DFSMS 1.4.0 MVS SP6.0.6 HBB6606 CPU
7490
IEB1035I TALL STEP3 10:05:40 MON 08 MAY 2000 PARM=''

IEB1064I STANDARD DD NAMES- SYSIN SYSPRINT SYSUT1 SYSUT2 SYSUT3 SYSUT4

IEB1065I OVERRIDING DD NAMES- SYS00034 SYS00035 SYSUT1 SYSUT2 SYSUT3 SYS00036

IEB1057I VL GETMAIN REQUESTED 250K TO 1M BYTES. OBTAINED 716K.

- COPY INDD=( (SYS00033,R) ),OUTDD=SYS00032

IEB1038I ORIGINAL PDS (BEFORE UNLOAD) WAS RECFM=FB BLKSIZE=23440 LRECL=80 KEYLEN=0 OPTCD=X'00' UCBTYP= X'3
030200F'
INDC=X'00'

IEB1058I ALLOCATED 2 CONTIGUOUS BUFFERS EACH 111K BYTES. WORK AREA HAS 449K BYTES AVAILABLE.

OIEB1013I COPYING FROM PDSU INDD=SYS00033 VOL=SCPMV5 DSN=SYS00129.T100539.RA000.TALL.R0100060

IEB1014I TO PDS OUTDD=SYS00032 VOL=SUNL01 DSN=IAS4CICS.NT.W6ROM0.CICS.DBRM

IEB1106I CONTROL TABLE IS 70 BYTES LONG. WORK AREA HAS 449K BYTES AVAILABLE.

IEB1059I ALLOCATED SECOND BUFFER OF 442K BYTES. FIRST BUFFER IS NOW 221K BYTES. WORK AREA HAS 7124 BYTES AV
AILABLE.
IEB167I FOLLOWING MEMBER(S) LOADED FROM INPUT DATA SET REFERENCED BY SYS00033

```

Review the job output.

3. Click File>Exit to close the window.
4. Go to Configuring CICS on the Mainframe.

Uploading MVS Library Files via TCP/IP

If you have TCP/IP configured on your mainframe, you can use the supplied installation program from within the installer to tailor and upload the libraries. If TCP/IP is not installed, follow the instructions given as described in [Uploading MVS Library Files Using 3270 File Transfer](#).

Uploading MVS Library Files Using 3270 File Transfer

The following procedure applies to users that use a 3270 emulation software and its file transfer capability.

To Transfer Libraries to MVS

1. Allocate four data sets on MVS with `lrecl=80, blksize=3120, recfm=fb`.

For example:

- IAS.CICS.LOAD.XMIT
- IAS.CICS.INSTALL.XMIT
- IAS.RELAY.INSTALL.XMIT
- IAS.RELAY.LOAD.XMIT

2. Use the 3270 emulation program to transfer the following files to the respective MVS data sets. Use the MVS/TSO binary transfer type and fixed-file option.

- LOAD.XMT
- INSTALL.XMT
- RELINST.XMT
- RELLOAD.XMT

These files are found in

```
<instdir>\IAS\APPS\adapters\cics\backend
```

on Windows NT.

3. Issue the following TSO command:

```
RECEIVE INDATASET(IAS.CICS.LOAD.XMIT)
```

4. At the prompt, enter the following:

```
DATASET(IAS4CICS.V6R0M0.CICS.LOAD)
```

where `IAS4CICS.V6R0M0.CICS.LOAD` is the name of the product load library.

5. Issue the following TSO command:

```
RECEIVE INDATASET(IAS.CICS.INSTALL.XMIT)
```

6. At the prompt, enter the following:

```
DATASET ( IAS4CICS.V6R0M0.CICS.INST)
```

where `IAS4CICS.V6R0M0.CICS.INST` is the name of the installation library.

7. Issue the following TSO command:

```
RECEIVE INDATASET ( IAS.RELAY.INSTALL.XMIT)
```

8. At the prompt, enter the following:

```
DATASET ( IAS4CICS.V6R0M0.RELAY.INST)
```

where `IAS4CICS.V6R0M0.RELAY.INST` is the name of the installation library for the `RELAY` component.

9. Issue the following TSO command:

```
RECEIVE INDATASET ( IAS.RELAY.LOAD.XMIT)
```

10. At the prompt, enter the following:

```
DATASET ( IAS4CICS.V6R0M0.RELAY.LOAD)
```

where `IAS4CICS.V6R0M0.RELAY.LOAD` is the name of the load library for the `RELAY` component.

Configuring CICS on the Mainframe

You need to configure the components to install the connection to the mainframe computer. The following steps provide information on how to perform this task.

To Configure the CICS Components

1. Ensure APPC Logmode Entry is Present.
2. Define the Sample CICS Application in VTAM.
3. Define a Remote PU for each NT Server Platform Connected Directly to CICS via APPC
4. Create the VSAM Datasets Using DEFFILES Member.
5. Update the CICS Resource Definitions by Running the Supplied CICSDEF.
6. Install a Resource Group for the APPC Connection.
7. Add the Product Load Library to CICS DFHRPL List.

8. Define the Necessary Entries in the Application Table VSAM File.

Ensure APPC Logmode Entry is Present

Code Example 3-1 demonstrates definitions of APPC Logmode entry in the MODE TABLE associated with the CICS VTAM definition.

A MODE entry with the same name must be defined in the MODE TABLE associated with APPC/MVS LU (logical unit).

Code Example 3-1 Creating the VTAM mode table MTAPPC

```
//MODETAB JOB
/** ANY SITE PROCEDURE FOR ASSEMBLY AND LINK CAN BE USED
/** THIS SAMPLE IS USING HIGH LEVEL ASSEMBLER
/** IN LATEST OS/390 VERSIONS, IEWL WILL INVOKE THE DFSMS BINDER
//ASM EXEC PGM=ASMA90,REGION=5048K,
// PARM='OBJECT,NODECK,LIST,XREF(SHORT)'
//SYSLIB DD DSN=SYS1.SISTMAC1,DISP=SHR
//SYSUT1 DD UNIT=SYSDA,SPACE=(CYL,(10,5))
//SYSIN DD *
MTAPPC MODETAB
APPCMODE MODEENT LOGMODE=APPCMODE,
                FMPROF=X'13',
                TSPROF=X'07',
                PRIPROT=X'B0',
                SECPROT=X'B0',
                COMPROT=X'D0B1',
                RUSIZES=X'8585',
                PSERVIC=X'06020000000000000000000300'
                MODEEND
END
//SYSLIN DD DSN=&&LOADME,DISP=(,PASS),UNIT=SYSDA,
// SPACE=(TRK,(30,10),RLSE)
//SYSPRINT DD SYSOUT=*
//LKED EXEC PGM=IEWL,PARM='MAP,LET,LIST',REGION=912K,
// COND=(8,LT,ASM)
//SYSLIB DD DSN=SYS1.MACLIB,DISP=SHR
//SYSLMOD DD DISP=SHR,DSN=SYS1.VTAMLIB
//SYSUT1 DD UNIT=SYSDA,SPACE=(CYL,(3,2)),DSN=&SYSUT1
//SYSPRINT DD SYSOUT=*
//SYSLIN DD DSN=&&LOADME,DISP=(OLD,DELETE)
// DD *
NAME MTAPPC(R)
```

Define the Sample CICS Application in VTAM

Code Example 3-2 is a sample VTAM definition for CICS. In most cases, CICS is already defined and running.

Code Example 3-2 Sample VTAM major node for CICS

```

SUNCICS2 VBUILD TYPE=APPL                APPLICATION MAJOR NODE
A06CICS2 APPL  EAS=160 ,                   ESTIMATED CONCURRENT SESSIONS   *
              ACBNAME=A06CICS2 ,         APPLID FOR ACB                 *
              MODETAB=MTAPPC ,           *
              PARSESS=YES ,               *
              SONSCIP=YES ,               *
              AUTH=(ACQ,VPACE,PASS)      CICS CAN ACQUIRE & PASS TMLS   *

```

NOTE Do not add APPC=YES to the CICS VTAM definition.

Define a Remote PU for each NT Server Platform Connected Directly to CICS via APPC

If your application server is connected directly to CICS (using APPC connections), define the remote PU (the application server machine) to VTAM and CICS.

Refer to Code Example 3-3.

Code Example 3-3 Sample PU and LU6.2 Definition for Windows NT

```

* / *
SWSHMUEL VBUILD TYPE=SWNET
PUSHMUEL  PU PUTYPE=2,ADDR=C1,MAXDATA=1456,
          CPNAME=SHMUELNT
SHMUELNT  LU LOCADDR=0

```

Create the VSAM Datasets Using DEFFILES Member

Create the VSAM datasets using DEFFILES member in CICS installation library. See Code Example 3-4.

Code Example 3-4 DEFFILES to Define VSAM Datasets Used by CICS Components

```

// IASCFILE JOB NOTIFY=&SYSUID
// EXEC PGM=IDCAMS
// *****

```

Code Example 3-4 DEFFILES to Define VSAM Datasets Used by CICS Components *(Continued)*

```

/*  DEFINE IAS4CICS VSAM FILES
/*****
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
/* ***** */
/* ***  DELETE AND DEFINE OF THE CICS  APPLTAB FILE      *** */
/* ***** */
DELETE  IAS.APPLTAB.CICS NOERASE CLUSTER
SET     MAXCC=0
DEFINE  CLUSTER( NAME(IAS.APPLTAB.CICS)                -
                 INDEXED                               -
                 RECORDSIZE(359 359)                   -
                 KEY(64 0)                              -
                 REUSE                                  -
                 SHR(2 3)                               -
                 SPEED                                  -
                 VOLUME(SUNL01) )                      -
DATA( NAME(IAS.APPLTAB.CICS.DATA)                    -
      CISZ(8192)                                       -
      TRACKS(2 2))                                     -
INDEX( NAME(IAS.APPLTAB.CICS.INDEX)                   -
       CISZ(1024)                                       -
       TRACKS(1 1))
/* ***** */
/* ***  DELETE AND DEFINE OF THE CICS LOGGING FILE      *** */
/* ***** */
DELETE  IAS.LOGFILE.CICS ERASE CLUSTER
SET     MAXCC=0
DEFINE  CLUSTER( NAME(IAS.LOGFILE.CICS)                -
                 INDEXED                               -
                 RECORDSIZE(65 32650)                  -
                 KEY(18 0)                              -
                 REUSE                                  -
                 SHR(2 3)                               -
                 SPEED                                  -
                 VOLUME(SUNL01) )                      -
DATA( NAME(IAS.LOGFILE.CICS.DATA)                    -
      CISZ(32768)                                       -
      CYLINDERS(4 1))                                   -
INDEX( NAME(IAS.LOGFILE.CICS.INDEX)                   -
       CISZ(1024)                                       -
       TRACKS(3 1))

```

Update the CICS Resource Definitions by Running the Supplied CICSDEF

Update the CICS resource definitions by running the supplied CICSDEF from the installation library.

Refer to Code Example 3-5.

When using direct APPC connection from Windows NT, refer to Code Example 3-6 as a definition for CICS connection and sessions.

Code Example 3-5 CICSDEF to Define CICS Components

```
//CICSDEF JOB CLASS=A,MSGCLASS=K
//*
//* SAMPLE JOB TO DEFINE THE IAS FOR CICS COMPONENTS TO CICS
//* CHECK THE DSN= PARAMETERS FOR THE STEPLIB AND DFHCSD DD CARDS
//* CHANGE 'CICSLIST' TO THE CICS STARTUP LIST NAME
//* SEE NOTES FOR EACH SECTION BELOW (FILES, PROGRAMS, ETC.)
//*
//CSDUP EXEC PGM=DFHCSDUP
//STEPLIB DD DSN=CICS.CICS.SDFHAUTH,DISP=SHR
//DFHCSD DD DSN=CICS.DFHCSD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
***
*** DEFINITIONS FOR APPLICATION TABLE AND LOG FILES
***
***
DEFINE FILE(SRVAPLT) GROUP(IAS)
    DSNAME(IAS.APPLTAB.CICS) DISPOSITION(SHARE)
    ADD(YES) BROWSE(YES) DELETE(YES) READ(YES) UPDATE(YES)
    RECORDFORMAT(F) STATUS(ENABLED) OPENTIME(FIRSTREF)
    JOURNAL(01) STRINGS(10) DATABUFFERS(11)
    DESCRIPTION(IAS APPLICATION TABLE)
DEFINE FILE(SRVLOGF) GROUP(IAS)
    DSNAME(IAS.LOGFILE.CICS) DISPOSITION(SHARE)
    ADD(YES) BROWSE(YES) DELETE(YES) READ(YES) UPDATE(YES)
    RECORDFORMAT(F) STATUS(ENABLED) OPENTIME(FIRSTREF)
    JOURNAL(01) STRINGS(10) DATABUFFERS(11)
    DESCRIPTION(IAS LOG/RECOVERY FILE)
***
*** DEFINITIONS FOR TRANSACTIONS
***
DEFINE TRANSACTION(SRVU) GROUP(IAS) PROGRAM(SRVMAINT)
    DESCRIPTION(IAS APPLICATION TABLE MAINTENANCE)
DEFINE TRANSACTION(SRVW) GROUP(IAS) PROGRAM(SRVMMTSS)
DEFINE TRANSACTION(SRVV) GROUP(IAS) PROGRAM(SRVRCVM)
DEFINE TRANSACTION(SRVS) GROUP(IAS) PROGRAM(SRVGTBLS)
DEFINE TRANSACTION(SRVL) GROUP(IAS) PROGRAM(SRVLINK)
DEFINE TRANSACTION(SRVX) GROUP(IAS) PROGRAM(SRVXLINK)
    DESCRIPTION(IAS X-LINK UNIT)
DEFINE TRANSACTION(SRLA) GROUP(IAS) PROGRAM(SRVRLAA)
DEFINE TRANSACTION(SRT1) GROUP(IAS) PROGRAM(SRVTEST1)
    DESCRIPTION(IAS SAMPLE SERVICE - SCENARIO 1)
DEFINE TRANSACTION(SRT2) GROUP(IAS) PROGRAM(SRVTEST2)
    DESCRIPTION(IAS SAMPLE SERVICE - SCENARIO 2)
DEFINE TRANSACTION(SRT3) GROUP(IAS) PROGRAM(SRVTEST3)
    DESCRIPTION(IAS SAMPLE SERVICE - SCENARIO 3)
DEFINE TRANSACTION(SRTC) GROUP(IAS) PROGRAM(SRVTESTC)
```

Code Example 3-5 CICSDEF to Define CICS Components (*Continued*)

```

DESCRIPTION(IAS SAMPLE CLIENT - ALL SCENARIOS)
***
*** DEFINITIONS FOR PROGRAMS
***
DEFINE PROGRAM(SRVRQRPC) GROUP(IAS) LANGUAGE(ASSEMBLER)
DEFINE PROGRAM(SRVRSRPC) GROUP(IAS) LANGUAGE(ASSEMBLER)
DEFINE PROGRAM(SRVRCVM) GROUP(IAS) LANGUAGE(ASSEMBLER)
DEFINE PROGRAM(SRVABND) GROUP(IAS) LANGUAGE(ASSEMBLER)
DEFINE PROGRAM(SRVSCURE) GROUP(IAS) LANGUAGE(ASSEMBLER)
DEFINE PROGRAM(SRVSTUP) GROUP(IAS) LANGUAGE(ASSEMBLER)
DEFINE PROGRAM(SRVMAINT) GROUP(IAS) LANGUAGE(ASSEMBLER)
DEFINE PROGRAM(SRVMTSS) GROUP(IAS) LANGUAGE(ASSEMBLER)
DEFINE PROGRAM(SRVUMLOG) GROUP(IAS) LANGUAGE(ASSEMBLER)
DEFINE PROGRAM(SRVGTBLS) GROUP(IAS) LANGUAGE(ASSEMBLER)
DEFINE PROGRAM(SRVUTBLM) GROUP(IAS) LANGUAGE(ASSEMBLER)
DEFINE PROGRAM(SRVGTBLE) GROUP(IAS) LANGUAGE(ASSEMBLER)
DEFINE PROGRAM(SRVRLAA) GROUP(IAS) LANGUAGE(ASSEMBLER)
DEFINE PROGRAM(SRVLINK) GROUP(IAS) LANGUAGE(ASSEMBLER)
DEFINE PROGRAM(SRVXLINK) GROUP(IAS) LANGUAGE(ASSEMBLER)
DESCRIPTION(IAS X-LINK UNIT)
DEFINE PROGRAM(SRVUMAP) GROUP(IAS) LANGUAGE(ASSEMBLER)
DEFINE PROGRAM(SRVUMP1) GROUP(IAS) LANGUAGE(ASSEMBLER)
DEFINE PROGRAM(SRVTEST1) GROUP(IAS) LANGUAGE(ASSEMBLER)
DESCRIPTION(IAS SAMPLE SERVICE - SCENARIO 1)
DEFINE PROGRAM(SRVTEST2) GROUP(IAS) LANGUAGE(ASSEMBLER)
DESCRIPTION(IAS SAMPLE SERVICE - SCENARIO 2)
DEFINE PROGRAM(SRVTEST3) GROUP(IAS) LANGUAGE(ASSEMBLER)
DESCRIPTION(IAS SAMPLE SERVICE - SCENARIO 3)
DEFINE PROGRAM(SRVTESTC) GROUP(IAS) LANGUAGE(ASSEMBLER)
DESCRIPTION(IAS SAMPLE CLIENT - ALL SCENARIOS)
***
*** DEFINITIONS FOR APPC CONNECTIONS AND SESSIONS
***
*** NOTE THAT CICS SUPPORTS AUTOINSTALL FOR LU6.2. IF YOUR
*** SYSTEM IS CONFIGURED TO DO SO, THESE DEFINITIONS MAY
*** NOT BE REQUIRED.
***
*** THIS IS A SAMPLE DEFINITION, DEFINING THE CONNECTION
*** AND SESSIONS TO APPC/MVS. IT ASSUMES THE SAME NAMES
*** AS IN THE SUPPLIED (ABOVE) SAMPLES. IF ANY WERE
*** MODIFIED, THESE MUST BE REFLECTED BELOW.
***
*** THE CONNECTION AND SESSIONS FOR APPC/MVS ARE USED IN CASE IAS
*** IS CONNECTED OVER TCP/IP TO RELAY, AND RELAY USES APPC/MVS
*** TO CONNECT TO CICS.
*** IF YOU ARE CONNECTING IAS ON NT USING DIRECT APPC CONNECTION
*** TO CICS REFER TO SAMPLE MEMBER CICSDEF3 IN THIS LIBRARY.
***
DEFINE CONNECTION(MVS1) GROUP(IAS)
NETNAME(MVSLU01) ACCESSMETHOD(VTAM) PROTOCOL(APPC)
SINGLESESS(NO) INSERVICE(YES) AUTOCONNECT(YES)
DESCRIPTION(SAMPLE CONNECTION, TO APPC/MVS)
DEFINE SESSION(MVS1SESS) GROUP(IAS)
CONNECTION(MVS1) MODENAME(APPCMODE) PROTOCOL(APPC)
MAXIMUM(10,5) AUTOCONNECT(YES)

```

Code Example 3-5 CICSDEF to Define CICS Components (*Continued*)

```

DESCRIPTION(SAMPLE CONNECTION, TO APPC/MVS)
***
*** ADD THE IAS GROUP, WITH THE DEFINITIONS, TO THE CICS STARTUP LIST
*** OR INSTALL GROUP(IAS) TO PUT DEFINITIONS IN EFFECT
***
ADD GROUP(IAS) LIST(CICSLIST)
/*
//

```

Install a Resource Group for the APPC Connection

NOTE The session definition contains the MODENAME which is also present in mode tables associated with APPC/MVS and the CICS definitions in VTAM. The same mode name should be used in all three instances.

Code 3-6 can be used for a direct APPC connection from Windows NT, and demonstrates definitions for CONNECTION and SESSIONS parameters in CICS.

Code Example 3-6 CICSDEF3

```

//CICSDEF3 JOB
//*
//CSDUP EXEC PGM=DFHCSDUP
//STEPLIB DD DSN=CICS.CICS.SDFHAUTH,DISP=SHR
//DFHCSD DD DSN=CICS.DFHCSD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
***
*** DEFINITIONS FOR IAS/NT USING DIRECT APPC.
*** THESE DEFINITIONS MUST BE INSTALLED IN CICS RESOURCE DEFINITION
*** IN ADDITION TO, OR INSTEAD OF, CONNECTION AND SESSIONS FOR APPC/MVS
*** ENLISTED IN CICSDEF SAMPLE.
***
DEFINE CONNECTION(SKNT) GROUP(IASDAPPC)
  NETNAME(SHMUELNT) ACCESSMETHOD(VTAM) PROTOCOL(APPC)
  SINGLESESS(NO) INSERVICE(YES) AUTOCONNECT(YES)
  DESCRIPTION(SAMPLE DIRECT/APPC CONNECTION TO IAS/NT)
DEFINE SESSIONS(SKNTAPPC) GROUP(IASDAPPC)
  CONNECTION(SKNT) MODENAME(APPCMODE) PROTOCOL(APPC)
  MAXIMUM(10,5) AUTOCONNECT(YES)
  DESCRIPTION(SAMPLE DIRECT CONNECTION TO IAS/NT)
***
*** DEFINITIONS ARE PUT IN EFFECT BY ADDING TO CICS STARTUP LIST AS
*** DEMONSTRATED HERE, OR BY INSTALLING GROUP CONTAINING THESE DEFS
***

```

Code Example 3-6 CICSDEF3 (Continued)

```
ADD GROUP(IASDAPPC) LIST(CICSLIST)
/*
//
```

Add the Product Load Library to CICS DFHRPL List

Add the product load library to the CICS DFHRPL list in the CICS startup JCL.

Code Example 3-7 Sample VTAM Major Node for CICS

```
Startup/JCL//DFHRPL DD DSN=
                DD DSN='
.....
.....
DD DSN=' IAS4CICS.V6R0M0.CICS.LOAD' .DISP=SHR*
```

Define the Necessary Entries in the Application Table VSAM File

Use the supplied CICS transaction SRVU created in Step 3 to make the necessary application table definitions in the CICS application table file as shown in Figure 3-7. Use the PF5 command to add the entries to the file.

Figure 3-7 Application Table Maintenance

```

IPLANET APPLICATION SERVER
-----
                APPLICATION TABLE MAINTENANCE          LAST UPDATE: 12/03/00 14:38

APPL-ID: SRVXLINK
PARTNER: LU1
TP-NAME: TP1

PROTOCOL TYPE: A      (A=APPC)
                    IF APPC->  ENTER MODE NAME: _____ (LOGMODE NAME)

ENVIRONMENT   : C      (C = CICS)
UPDATE MODE   : 0      (0=NO UPDATE, 1=SERVICE UPDATE, 2=BILATERAL UPDATE)
DEBUG         : N      (Y = YES, N = NO)
COMPRESSION   : N      (Y = YES, N = NO)
ENCRYPTION    : N      (Y = YES, N = NO)
TARGET VERSION: 20    (TARGET CONNECT RECORD VERSION)

COMMENT       : _____ (APPL'S DESC)
DISTRIBUTION ID: _____ DISTRIBUTION GROUP: _____

-----
PF1-HELP  PF3-EXIT  PF4-UPD  PF5-ADD  PF6-DEL  PF7-LIST  ENTER-DISP
  
```

Installing and Configuring the Relay

Installing and configuring the Relay is only necessary when you use TCP/IP to connect to the mainframe.

When using the Relay, configure the environment for the following:

- VTAM
- TCP/IP
- APPC/MVS
- Security

Proceed in the following order:

- Create an Application Table Dataset for the Relay Component
- Configure APPC/MVS
- Create a TCP/IP Listener Started Task
- Verify the Security Server Definition

- Start the Listener
- Stop the Listener

Create an Application Table Dataset for the Relay Component

You must create an application dataset for the Relay component.

To Create an Application Table Dataset for the Relay Component

1. Run the DEFFILES REXX located in the Relay installation library.
The REXX prompts you for the entries. See Step 2 through Step 5, below.
2. Enter the application table name without quotes.
Specify a name for the relay's application table. For example:
IAS.APPLTAB.RELAY
3. Enter the VOLSER (Volume Serial Name).
Specify the name of the DASD on which this file should be created.
4. Enter unit type, or press Enter for 3390.
Specify the unit type.
5. Enter MVS/APPC logmode.
Enter the logmode that should be used to access CICS. The supplied name is APPCMODE.

The message "*You have successfully created an application table*" appears when the table is created.

Configure APPC/MVS

This procedure is required only if APPC/MVS is not already configured on your system. If it is configured on the system, it is recommended that you read through these instructions and compare them to the existing configuration on your system. You can use wither one of the samples provide with the CICS Enterprise Connector to configure APPC/MVS.

To Configure APPC/MVS

1. If APPC/MVS is not installed on your system, you can adapt and use the sample code given in Code Example 3-8 or the sample definition for APPC/MVS base LU given in Code Example 3-9.

The member APPC/MVS in the Relay Installation library contains VTAM definitions for the base APPC/MVS LU.

Code Example 3-8 Library Member APPCMVS

```

*
* SAMPLE MAJOR NODE FOR APPC/MVS
*
APPCMVS  VBUILD TYPE=APPL
MVSLU01  APPL  ACBNAME=MVSLU01 ,
          APPC=YES ,
          AUTOSES=10 ,
          DDRAINL=NALLOW ,
          DMINWNL=20 ,
          DMINWNR=20 ,
          DRESPL=NALLOW ,
          DSESLIM=40 ,
          EAS=509 ,
          MODETAB=MTAPPC ,
          SECACPT=CONV ,
          SRBEXIT=YES ,
          VERIFY=NONE ,
          VPACING=2

```

NOTE The iPlanet Application Server Enterprise Connector for CICS does not require ASCH.

Code Example 3-9 APPCPM00 Member

```
/* LIB: SYS1.PARMLIB(APPCPM00) */
LUADD ACBNAME(MVSLU01) BASE NOSCHED
```

2. Activate the APPC/MVS major node by using the following command:

```
V NET, ID=APPCMVS, ACT
```

3. Using the MVS commands, start APPC/MVS by using the following command:

```
S APPC, SUB=MSTR, APPC=00
```

Create a TCP/IP Listener Started Task

The Listener listens to a TCP/IP port. The following sections describe both the prerequisites and the procedure for configuring and operating the Listener.

NOTE Because the Listener and the Relay reside in the same address space, when referring to the Listener and Relay, the reference is to the same component.

To Create a TCP/IP Listener Started Task

The TCP/IP Listener can be executed as an MVS Started Task, or as a batch job. It is recommended to run it as an MVS Started Task.

Prerequisites

The following components must be installed before you can use the Listener:

- The MVS Operating System version 4.3 or later, or any version of OS390
- IBM TCP/IP version 3.1 or later

To Create and Configure the Listener

1. Copy the member LISTEN, (the sample procedure in Relay installation library), into a system procedure library, for example,

```
SYS1.PROCLIB.
```

2. Ensure that the STEPLIB points to the load library, and that the SRVAPLF DD card points to the application table.
3. Verify the SYSOUT class on the CPEOUT, CPEOUTRS, CPEOUTRO DD cards.

The load library *must* be APF authorized.

4. Place an entry for the load library in SYS1.PARMLIB member IEAAPFxx or PROGxx, depending on your site's standards.
5. Update the following PROC statement parameters:

Table 3-8 PROC Statement Parameters

TCPIP	Name of the TCP/IP address space. TCPIP is the default.
PORT	An available port number.
MAXTASK	Maximum number of concurrent tasks. 20 tasks is the default.
PROGRAM	Name of the program to activate for incoming requests, must be 'SRVRLNS'.

Refer to Code Example 3-10.

Code Example 3-10 Listen PROC

```
//LISTEN PROC TCPIP=TCPIP,PORT=47000,MAXTASK=20,PROGRAM=SRVRLNS
//*****
/** THIS PROCEDURE CAN BE USED FOR A TCP/IP LISTNER.
/** MOST COMMONLY, IT IS USED AS A RELAY BETWEEN TCP/IP AND APPC.
/** IT CAN BE RUN AS A STARTED TASK OR A JOB.
/**
/** BEFORE USING IT PLEASE PERFORM THE FOLLOWING CHANGES:
/** 1. CHECK THE NAME OF THE STEPLIB. NOTE THAT THIS LIBRARY HAS TO BE
/**    AUTHORIZED.
/** 2. CHECK THE NAME OF THE APPLICATION TABLE ON SRVAPLF
/** 3. CHECK THE SYSOUT CLASS ON CPEOUT AND SYSUDUMP.
/** 4. UPDATE THE PARAMETERS ON THE PROC STATEMENT :
/** TCPIP = THE NAME OF THE TCP/IP ADDRESS SPACE (DEFAULTS TO TCPIP)
/** PORT = AN AVAILABLE PORT NUMBER (DEFAULTS TO 47000)
/** MAXTASK = THE MAXIMUM NUMBER OF CONCURRENT TASKS (DEFAULTS TO 20)
```

Code Example 3-10 Listen PROC (Continued)

```

/* PROGRAM = THE NAME OF THE PROGRAM TO ACTIVATE ON INCOMING REQUEST
/*      - LEAVE BLANK TO PICK UP THE NAME IN THE APPLICATION TABLE
/*      - CODE 'SRVRLTA' FOR A RELAY
//LISTEN EXEC PGM=SRVLISPR,PARM='&TCPIP,&PORT,&MAXTASK,&PROGRAM',
//      REGION=0M
//STEPLIB DD DSN=IAS4CICS.V6R0M0.RELAY.LOAD,DISP=SHR
//CPEOUT DD SYSOUT=X,HOLD=YES
//CPEOUTRQ DD SYSOUT=X,HOLD=YES
//CPEOUTRS DD SYSOUT=X,HOLD=YES
//CPESNAP DD SYSOUT=X,HOLD=YES
//SYSUDUMP DD SYSOUT=X,HOLD=YES
//SRVAPLF DD DSN=IAS.APPLTAB.RELAY,DISP=SHR
//SRVTCPI DD DUMMY
// PEND

```

Verify the Security Server Definition

Verify that the user ID assigned to the Listener has an OMVS segment.

Start the Listener

The following description of how to start the Listener assumes that `LISTEN` is the name of the started task.

Use the following procedures to start, stop, and restart the Listener, and to determine and free the connection port.

To Start the Listener

- Issue the MVS command: `S LISTEN`

NOTE `LISTEN` can be included in the TCP/IP automatic startup list (AUTOLOG).

To Stop the Listener

- Issue the MVS command: `P LISTEN`

To Stop the Listener After a Fixed Amount of Time

- Issue the MVS command: `F LISTEN, SHUTDOWN nnn`

where *nnn* is the number of seconds (default is 10 seconds) and allows open conversations to end.

Stop the Listener

In early releases of TCP/IP, it may occur that even though the Listener was stopped, its port is not freed. In such cases, determine the connection identification and free the port.

To Determine the Connection Identification

- Issue the following command:

```
NETSTAT ALLCONN (PORT xxxxxx)
```

where xxxxx is the port assigned to the Listener (Relay). Note the connection identification.

To Free the Port

- Issue the following command which requires the issuing user to have the proper security authorization:

```
NETSTAT DROP yyyyy
```

where yyyyy is the connection identification obtained in the preceding NETSTAT command.

Installing the PhoneBook Application

The PhoneBook Sample installation is intended to verify that the iPlanet Application Server Enterprise Connector for CICS has been properly installed.

NOTE The TELCO sample application including its installation is described in the appendix. The TELCO sample requires DB2 for OS/390 and is not part of installation verification.

To Install the Sample PhoneBook Application on CICS

- Submit the PBINIT member located in the CICS installation library.

Refer to Code Example 3-11.

Code Example 3-11 PhoneBook Sample in the CICS Environment

```
//PBINIT JOB MSGCLASS=K
//*=====*
//*
//* THIS JOB CREATES THE VSAM FILE FOR THE IAS PHONEBOOK
//* DEMO. IT CREATES, INITIALIZES THE VSAM PHONEBOOK DATASET, AND
//* DEFINES IT TO CICS USING THE BATCH CSD UPDATE UTILITY.
//*
//*=====*
//* 1. DEFINE VSAM FILE
//*
//* CHECK THE NAME OF THE LIBRARY IN THE SYSEXEC CARD, IT SHOULD BE
//* THIS LIBRARY
//* CHECK THE VSAM DATASET NAME(S) IN THE SYSTSIN LINE 1 AND 3
//* CHANGE THE VOLSER (VVVVVV) IN SYSTSIN LINE 4
//*=====*
//STEP3 EXEC PGM=IKJEFT01,DYNAMNBR=40
//SYSTSPRT DD SYSOUT=*
//SYSUT1 DD DSN=&SYSUT1,UNIT=SYSDA,SPACE=(1700,(400,50))
//SYSUT2 DD DSN=&SYSUT2,UNIT=SYSDA,SPACE=(1700,(400,50))
//SYSUT3 DD DSN=&SYSUT3,UNIT=SYSDA,SPACE=(1700,(400,50))
//SYSEXEC DD DSN=IAS4CICS.V6R0M0.CICS.INST,DISP=SHR
//INPUT DD *
ARIE NOA 262 12324
FLINT ORIT 260 4377
GALIL MOTI 1234 12345
GALMIDI MOTI 123 1234
GOLD KEREN 258 52960
GRYNBAUM TAL 251 52960
MICHEAL SHATZ 234 43456
REICH SHANY 123 1234
SHANI RAKEFET 252 1234
SHIMON RICKY 259 43788
SHORKEND MIKE 123 1234
/*
//SYSTSIN DD *
DEL 'IAS.PHONBOOK.CICS'
PBLOAD
IAS.PHONBOOK.CICS
VVVVVV
3390
/*
//*=====*
//* 2. UPDATE CICS DEFINITIONS WITH PHONEBOOK APPLICATION DATA
```

Code Example 3-11 PhoneBook Sample in the CICS Environment (*Continued*)

```

// *
// * CHECK THE DSN= PARAMETERS FOR THE STEPLIB AND DFHCSD DD CARDS
// * CHANGE 'CICSLIST' TO THE CICS STARTUP LIST NAME
// * SEE NOTES FOR EACH SECTION BELOW (FILES, PROGRAMS, ETC.)
// *
// *===== *
//CSDUP EXEC PGM=DFHCSDUP
//STEPLIB DD DSN=CICS.CICS.SDFHLOAD,DISP=SHR
//DFHCSD DD DSN=CICS.DFHCSD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
***
*** DEFINITIONS FOR PHONEBOOK FILES
***
DEFINE FILE(PBVSAM) GROUP(IASPHB)
    DSNAME(IAS.PHONBOOK.CICS) DISPOSITION(SHARE)
    ADD(YES) BROWSE(YES) DELETE(YES) READ(YES) UPDATE(YES)
    RECORDFORMAT(F) STATUS(ENABLED) OPENTIME(FIRSTREF)
    JOURNAL(01) STRINGS(10) DATABUFFERS(11)
    DESCRIPTION(IAS PHONEBOOK APPLICATION TABLE)
***
*** DEFINITIONS FOR TRANSACTIONS
***
*** THE TRANSID VALUES MAY BE CHANGED.
***
DEFINE TRANSACTION(PHBK) GROUP(IASPHB) PROGRAM(PHONBOOK)
    DESCRIPTION(IAS PHONEBOOK APPLICATION)
***
*** DEFINITIONS FOR PROGRAMS
***
DEFINE PROGRAM(PHONBOOK) GROUP(IASPHB) LANGUAGE(ASSEMBLER)
DEFINE PROGRAM(PHONBOOX) GROUP(IASPHB) LANGUAGE(ASSEMBLER)
***
*** ADD THE IAS GROUP, WITH THE DEFINITIONS, TO THE STARTUP LIST
*** IF NEEDED (NOT DONE BEFORE)
***
ADD GROUP(IASPHB) LIST(CICSLIST)
/*

```

To Operate the Sample PhoneBook Application on NT

1. Select Start>Programs>iPlanet Application Server 6.0.
2. Select CICS Connector 6.0 - Sample Applications.

To Operate the PhoneBook Sample Application on Solaris

- Run Netscape or Microsoft browser with the following URL:

http://<webservice instance name>/cicsSamples

Managing Data

This chapter describes how to use the Management Console and the Repository Browser to manage and view your data.

This chapter contains information about the following topics:

- The Management Console
- The Repository Browser

The Management Console

Each enterprise connector has an interactive tool, called the Management Console. The Management Console is typically used by the data source administrator and consists of two groups of functions:

- Tasks that are used to process and browse data, and functions from EIS metadata:
 - data mining
 - creating new data sources
 - editing data sources
- Mapping User Privileges that establishes relationships between the web and EIS users.
- The Listener Management enables the administrator to view and edit listener parameters, create new listeners and view listener statistics.

To Enter the CICS Management Console from Windows NT

Select Start>Programs>iPlanet Application Server 6.0 >CICS Connector 6.0-Management Console.

To Enter the CICS Management Console from Solaris

1. Enter the following directory:

```
cd <iPlanet>/ias/APPS/bin
```

2. Enter the following command:

```
cicsconsole.sh
```

The CICS Management Console window is displayed. See Figure 4-1.

Figure 4-1 CICS Management Console

Management Console Functions

The Tasks tab is used for:

- Creating a New Data Source
- Editing a Data Source

The CICS User Management tab is used for:

- Mapping User Privileges

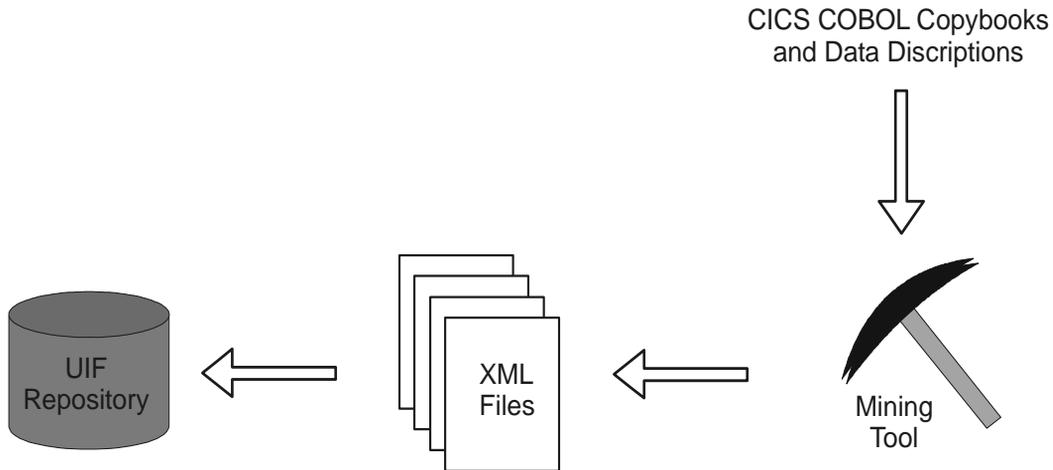
The Listener Management tab is used for:

- Listener Statistics
- Listener Management

The Data Mining Tool

The Data Mining Tool uses a common cross platform format, called eXtensible Markup Language (XML), to populate the repository by taking EIS information and converting it to XML. The XML is then stored in the UIF Repository in a specific structure that can be browsed when necessary.

Figure 4-2 Mining Tool



The Data Mining Tool allows you to extract functions and parameters from CICS. The iPlanet Application Server user can then utilize these functions (calls).

Accessing the Data Mining Tool

The Data Mining Tool in the *iPlanet Application Server Enterprise Connector for CICS* is accessed through the Management Console.

To Enter the Data Mining Tool

1. Enter the CICS Management Console as described in The Management Console.
2. In the Tasks tab, select the Data Mining icon.

The Option Chooser window is displayed see Figure 4-3.

Figure 4-3 Option Chooser Window

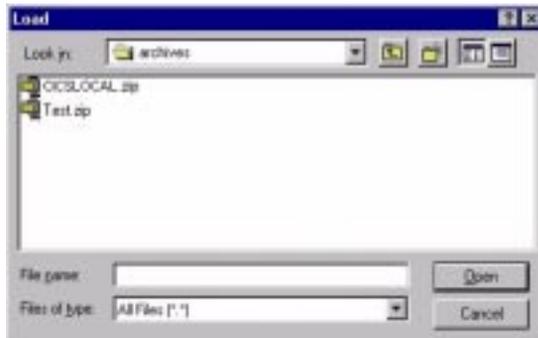
You can select a local or remote Cobol file.

NOTE To convert a local Cobol File, continue to To Choose a Cobol File (local).
To convert a remote Cobol File, go to To Choose a Remote Cobol File.

To Choose a Cobol File (local)

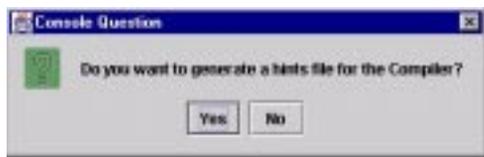
1. In the Option Chooser window, select the option Convert local Cobol File, and click OK.

A window is displayed enabling you to select and load a local file. See Figure 4-4.

Figure 4-4 Load Window

2. Select and load a file and click Open. A Console Question window is displayed. See Figure 4-5.

Figure 4-5 Console Question



3. Click Yes to generate a hints file for the Compiler, or No.

A Hints file informs the Cobol data mining tool how to treat redefined variables. For more information, consult a Cobol source book.

If Yes, an editor screen opens with the hints file displayed.

The Cobol file is converted to XML and loaded into the repository.

To Choose a Remote Cobol File

1. In the Option Chooser window, (Figure 4-3), select the option Convert remote Cobol File, and click OK.

The Get Remote File window is displayed. See Figure 4-6.

Figure 4-6 Get Remote File Window

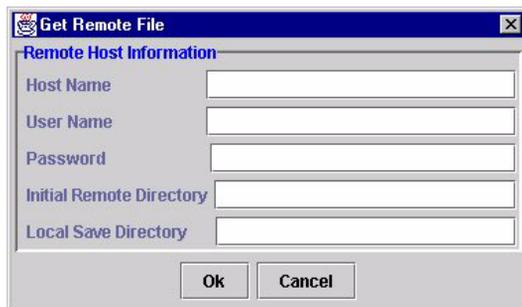


Table 4-1 describes the fields for the Remote Host Information where the copybook file is downloaded from using FTP.

2. Enter in the information required.

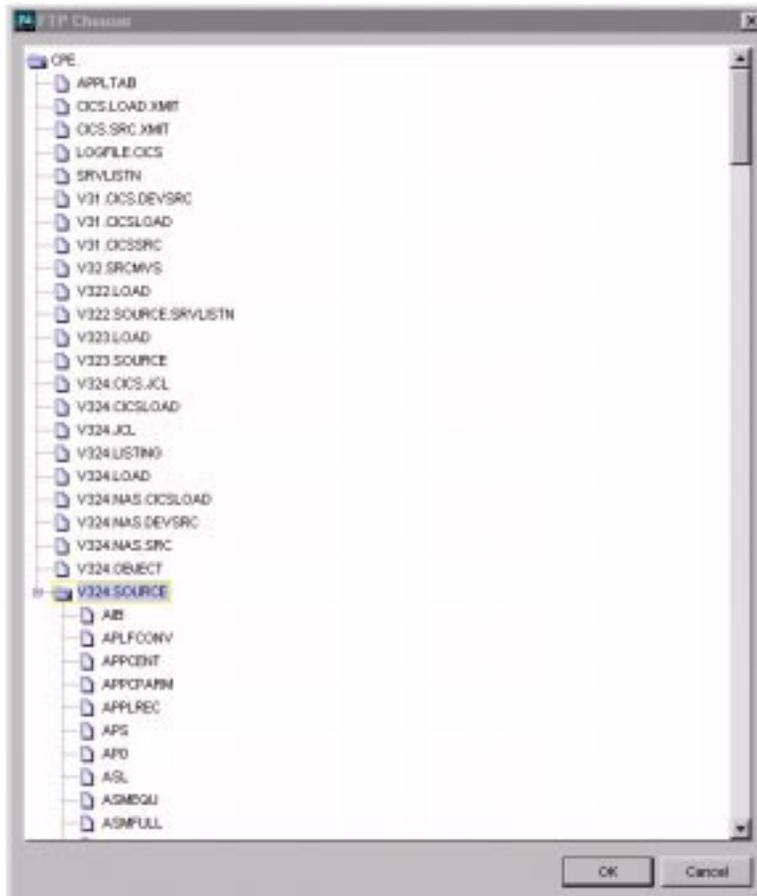
Table 4-1 Remote Host Information

Variable	Definition
Host Name	Name of the host computer where the remote file is located.
User Name	Name of the host user ID.
Password	Password of the host user ID.
Initial Remote Directory	Name of the directory where you start browsing the mainframe files.
Local Save Directory	Name of the local directory to where the file is saved.

3. Click OK.

The FTP Chooser window is displayed, see Figure 4-7. The file is converted to XML format, and loaded into the Repository.

Figure 4-7 FTP Chooser



4. Select a file (or files) from the tree and click OK. The file(s) is downloaded, data mined and loaded into the repository.

Creating a New Data Source

The data source contains all the information needed to connect to the CICS system, and stores all the function objects. In addition, the data source determines which system to mine, and where to place the function objects.

To Create a New Data Source

1. On the CICS Management Console, click the Create New Data Source icon. The Creating Data Source window is displayed. See Figure 4-8.

Figure 4-8 Creating Data Source Window



Connection Details	
DataSource Name	<input type="text"/>
AppId	<input type="text"/>
Conversation Type	<input type="text"/>
LU	<input type="text"/>
Request	<input type="text"/>
Stub Request	<input type="text"/>
Target System ID	<input type="text"/>
Transaction Name	<input type="text"/>
Target Transaction Name	<input type="text"/>
Use Stub	<input type="text"/>
Hold Conversation	<input type="text"/>

User and Host Information	
Userid	<input type="text"/>
Password	<input type="text"/>
Host	<input type="text"/>
Port	<input type="text"/>

Pooling Parameters	
Max Pool Size	<input type="text" value="20"/>
Max Wait	<input type="text" value="3"/>
Monitor Interval	<input type="text" value="10"/>
Steady Pool Size	<input type="text" value="10"/>
Unused Max Life	<input type="text" value="300"/>
In Use Timeout	<input type="text" value="300"/>
Extended Timeout	<input type="text" value="300"/>
Debug Level	<input type="text" value="1"/>

OK Cancel

The Creating Data Source window contains information about the following:

- Connection Details
- User and Host Information

- Pooling Parameters

Connection Details

Table 4-2 lists information fields from the Connections Detail area needed to connect to the CICS system.

Table 4-2 Connection Details

Variable	Definition
DataSource Name	Name of the CICS EIS in the Repository.
Applid	This field specifies a CICS program name that is to be invoked on the CICS system.
Conversation Type	Can be either "POOLED", or "DIRECT". Pooled is used for TCP/IP and Direct is used for SNA/APPC.
LU	The Logic Unit (LU) name where the transaction specified in TranName is defined if SRVXLINK is used. This is where SRVXLINK itself resides.
Request	Specifies the communication operation that the Relay (POOLED)/Client (DIRECT) performs. The following values are acceptable: SendAndEnd - Sends data to the server application, waits for a response, then ends the conversation. SendLast - Sends data to the server application and waits for a response. Send - Sends data to the server application. Receive - Receives data from the server application. End - Ends the conversation with the server. Quit - Aborts the conversation with the server.
Stub Request	Instructs SRVXLINK what to do. The following values are acceptable: EX - Execute the program without determining the unit of work. EC - Link to a program and commit to the unit at work. CO - Commit the unit of work. PR - The SRVXLINK is instructed to prepare to commit. RB - Rollback the unit of work.
Target System ID	Target CICS Region connected to the CICS data source.

Table 4-2 Connection Details (*Continued*)

Transaction Name	Informs CICS what program to start. In the CICS system, each transaction is identified by a four letter code, and is accessed with a program name.
Target Transaction Name	Used to specify the name of the transaction to be used only if TargetSRVX has been specified. If no name is specified, CICS supplies a default name.
Use Stub	Determines whether you are using the SRVXLINK program or not. Values are “Y” (Yes), or “N” (No).
Hold Conversation	Places the conversation on “hold” for the user until he wants to access it again. This option guarantees that the user will access the same CICS transaction on its next execution of an operation, within the same user interaction.

User and Host Information

Table 4-3 contains information fields from the User and Host Information area that are specific to the user and host.

Table 4-3 User and Host Information

Variable	Definition
Userid	Used ID of the host ID.
Password	Password of the Mainframe host.
Host	Name of the host computer where CICS is running.
Port	The port where iPlanet Application Server is connected to the CICS system.

Pooling Parameters

Table 4-4 lists and defines parameters that describe the configuration of the CICS connection pool. The parameters are set by the system administrator. Default parameter settings appear.

Table 4-4 Pooling Parameters

Variable	Definition
Max Pool Size	The maximum number of objects allowed in the pool. Set this number to the peak number of connections available to the server. If the number of objects is less than MaxPoolSize but exceeds SteadyPoolSize, objects are destroyed 3 seconds after they are returned to the pool.
Max Wait	The maximum time, in seconds, that a request for a physical object is held in the queue before the request times out and is destroyed.
Monitor Interval	(Optional) The time interval, in seconds, after which a thread is executed to monitor the current status of the pool. Default is 30 seconds. Typically, setting this number too low degrades performance, but it should be set to a number less than UnusedMaxLife.
Steady Pool Size	The number of unused objects that are kept in the pool until they time out.
Unused Max Life	The maximum time, in seconds, that a physical object remains unused in the pool. After this time, the physical object is destroyed.
In Use Timeout	Time interval set for an inactive “live” connection. When the set time is elapsed, the connection is closed.
Extended Timeout	Time interval set, in seconds, for an extended connection. When the set time is elapsed, the connection is closed.
Debug Level	(Optional) Determines type of message logging, as described by the following choices: 0: Logging turned off. 1: Logs only callback messages. 2: Logs all messages.

2. Enter in information into the fields, and Click OK.

The new data source is created and an Information window displays informing you that must restart the Management Console to use the newly created data source. See Figure 4-9.

Figure 4-9 New Data source Information Message.



3. Click OK, and restart the Management Console.

Editing a Data Source

You can edit an existing data source from the Management Console.

To Edit a Data Source

1. Click the Edit Data Source icon on the CICS Management Console to display the Choose Data Source list, see Figure 4-10.

Figure 4-10 Choose Data Source



2. Select the data source to be edited, and click OK.

The Edit Data Source window is displayed, see Figure 4-11.

Figure 4-11 Edit Data Source Window

The screenshot shows a window titled "Edit Data Source" with three main sections:

- Connection Details:** Includes fields for Applet, Conversation Type, LU, Request, Stub Request, Target System ID, Transaction Name, Target Transaction Name, Use Stub, and Hold Conversation.
- User and Host Information:** Includes fields for Userid, Password, Host, and Port.
- Pooling Parameters:** Includes fields for Max Pool Size (20), Max Wait (3), Monitor Interval (10), Steady Pool Size (10), Unused Max Life (300), In Use Timeout (300), Extended Timeout (300), and Debug Level (1).

At the bottom of the window are "Ok" and "Cancel" buttons.

3. Edit the appropriate fields and click OK.
The data source is updated and loaded into the repository.
4. Restart the Management Console.

Mapping User Privileges

The CICS User Management function enables the administrator to assign access privileges to the EIS. There are two separate user identity domains: Web users and Enterprise System users. An incoming request has a specific web user identity associated with it. The web identity needs to be mapped to an Enterprise System user identity specific to the data source.

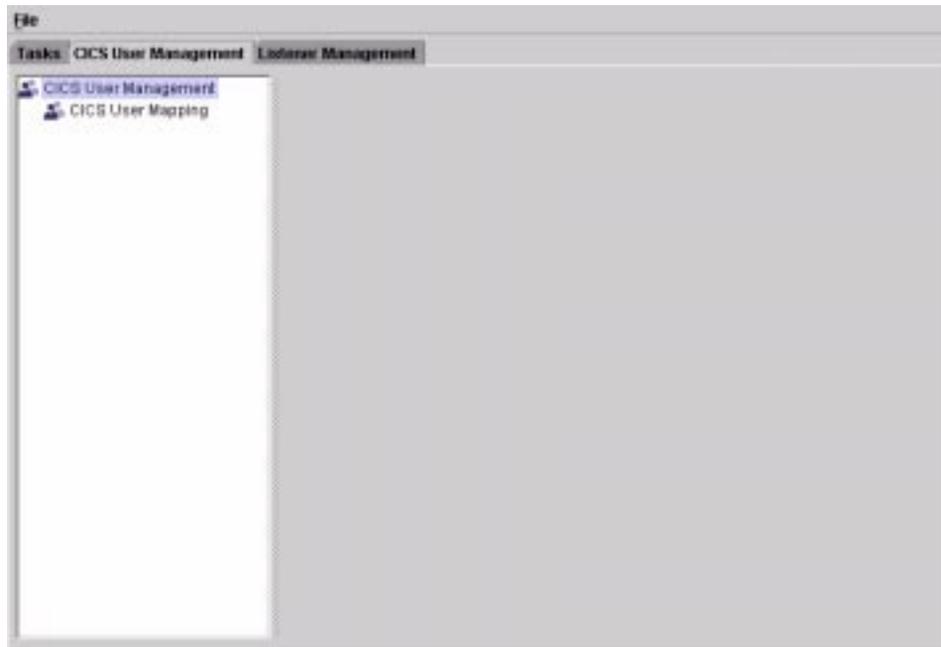
The user mapping service maintains user mapping tables. There are two distinct tables:

- Enterprise System user identities
- Web to Enterprise System mappings

The mapping service provides the connector with methods to determine the Enterprise System identity, given a web-identity, as per the mapping tables opened using the Management Console. The Enterprise System user table is populated using the Data Mining Tool in the Management Console. The data source administrator can populate the user mapping table interactively, through the Management Console.

To Perform User Mapping

1. From the CICS Management Console window, click the CICS User Management tab.
2. Click on the CICS User Mapping node. Figure 4-12 is displayed.

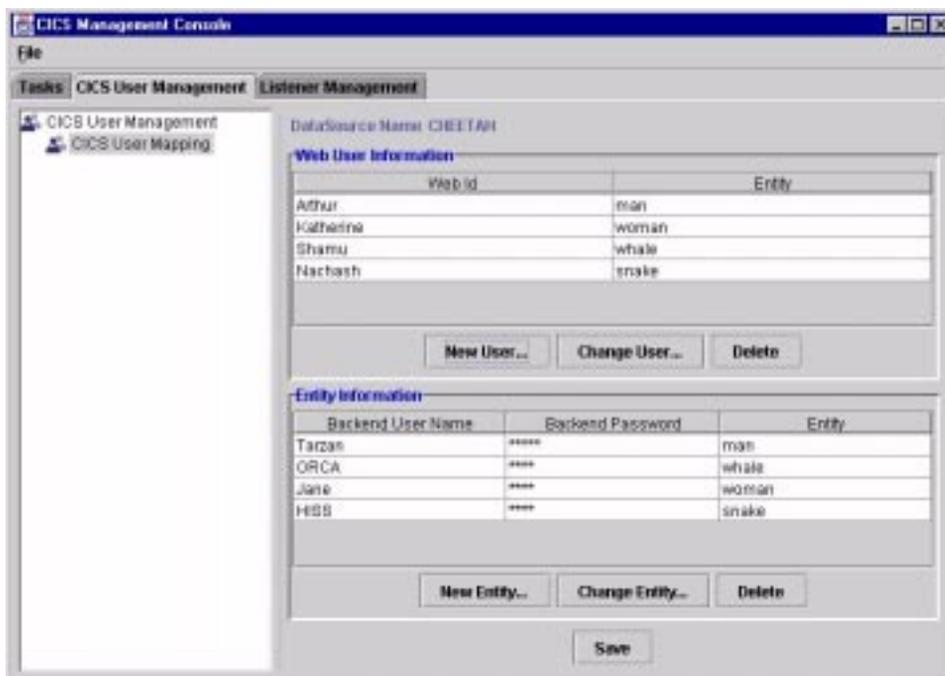
Figure 4-12 CICS User Management

The tree view represents the general topics available. The browser view displays the details of the node selected.

3. Double click on the CICS User Mapping icon in the tree. A Getting Data Sources window (work in progress window) is displayed replaced by the Choose Data Source window. See Figure 4-10.
4. Select a data source from the Choose Data Source window and click OK.

The CICS User Mapping window is displayed with the Web and Entity Information for the selected data source. See Figure 4-13.

Figure 4-13 CICS User Mapping



The CICS User Mapping window displays two fields of information:

- Web User Information
- Entity Information

Using the Web User Information area you can:

- Add New User
- Change User
- Delete a User

Using the Entity Information area you can:

- Add a New Entity
- Change Entity
- Delete an Entity

To save your changes click Save.

Web User Information

The Web User Information area is used to map a web user identity to a EIS user identity. The Web ID is used by the server to enable users to move freely across multiple systems. The administrator assigns Entity Information before the Web User Information, since the Web User Information is based on the parameters defined in the Entity Information.

Table 4-5 lists and defines fields in the Web User Information area.

Table 4-5 Web User Information Parameters

Parameter Name	Definition
Web ID	ID assigned to users on the system.
Entity	Name of the assigned EIS user. The naming convention is dependent upon the database type used.

Add New User

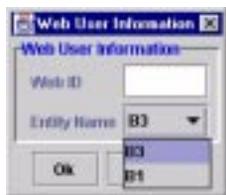
This option creates a new web user.

To Add a Web User

1. Click New User.

The Web User Information window is displayed. See Figure 4-14.

Figure 4-14 Web User Information Window



2. Type in the Web ID.
3. Select an Entity Name from the available names.
4. Click OK when finished to return to the main window.

Change User

This option enables you to change an existing user.

To Change a Web User

1. Click Change User.
2. Edit the desired field.
3. Click OK. You are returned to the CICS User Mapping window.

Delete

This option enables you to delete an existing web user.

To Delete a Web User

1. Select the web user.
2. Click Delete.

The web user is deleted and you are returned to the main window.

Entity Information

The Entity Information area is used to list data about EIS entities assigned to the web users. Table 4-6 lists and describes these parameters for the Entity Information window.

Table 4-6 Entity Information Parameters

Parameter Name	Definition
Backend User Name	Name of the backend (EIS) user
Backend Password	Backend (EIS) password, assigned by the user.
Entity	Backend (EIS) entity name, assigned by the system administrator.

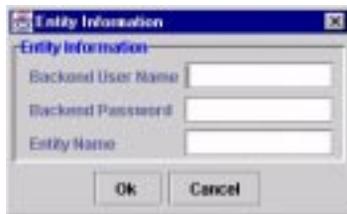
Add a New Entity

You can add a new EIS entity in the CICS User Management.

To Add an Entity

1. To add a new EIS entity, click New Entity.

The Entity Information window is displayed. See Figure 4-15.

Figure 4-15 Entity Information Window

2. Enter the Entity information (Backend User Name, the Backend Password, and Entity Name).
3. Click OK.

The new entity information is displayed in the Entity Information area of the window.

Change Entity

You can change the EIS entity in the CICS User Management.

To Change Entity Information

1. Click Change Entity.
2. Edit the desired field(s).
3. Click OK.

The edited entity is displayed in the Entity Information area of the window.

Delete an Entity

You can delete a EIS entity.

To Delete an Entity

1. Select the entity.
2. Click Delete.

NOTE You can not delete an EIS entity if there are web users associated with the entity.

When you have completed all actions in the Entity Information window, click Save. All your additions and changes are saved to the system.

Listener Management

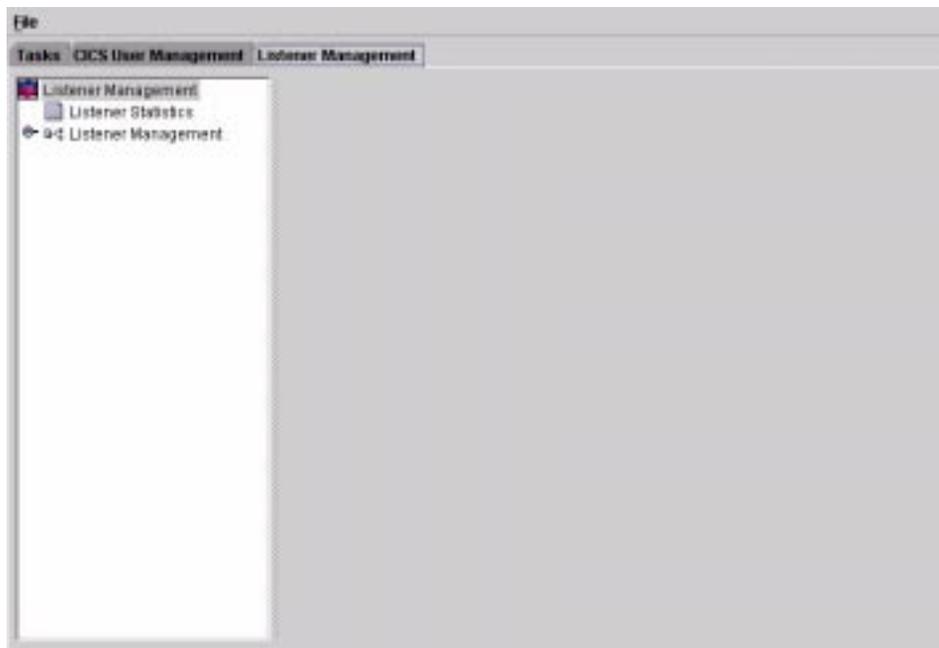
The Listener Management enables the administrator to view and edit Listener parameters, logon as a different user, and create new Listeners.

To Enter the Listener Management Function

1. From the CICS Management Console window, click the Listener Management tab.

Figure 4-16 is displayed.

Figure 4-16 Listener Management Window



Listener Management has two subsections:

- Listener Statistics
- Listener Management

Listener Statistics

The Listener Statistics lists statistics associated with the Listener. See Figure 4-17.

Figure 4-17 Listener Statistics

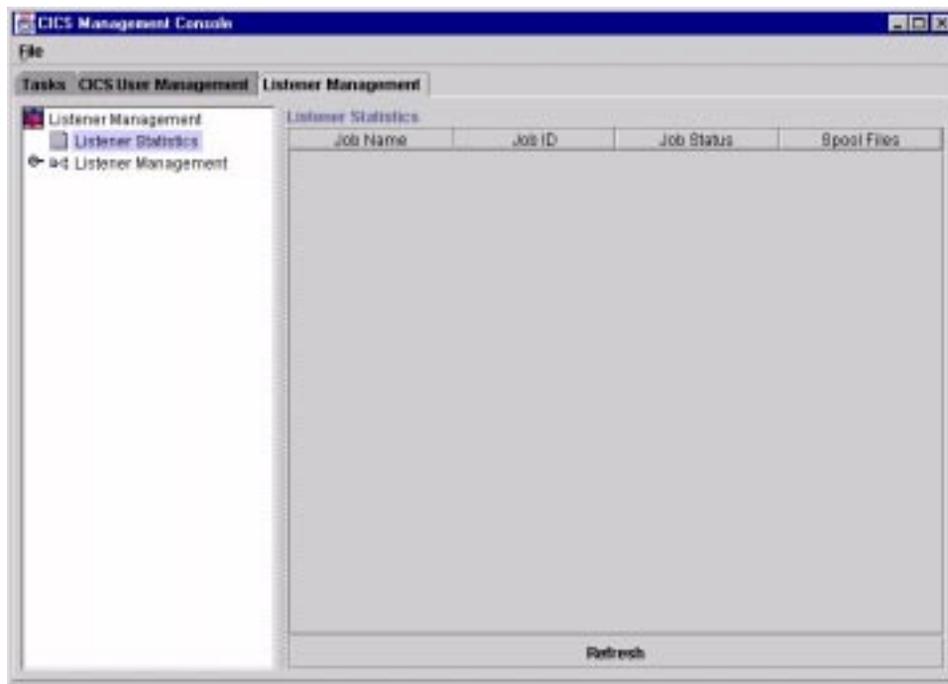


Table 4-7 lists and defines the variables of the Listener Statistics.

Table 4-7 Listener Statistics

Variable	Definition
Job Name	Name of the job under the Listener.
Job ID	ID of the job under the Listener.
Monitor Interval	Time period set for monitoring the Listener.
Spool Files	

To View Listener Statistics

1. In the Listener Management tab of the Management Console for CICS, click on Listener Statistics.

The mainframe login data window is displayed. See Figure 4-18.

Figure 4-18 Mainframe Login Data

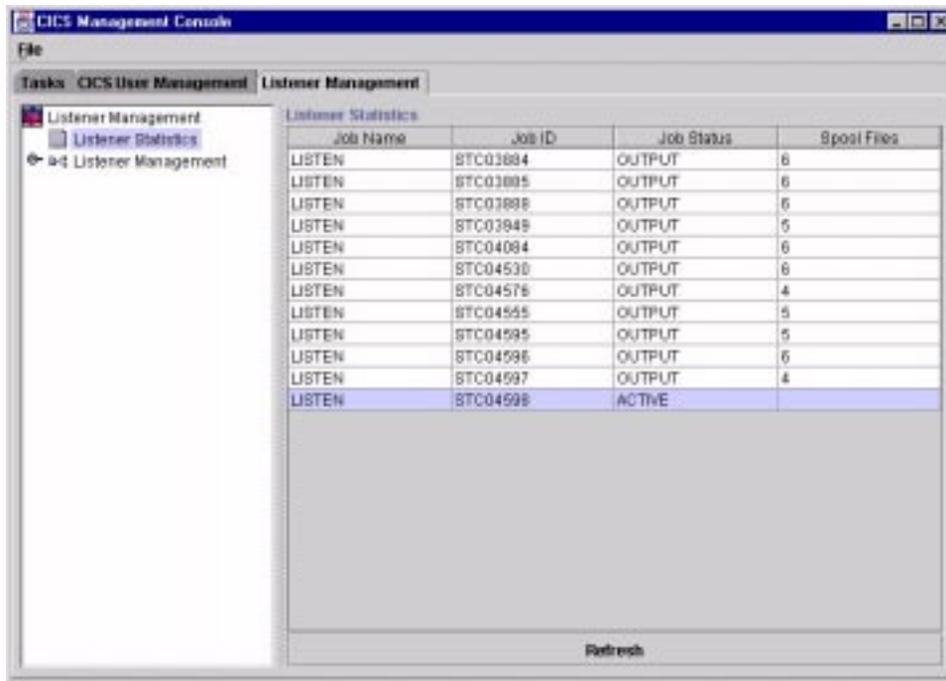


2. Enter in the Login Name, Password, and Host Name for the mainframe, and click Login.

The mainframe is logged in.

3. Click on Listener Statistics. The Listener Statistics are displayed, see Figure 4-19.

Figure 4-19 Listener Statistics



Job Name	Job ID	Job Status	Spool Files
LISTEN	STC03884	OUTPUT	6
LISTEN	STC03885	OUTPUT	6
LISTEN	STC03888	OUTPUT	6
LISTEN	STC03948	OUTPUT	5
LISTEN	STC04084	OUTPUT	6
LISTEN	STC04530	OUTPUT	6
LISTEN	STC04576	OUTPUT	4
LISTEN	STC04555	OUTPUT	5
LISTEN	STC04595	OUTPUT	5
LISTEN	STC04596	OUTPUT	6
LISTEN	STC04597	OUTPUT	4
LISTEN	STC04598	ACTIVE	

Refresh

To update the screen, click Refresh.

Listener Management

The Listener Management option allows you to:

- Login in as a Different User
- Create (Start) New Listener

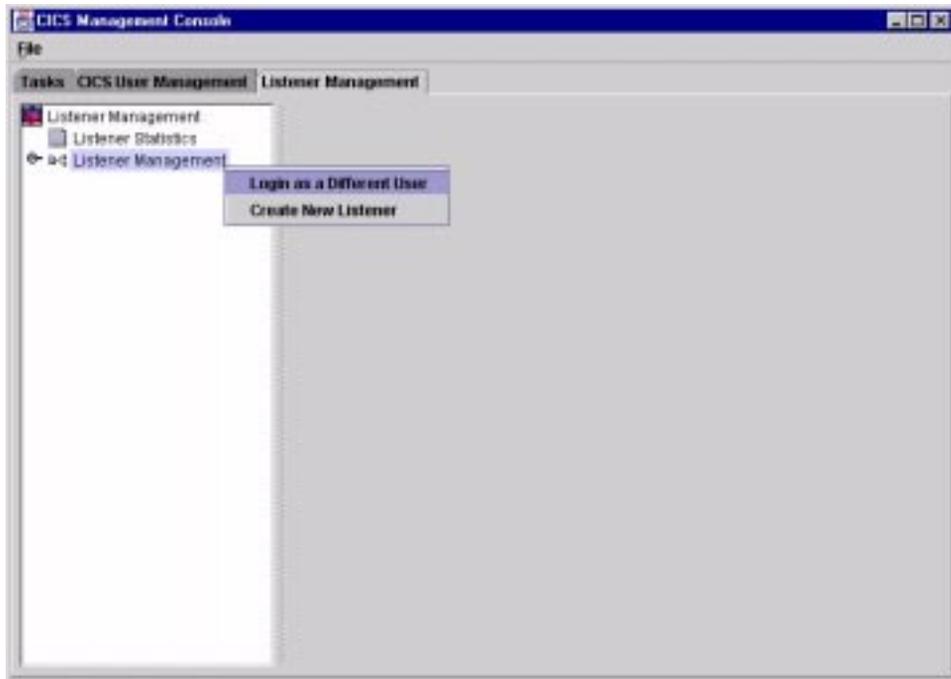
Login in as a Different User

In the Listener Management window, you can login as a different user to view information about the Listener, or create a new Listener.

To Login as a Different User

1. In the Listener Management tab, right mouse click on the Listener Management option. A pop up menu is displayed, see Figure 4-20.

Figure 4-20 Listener Management Options



2. Select the Login as a Different User option.

The Mainframe Login Data window is displayed. See Figure 4-21.

Figure 4-21 Mainframe Login Data Window



Table 4-8 describes the Mainframe Login Data fields.

Table 4-8 Mainframe Login Data

Variable	Definition
Login Name	Login name used to login to the mainframe.

Table 4-8 Mainframe Login Data (Continued)

Password	Password used for accessing the mainframe.
Host Name	Name of the host where the mainframe is located.

3. Enter in the mainframe login data, and click Login.

You are now logged in as a different user.

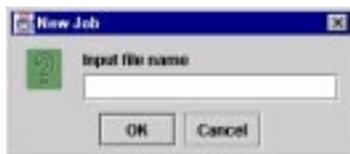
Create (Start) New Listener

Listeners are created in the main frame computer. This option allows you to start a new listener on a port other than the one already used.

To Create New Listener

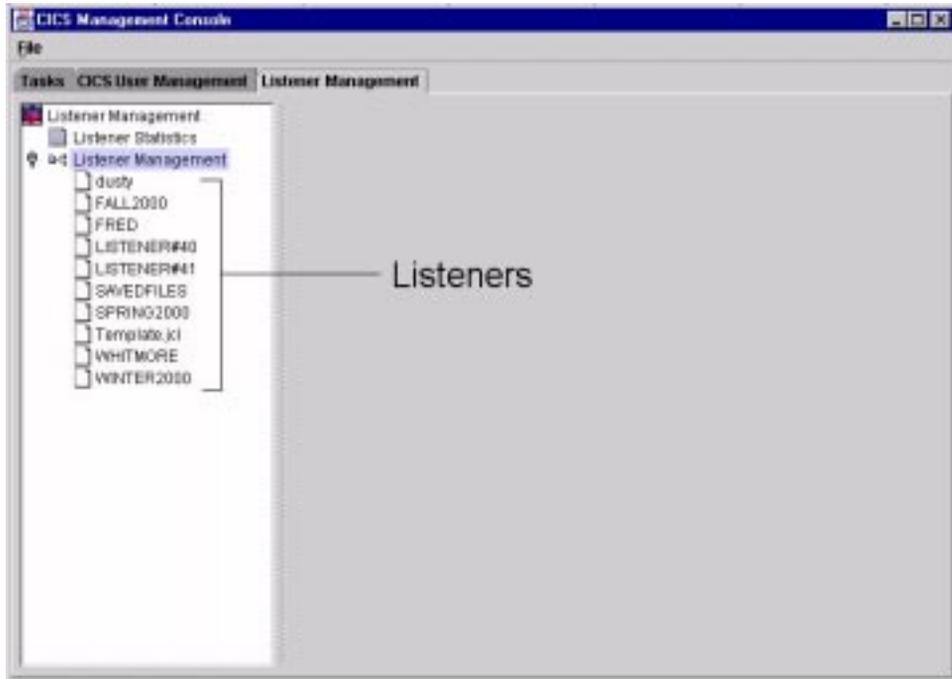
1. In the Listener Management tab, right mouse click on the Listener Management option. A pop up menu is displayed, see Figure 4-20.
2. Select the Create New Listener option.

The New Job window is displayed. See Figure 4-22.

Figure 4-22 New Job Window

3. Enter in a new file name, and click OK.
A new Listener is created.
4. You can check the new Listener listing by double clicking on the Listener Management option. The Listeners are displayed in a tree, see Figure 4-23.

Figure 4-23 Listeners



The Repository Browser

All the definitions for the connector using the Management Console are saved in a repository. The Repository Browser is the Graphical User Interface to the repository and is used only for viewing information about the connector. Most management tasks are done using the Management Console.

The Repository Browser contains the following:

- information representing the connection to the EIS
- all the function objects that you mine from the EIS
- user mapping information
- connection pools

All of these components are part of a data source.

Although the repository service does not impose any specific organization (schematics) on the repository contents, the UIF runtime requires the contents of the repository to be organized in a specific and well defined way. This organization is the UIF repository schematics. The UIF runtime expects specific information in specific places in the repository hierarchy. Therefore, repository contents are not supposed to be arbitrarily modified by the user. Contents are modified as part of the specific administration activities controlled by the Management Console, which enables the administrator to use the import and export functions appropriately. In addition, the UIF runtime service runs a consistency check on repository contents at startup.

Repository Browser Functions

The following functions are available in the Repository Browser:

The following functions are available in the Repository Browser:

- Import — allows you import XML files into the repository
- Export — allows you export XML files from the repository
- Delete — deletes nodes from the data structure in the repository
- Refresh — refreshes the Repository Browser display
- Import Root — imports an XML file and creates the root node

Loading Data Into the Repository Browser

There are two ways to load data into the Repository Browser. You can either load the data automatically into the Repository Browser via the Management Console, or you can manually load the XML file using the Import function.

To Access the Repository Browser from Windows NT

- Select Start > Programs> iPlanet Application Server 6.0> UIF 6.0 SP1 Repository Browser.

The Repository Browser is displayed. See Figure 4-24.

To Access the Repository Browser from Solaris

1. Enter the following command lines:

```
cd iplanet/ias6/ias/APPS/bin
```

and

```
./bspbrowser.sh
```

The Repository Browser is displayed. See Figure 4-24.

Figure 4-24 Repository Browser

The Repository Browser is divided into two panes. When you open the browser the left pane displays nodes containing the adapter (connector) types and data sources. These nodes are hierarchical and can be expanded to show details of the data structure and function objects. The right pane displays the properties of the node selected in the left pane.

For a more detailed description of the node contents, refer to the *iAS Enterprise Connector for CICS Developer's Guide*.

The Repository Data Structure

The Repository Browser contains the following nodes that are installed automatically when you install the UIF:

- root node
- adapterTypes
- dataSources

adapterTypes

The adapterTypes node contains a default data structure for each type of connector that is installed. The adapterTypes section contains one subtree entry per adapter. The entry contains common definitions, which form the basis for defining data sources on the connector.

dataSources

The dataSources node contains a default dataSource structure that is set when you install a connector. You can define several data sources for each adapterType. The dataSource section contains subtree entries, each of which is a logical UIF data source. A data source corresponds to a specific EIS and is supported by the corresponding adapterType.

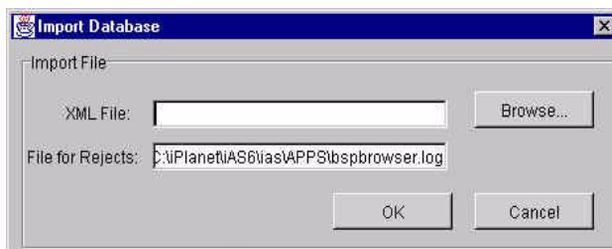
The data source definition activity is tightly controlled by the Management Console. There are two distinct user roles: the data source administrator and the application developer. The data source administrator is responsible for creating and administering data source entries, while the application developer develops applications that access these data sources.

A data source definition is usually heavily pre configured by the data source administrator. The application developer usually uses pre configured function objects, much like EJBs would be used with the deployment descriptor already set. This substantially isolates the application developer from the EIS specific interaction issues. See the *iPlanet Application Server Enterprise Connector for CICS Developer's Guide* for more information about programming applications.

To Import XML Files

1. Select Import.

Figure 4-25 is displayed.

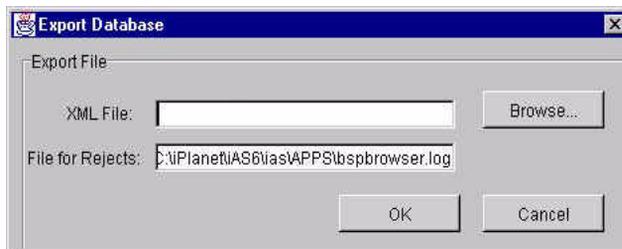
Figure 4-25 Import Database Window

2. Enter the XML filename that you want to import and click OK.

To Export XML Files

1. Select Export.

Figure 4-26 is displayed.

Figure 4-26 Export DataBase Window

2. Enter the XML filename that you want to Export and click OK.

To Delete Nodes

1. Select Delete.
2. Select the Node you want to delete

A warning message is displayed.

3. Click OK.

The display in the Repository Browser is updated with current data.

To Refresh the Display of Repository Contents

Click Refresh.

To Import the Root Node into the Repository Contents

1. Click Import Root.

The Import Database window is displayed as shown in Figure 4-25.

2. Enter the XML filename to import and click OK.

The root node and its contents are imported into the repository.

Configuring the Application

This chapter is intended for administrators who configure operational parameters that support the UIF for the iPlanet Application Server Enterprise Connector for CICS. Most configuration parameters are stored in the UIF repository. The CICS Management Console enables you to modify these parameters.

This chapter describes pooling concepts when you set up a pooling configuration node in the UIF repository.

The chapter contains information about the following topics:

- About Pooling
- Bind Durations
- Pooling Configuration

About Pooling

Pooling enables you to share resources. In the UIF, pools are used to share connections to a backend system from the iPlanet Application Server. Service providers allocate and reuse connections from pools to avoid unnecessary creation and destruction of connections to the backend. Pools are defined in the Repository on a per data source basis. This means that each data source defines its own connection pool, which can be individually configured.

An object in a UIF pool represents a connection to a backend system. Each pool contains a specified maximum number of objects to constrain the maximum number of simultaneous connections. A pool typically holds a number of objects that represent the number of connections in a steady state.

When a iPlanet Application Server application enables a service provider, the connector attempts to obtain a connection object from the pool.

If the maximum number has been reached and no object is available after a specified waiting period, the request times out. You can configure the time out period.

If a pool object remains unused for a period of time, the object is destroyed. You can specify how long to wait before the object is destroyed.

The use and longevity of pool objects are monitored by a thread that executes periodically. You can specify the interval after which the monitor thread executes. Typically, the internal thread execution is smaller than the waiting period before an object is destroyed. However, setting the monitoring interval too small can degrade performance. You specify the frequency in the `MonitorInterval` node of the pooling connection; for more information see [Pooling Configuration](#).

Bind Durations

A pooled connection is bound to a servlet for a specified period of time, called a bind duration, which is specified in a service provider type. Typically, a bind duration is only for the length of time it takes to execute the method requiring the connection, although some operations, such as beginning a transaction, may require a longer bind duration.

UIF supports three bind durations. Table 5-1 lists and describes these supported bind durations.

Table 5-1 Bind Durations

Bind Duration	Description
method-bound-poolable	The pooled connection is bound for the duration of the method call.
sp-bound-poolable	The pooled connection is bound for the life of the service provider; the connection is then returned to the pool.
not-poolable	The connection is not poolable. The connection is bound for the life of the service provider and is destroyed when the service provider is destroyed.

Bind durations are specified in the repository. The following example shows that the `<adaptor>Conn` service provider type's bind duration is `method-bound-poolable`:

```
serviceProviderTypes
<adaptor>Conn
```

```
bindDuration string method-bound-poolable
```

Bind Duration Escalation

The bind duration may be changed dynamically by the connector. For example, at the beginning of a transaction, a connector may escalate the bind duration from method-bound to sp-bound, and then reset the bind duration to method-bound at the end of the transaction.

Bind Duration Time-outs

An sp-bound connection cannot be used by another service provider until the connection has been released by the first service provider. If the first service provider does not release the connection in a timely manner, a time-out occurs and the connection is forcibly released and returned to the pool. The time-out prevents a "runaway" service provider that failed to call `disable()` from keeping the connection indefinitely.

Pooling Configuration

You can specify the pooling configuration for a service provider by specifying the pooling configuration characteristics in the repository. Table 5-2 lists and describes pooling configuration parameters.

Table 5-2 Pooling Configuration Parameters

Parameter	Description
MaxPoolSize	The maximum number of objects allowed in the pool. Set this number to the peak number of connections available to the server. If the number of objects is less than MaxPoolSize but exceeds SteadyPoolSize, objects are destroyed three seconds after they are returned to the pool.
SteadyPoolSize	The number of unused objects that are kept in the pool until they time out. Set SteadyPoolSize to the steady state number of connections available from the host server.
MaxWait	The maximum time, in seconds, that a request for a physical object is held in the queue before the request times out and is destroyed.

Table 5-2 Pooling Configuration Parameters (*Continued*)

UnusedMaxLife	The maximum time, in seconds, that a physical object remains unused in the pool. After this time, the physical object is destroyed.
UnusedMaxLife	(Optional) The time interval, in seconds, after which a thread is executed to monitor the current status of the pool. Default is 30 seconds. Typically, setting this number too low degrades performance, but it should be set to a number less than UnusedMaxLife.
DebugLevel	(Optional) Determines type of message logging, as described by the following choices: 0: Logging turned off. 1: Logs only callback messages. 2: Logs all messages.

The example below is used to show a "generic" pool, for specific information about the connector. The following entries define the pool configuration for the <adapter>Conn service provider:

```

pools
  <adapter>Pool
    sptype reference
    bsp.adapterTypes.<adapter>.serviceProviderTypes.cicsConn
    config:do
      DebugLevel integer 1
      MaxPoolSize integer 20
      MaxWait integer 3
      MonitorInterval integer 10
      SteadyPoolSize integer 10
      UnusedMaxLife integer 300

```

Operating the TELCO Sample

This appendix describes how to configure, install and operate the TELCO Customer Service sample that requires DB2 for OS390. The sample demonstrates connector capabilities for CICS and DB2.

The following topics are described:

- Uploading Files for the TELCO Sample
- Installing the TELCO Sample on the Mainframe
- Activating the TELCO Sample

Uploading Files for the TELCO Sample

You will need to upload files before installing the TELCO sample.

To Upload Files for the TELCO Sample

1. Allocate one data set on MVS with `lrecl=80, blksize=3120, recfm=fb`.

For example, `IAS.CICS.DBRM.XMIT`.

2. Use the 3270 emulation program to transfer the file `DBRM.XMT` to the respective MVS data set.

Use the MVS/TSO binary transfer type and fixed-file option.

3. Issue the following TSO command:

```
RECEIVE INDATASET( IAS.CICS.DBRM.XMIT ) .
```

4. At the prompt, enter the following:

```
DATASET ( IAS . V6R0M0 . DBRM . LIB )
```

where `IAS . V6R0M0 . DBRM . LIB` is the name of the Sample-2 (TELCO) DBRM library.

Installing the TELCO Sample on the Mainframe

The TELCO sample should be installed to verify that CICS connector is installed properly. Be certain to adapt the JCL jobs to your installation requirements.

To Install the TELCO Sample

1. Adapt and run the CRETAB member in the CICS installation library to define DB2 objects.
2. Adapt and run the BIND member in the CICS installation library to bind packages for TELCO sample programs.

This step requires the supplied DBRM library.

3. Adapt and run the CICSDEF2 member in the CICS installation library to define sample TELCO programs in the CICS Resource Definition.

This step also contains the definition for the CICS-DB2 attachment.

4. Ensure that the supplied CICS LOAD library containing the TELCO sample modules is present in the DFHRPL list during the CICS startup.
5. Restart CICS and the CICS-DDB2 attachment after completing all of the installation steps.

Activating the TELCO Sample

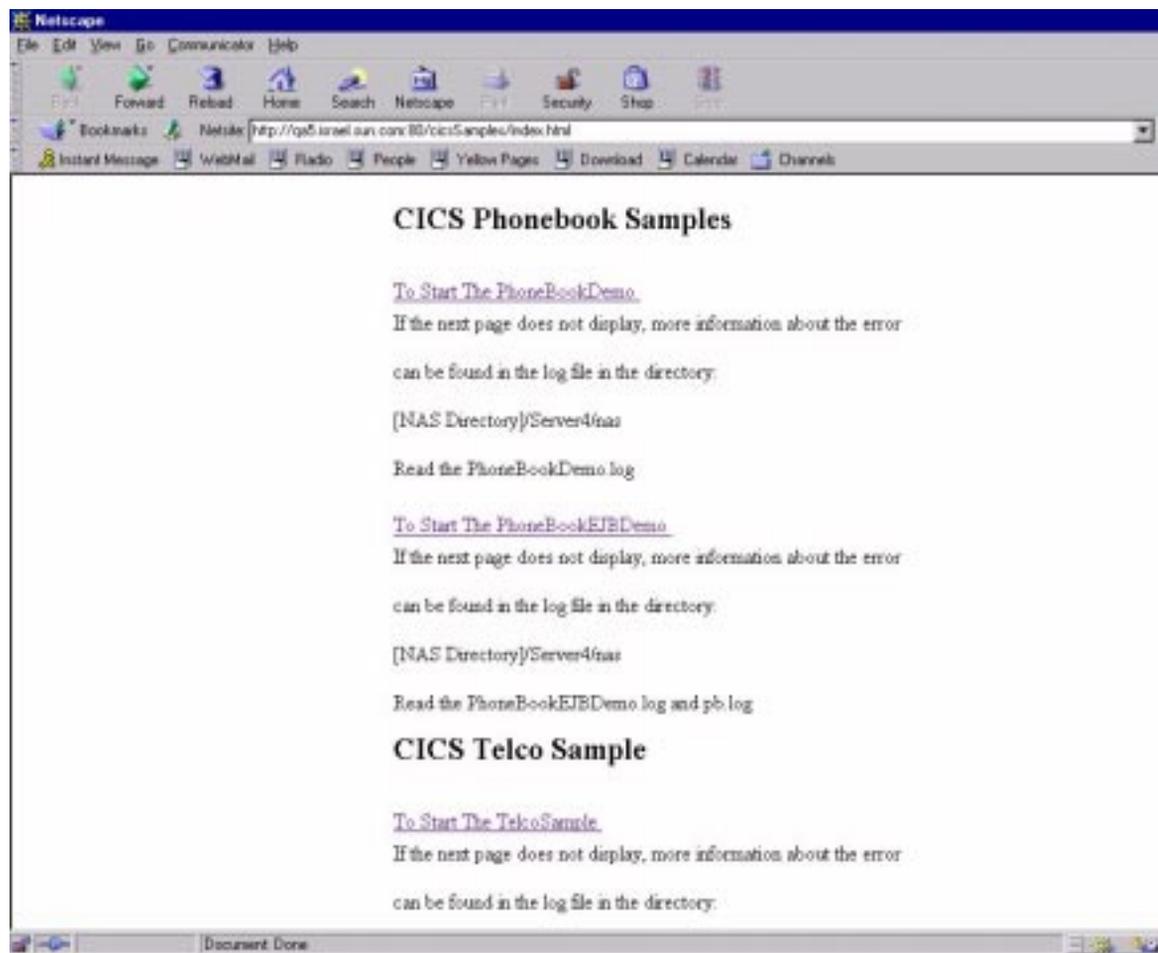
After you have uploaded the files and installed the TELCO sample software you can activate the sample and verify that the CICS connector is installed properly.

To Activate the Samples

1. Enter the following URL:

<http://localhost/cicsSamples/index.html>

Figure A-1 CICS Phonebook Sample

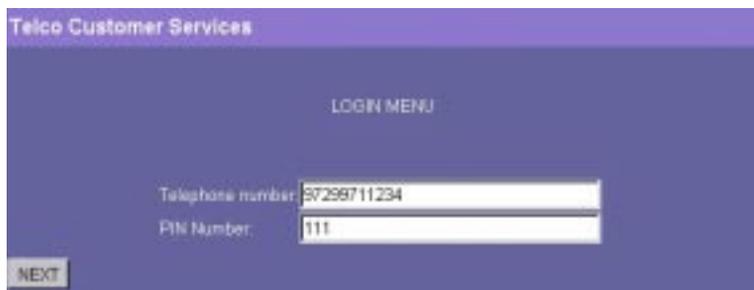


2. Click on “To Start the Telco Sample”.

To Log In

1. Type your telephone number and PIN number in the Login Menu dialog box, as seen in Figure A-2.

Figure A-2 Login Menu



Telco Customer Services

LOGIN MENU

Telephone number: 57298711234

PIN Number: 111

NEXT

2. Click Next to display the Telco Customer Service Main Menu. See Figure A-3.

Figure A-3 Main Menu



Telco Customer Services

MAIN MENU

Update Customer details Services Billings

To Update Customer Details

- Click Update Customer Details.

The Update Customer Details dialog box appears. See Figure A-4. This dialog box is used to update the name, address, and telephone number of the customer. The payment method, credit card number, and credit card expiration date are not displayed and cannot be changed.

Figure A-4 Update Customers Details

The screenshot shows a web application interface for updating customer details. The title bar reads 'Telco Customer Services'. Below it, the heading 'UPDATE CUSTOMER DETAILS' is centered. The form consists of the following fields:

Telephone Number:	97298711234
Last Name:	Gold
First Name:	Karen
Billing Address:	10 Hasadnaot st.
Billing City:	Herzliya
Billing State:	
Billing Country:	ISRAEL
Billing Zip Code:	46733
Payment Method:	<input type="button" value="v"/>
Credit Card Number:	
Exp. Date:	

An 'UPDATE' button is positioned at the bottom left of the form area.

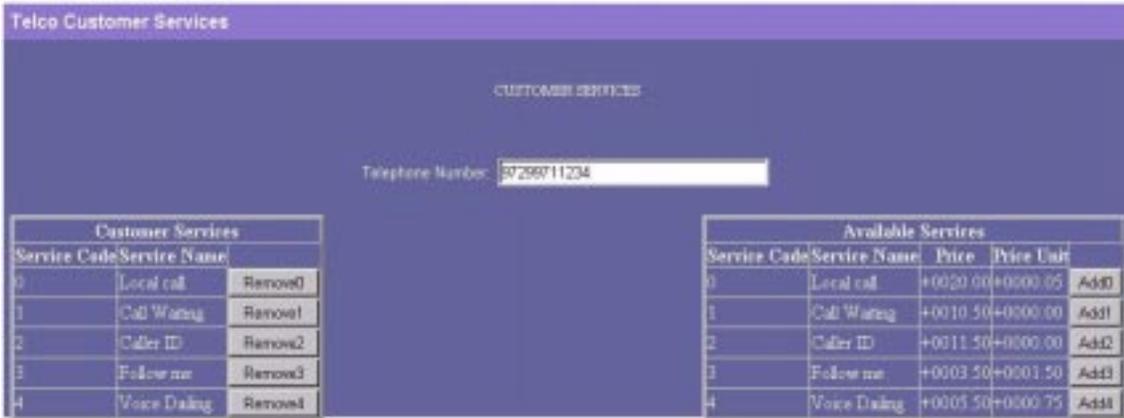
3. Enter the changes and click Update.
4. Press Enter to refresh the main menu.
5. Press the Back button to return to the main menu.

To Display Customer Services

- From the main menu click Services.

The Customer Services dialog box appears. See Figure A-5.

Figure A-5 Customer Services



To Display the Customer's Monthly Billing

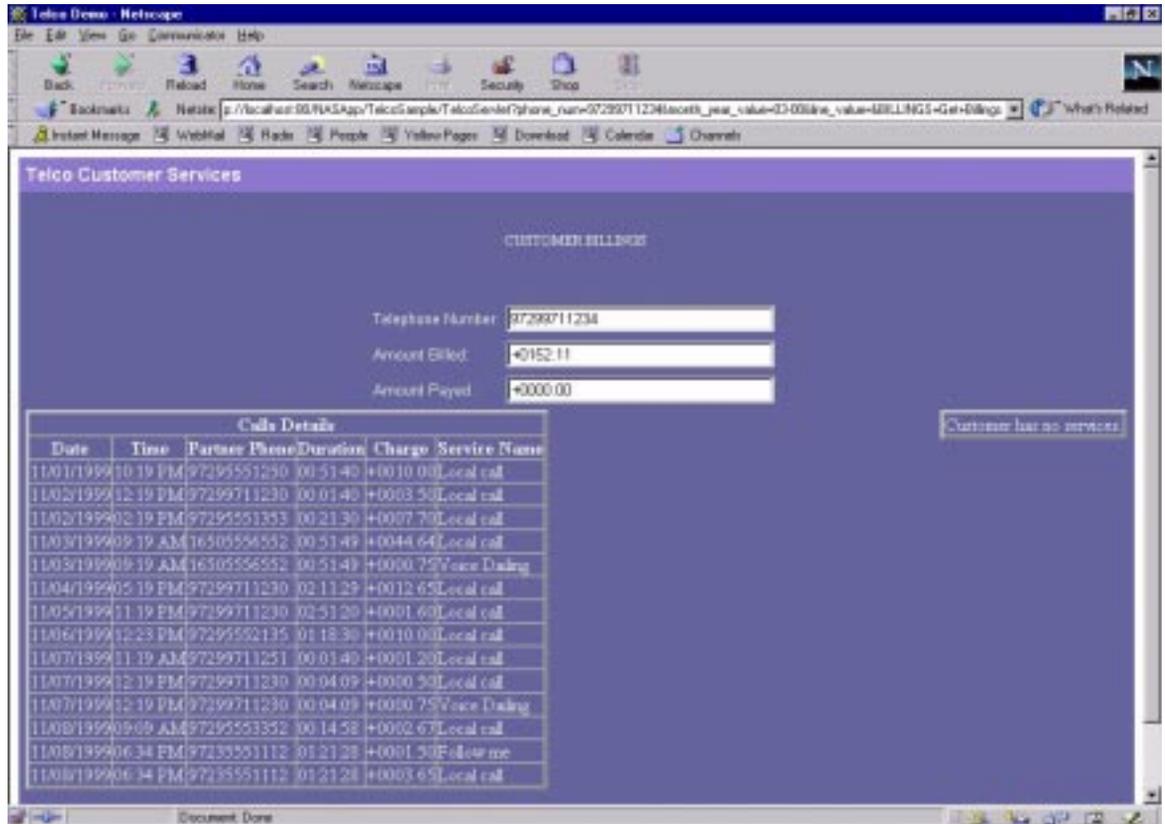
1. Enter the telephone number and billing month, and click Get Billings. See Figure A-6.

Figure A-6 Customer Billings Window



The Customer Billings window is displayed, as seen in Figure A-7.

Figure A-7 Customer Billings in Browser



Activating the TELCO Sample

Glossary

API (Application Programming Interface) Software that an application utilizes to carry out and request lower-level services by the operating system. In addition, a set of standard software data formats that application programs use to initiate contacts with other programs, computers, and systems.

Applet A Java program that can be distributed as an attachment in a World Wide Web document and executed in a Java-enabled web browser.

Applications Programmer Responsible for writing servlets or EJBs that call the UIF API. Uses the Repository Browser to determine the available data types and access methods.

Array Object Contains data objects or primitive values as elements in the object. Array elements must be homogeneous. Each element within the array object is referred to by an integer that specifies its position in the array object.

Attribute Field Attributes that describe allowable attributes for the field where the input and output are located.

CICS (Customer Information Control System) An IBM communications program designed to allow transactions entered at a remote site to be processed concurrently by a mainframe host.

Daemon A program that is not explicitly invoked, and remains idle until summoned (called on).

Data Block Describes the input and output of operations. The data block can only contain two structures: input and output. All input and output structures contain fields that can be only one of the following types: primitive, structure, or array.

Data Object Used by the UIF to represent data or metadata in a generic fashion. Data objects are used to exchange data between a servlet and the UIF, and between the UIF and the connector.

Data Source Contains all the information needed to connect to the PeopleSoft system, and stores all the function objects. In addition, the Data Source determines which system to mine, and where to place the function objects.

Deployment Deploying an application includes installing all of the application's files, and registering all of its components on the destination server. You deploy an application using the Deployment Tool, a separate tool accessible from the iPlanet Application Server. An application must be deployed before it can be used.

EJB (Enterprise Java Beans) A server-side component architecture for writing reusable business logic and portable enterprise applications. They are written entirely in Java and run on any EJB compliant server. They are operating system, platform, and middleware independent, thereby preventing vendor lock-in.

EIS (Enterprise Information System) Referred to as a backend system.

Enterprise Connector The component in iPlanet Application Server Enterprise Connector for R/3, PeopleSoft, Tuxedo, or CICS that enables you to access the appropriate backend system.

ERP (Enterprise Resource Planning) A multi-module software system that supports enterprise resource planning. An ERP system typically includes a relational database and applications for managing purchasing, inventory, personnel, customer service, shipping, financial planning, and other important aspects of the business.

Function Object A group of business methods available for execution on the specific enterprise server. These objects are derived from metadata mined from the enterprise server that share a common state.

iPlanet Application Server The iPlanet Application Server provides the most robust e-commerce platform for delivering innovative and leading edge application services to a broad range of servers, clients, and devices.

iWS (iPlanet Web Server) A web server that is ideally suited to the Java development community for use as the development and test platform for web applications.

Java An object-oriented programming language developed by Sun Microsystems, Inc. to create executable content (i.e, self-running applications) that can be easily distributed through networks like the Internet.

Load Balancing Load Balancing is the configuration of a computer system, network, or disk subsystem to more evenly distribute the data and/or processing across available resources in order to increase the speed and reliability of transmissions.

Operations Directory A directory with operations that contain data blocks and property sets.

Primitive Object A data type that contains a single value of an integer, float, double, fixed-length string, or variable-length string.

Repository A specialized structure where all the module's functions are stored for the use of the iPlanet Application Server Enterprise Connector.

Repository Browser The component that enables you to browse data (content) in the repository, and to view the available functions (input and output parameters) for the backend system.

Runtime Object The entry point into the UIF.

Service Provider Object The logical representation of a connection to a back-end system, which must be enabled before it can be used. Typically, the service provider object is not bound to a physical connection until absolutely necessary.

Server Tier The server tier is represented by an application server and optionally a web server such as the iPlanet Web Server Enterprise Edition. The server tier houses the business logic (Enterprise Java Beans of your application servlets), and provides scalability, high availability load balancing, and integration with a variety of data sources.

Servlet An applet that runs on a server, usually meaning a Java applet that runs on a Web server.

Structure Object Contains other data objects or primitive values whose fields are heterogeneous such as fields, and whose fields are heterogeneous. Each object within the structure object is referred to by a string that represents the field name. Field names have a maximum length of 32 characters.

System Name The system name used. For load-balancing connection only.

Three-tier Application Model A model of an application system that is composed of the following three tiers: Client, Server, and Backend (EIS).

Type Information Objects Structured objects that contain the type information of a data object; i.e. definition of the fields in a structure and the fields corresponding data types. Instances of data objects can be created of type information objects. Each of these instances contain a reference to a type of information object. Numerous data types can share the same type information object.

UIF (Unified Integration Framework) An application programming framework that provides a single Application Programming Interface (API) to access different backend systems.

URL (Universal Resource Locator) An address for a resource or site (usually a directory or file) on the World Wide Web, and the convention that web browsers use for locating files and other remote services.

XML (eXtensible Markup Language) A common cross-platform format document used to populate a repository.

Worker A worker is an out-of-process unthreaded procedure. The conversation to the backend system is done by the worker process. The worker returns the results to the connector using the proprietary protocol.

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