



THE ENTERPRISE MIDDLEWARE SOLUTION

BEA TUXEDO

Installation Guide

BEA TUXEDO Release 6.5
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BEA TUXEDO Installation Guide

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Preface

About This Guide

This book explains how to install the BEA TUXEDO system software and online documentation. The BEA TUXEDO system is a platform for distributed online transaction processing applications.

Intended Audience

Readers of this guide are assumed to be system administrators or application developers with a knowledge of the UNIX operating system and the workstation platforms on which the BEA TUXEDO system runs.

Organization of the Guide

This guide has three chapters and an appendix:

- ◆ Chapter 1: Pre-Installation Issues
Covers what you need to do in advance of the actual installation.
- ◆ Chapter 2: Installing the BEA TUXEDO System
Tells how to load the BEA TUXEDO packages into your machine, what the directory structure looks like after the installation is finished, and how to verify that the installation completed successfully.
- ◆ Chapter 3: Post-Installation Issues

Describes additional steps for configuring the BEA TUXEDO software and online documentation.

◆ Appendix A: Data Sheets

Provides platform-specific information for the platforms supported.

1 Preparing to Install the BEA TUXEDO System

Introduction

Congratulations on your new BEA TUXEDO System! You are about to embark on an exciting new project that will enhance the performance and reliability of your enterprise. This book will help you take the first step in that project: installing the BEA TUXEDO system on your platform of choice.

BEA TUXEDO system is a sophisticated software product; it should not be installed without proper planning. This chapter covers the following topics.

- ◆ Checking the contents of your BEA TUXEDO system package
- ◆ Hardware and software pre-requisites
- ◆ Managing files and databases
- ◆ Selecting directories for BEA TUXEDO system files
- ◆ Selecting an administrative password
- ◆ Configuring the UNIX operating system for the BEA TUXEDO system

Checking Your Package

When you open your box from BEA, you will find three CD-ROMS:

- ◆ The BEA TUXEDO System core software for UNIX, Microsoft, IBM OS/2, and Apple platforms.
- ◆ The BEA TUXEDO System core software for AS/400, OpenVMS, and OS/390.
- ◆ The BEA TUXEDO System Documentation

If you have also licensed the BEA TUXEDO Web Administration GUI to administer your BEA TUXEDO system applications, the package will be enabled automatically when the license file is installed. Refer to Chapter 2 of this guide, “Installing the BEA TUXEDO System,” for license installation instructions.

If you have purchased any of the following add-on packages, you will receive it on a separate CD-ROM:

- ◆ BEA TUXEDO Security Add-on Package (128-bit)
- ◆ BEA TUXEDO Security Add-on Package (56-bit)

For a list of the platforms supported for this release of the BEA TUXEDO system, see Appendix A, “Platform Data Sheets.”

Hardware and Software Prerequisites

The BEA TUXEDO system software must be installed on each machine that will participate in a BEA TUXEDO system application.

Note: We advise against trying to share the BEA TUXEDO system executables across remote file systems; this practice has proven to be unreliable in the past.

The BEA TUXEDO system Web-based GUI for administration must be installed in a file system that supports long filenames (that is, those containing more than 14 characters).

Details about the hardware and software prerequisites for all platforms on which the BEA TUXEDO system is supported are given in Appendix A, “Platform Data Sheets.” Please check the data sheet for each platform on which you plan to install the BEA TUXEDO system.

For UNIX Systems

You need the following information and resources before installing BEA TUXEDO on a UNIX system.

- ◆ A system that meets the hardware and software requirements described in Appendix A.
- ◆ The superuser password so that you can mount the CD-ROM as a file system.
- ◆ The name of a file system with enough free space for the BEA TUXEDO system packages you wish to install. Disk space requirements are given in Appendix A.

For Windows and Macintosh Systems

You need the following resources before installing the BEA TUXEDO/WS software on a Windows or Macintosh system:

- ◆ A system that meets the hardware and software requirements described in Appendix A.
- ◆ Enough disk space for the packages you wish to install. Disk space requirements are given in Appendix A.

Managing Files and Databases

This section explains how to assign ownership of the BEA TUXEDO system files to the responsible administrator, and how to set up your disk to accommodate those files.

Assigning File Ownership on UNIX Systems

If you are installing the BEA TUXEDO system on a UNIX system, we strongly recommend that you create a separate user account for the BEA TUXEDO system administrator and give ownership of the BEA TUXEDO system files to that account.

Allocating Space

A running BEA TUXEDO system application needs disk space for system files and for the application's database(s). You won't use this space until you begin to develop or run your BEA TUXEDO system application, but it is important to plan for it before installing the software. To help explain what is involved here, we need to describe how the BEA TUXEDO system handles files.

The BEA TUXEDO System Disk Management Interface

The BEA TUXEDO system has a facility, the Disk Management Interface (DMI), which manages logical files within a single disk device or set of devices. Among other things, it stores binary configuration tables and the transaction log.

The BEA TUXEDO system disk management software supports the notion of a BEA TUXEDO system file system distinct from any operating system file system. (For the rest of this discussion, we're going to use the term OS file system to cover any operating system file system.)

Administrative access to the DMI to create, initialize, or destroy entries in the BEA TUXEDO system file system is through `tadmin` administrative commands.

There are two ways the logical files managed by the DMI can be stored physically. Physical storage can be on an OS file system. Alternatively, disk space outside the control of all OS file systems can be set aside for BEA TUXEDO; files reside on device special files in that space and are managed directly by the DMI. Space outside the OS file system is usually referred to as raw disk space. Not only is I/O faster when done by system calls reading directly from and writing directly to device special files on raw disks, raw disk space is preferred when it is important to know for certain that a physical `write()` has been done. With the OS file system, the precise moment that a

`write()` is done can not be relied on. In the BEA TUXEDO system, accurate control of the write operation is particularly important for entries in the transaction log. With multiple users, it is also an important element in assuring database consistency.

Arranging for Raw Disk Space

If you decide to use raw disk space for your BEA TUXEDO system application, you may find that the hard disk devices on your system are fully allocated to file systems such as `/` (meaning root), `/usr`, and other UNIX file systems. If that is the case, it is necessary to repartition your hard disk device in order to set aside some partitions that are not for an OS file system. Information on how to do this can be found in the system administration documentation for your particular platform.

Note: On NT platforms, the default behavior is unbuffered I/O; no special arrangements are needed.

How the BEA TUXEDO File System Is Organized

A BEA TUXEDO system file system has a Volume Table of Contents (VTOC) that lists files on a set of devices named in the Universal Device List (UDL). The UDL contains information about the location of the physical storage space for BEA TUXEDO system tables.

All System Tables on the Same Device?

In a BEA TUXEDO system application, all of the system files might be stored together on the same raw disk slice or OS file system file. While it is possible to use regular OS file system files for the configuration tables, it is strongly recommended that the transaction log, TLOG, be stored on a raw disk device. Since the TLOG seldom needs to be larger than 100 blocks and since disk partitions are always substantially larger than that, it may make sense to use the same device for everything. The pathname of the device needs to be contained in both the `TUXCONFIG` and the `FSCONFIG` environment variables. Listing 1-1 shows approximately how the contents might appear.

Listing 1-1 VTOC and UDL Diagram

Output based on setting `FSCONFIG=$TUXCONFIG`, and invoking `tmadmin:`

1 Preparing to Install the BEA TUXEDO System

```
No bulletin board exists. Entering boot mode.
```

```
> livtoc
Volume Table of Contents on /usr2/bank/tuxconfig:
0: VTOC: Device 0 Offset 0 Pages 7
1: UDL: Device 0 Offset 7 Pages 28
2: _RESOURCE_SECT: Device 0 Offset 35 Pages 3
3: _MACHINES_SECT: Device 0 Offset 38 Pages 40
4: _GROUPS_SECT: Device 0 Offset 78 Pages 40
5: _SERVERS_SECT: Device 0 Offset 118 Pages 40
6: _SERVICES_SECT: Device 0 Offset 158 Pages 20
7: _ROUTING_SECT: Device 0 Offset 178 Pages 100
8: _NETWORK_SECT: Device 0 Offset 278 Pages 20
9: _MIBPERMS_SECT: Device 0 Offset 298 Pages 2

# If the TLOG is stored on the same device, there will be an
# entry something like:

9: TLOG1: Device 0 Offset 236 Pages 100
> q
```

The BEA TUXEDO system administrator must make sure raw disk slices are available as needed on each node participating in an application. The size of elements in the BEA TUXEDO system file system are shown in Table 1-1.

Table 1-1 Size of BEA TUXEDO System Tables

Entity	512-byte Pages
VTOC	1
TUXCONFIG	270
TLOG	100 (default)
UDL	28
TOTAL	399

The size for the `TUXCONFIG` file is larger if there are more entries in the configuration file, `UBBCONFIG`. The administrator is encouraged to allocate additional space for dynamic reconfiguration and for growth of the application. The default block size assumed by the `crd1` subcommand of `tadmin` is 1000 blocks, which should be adequate for the initial installation.

Space for Application Databases (If You Are Using /D)

If your BEA TUXEDO system application is using BEA TUXEDO System/D as a resource manager, your database tables can be listed in the same UDL and managed by the BEA TUXEDO system VTOC. If another resource manager is used, you should check the installation instructions for that product to see how its space requirements affect your BEA TUXEDO system planning.

Space for Queue Spaces (If You Are Using /Q)

If your BEA TUXEDO system application is using /Q for store-and-forward queue management, your queue space can be listed in the same UDL and managed by the BEA TUXEDO system VTOC.

Space for Application Servers

As you are calculating the space requirements for the BEA TUXEDO system, you should also consider the requirements of the servers that perform the work of the application. These requirements will be specified by the application, and they are over and above the requirements for BEA TUXEDO system itself (unless otherwise specified).

Selecting Directories for BEA TUXEDO System Files

During the installation process you will be prompted to make decisions about where, in your file system, a number of your BEA TUXEDO system directories and files will be installed. To help you plan for this part of the process, this section describes the directories and files about which you will be prompted to make a decision.

- ◆ “For All Platforms” should be read by anyone installing BEA TUXEDO.
- ◆ “For All Server Platforms Supporting the Web GUI” should be read by anyone installing the Web-based GUI for BEA TUXEDO system application administration.

For All Platforms

You will be prompted for a pathname for the base directory of your BEA TUXEDO system software. There is no restriction on the location of this directory, as long as it meets the following requirements:

- ◆ The directory must be empty.
- ◆ The directory must have read, write, and search (execute) permissions for the BEA TUXEDO system administrator.

Throughout the BEA TUXEDO system documentation this directory is referred to as “TUXDIR” (formerly “ROOTDIR”).

For All Server Platforms Supporting the Web GUI

If (a) you are installing BEA TUXEDO on a server platform, and (b) you have purchased the Web-based graphical user interface (GUI) for application administration, you will be prompted, during the installation process, to accept or replace the default pathnames and filenames used for the Web GUI components. These default pathnames and filenames are based on the value of TUXDIR that you specify.

If you are running a commercial web server, you may find the default settings inappropriate, especially if your server is handling requests from both the BEA TUXEDO system Web GUI and other Web programs on the same port. To accommodate this situation, BEA TUXEDO system lets you choose between accepting the defaults and assigning your own pathnames and filenames. The rest of this section describes the choices you will be given.

- ◆ A pathname for the HTML files—By default, the HTML files listed below are installed in the directory `$TUXDIR/udataobj/webgui`. You are prompted to supply your own paths for these files if you prefer to have them installed elsewhere.

- ◆ An HTML template file (`webgui.html`) that is used by `tuxadm` as the basis for many screens displayed during a Web GUI session.
- ◆ An HTML file (`webguitemp.html`) that displays legal notices and warnings when the Web GUI is first brought up on the screen.
- ◆ The HTML files that make up the Web GUI documentation are installed in `$TUXDIR/doc`.

EXCEPTION: If you are installing BEA TUXEDO on an NT platform and the installation program detects an existing Web server, then a default directory appropriate for that Web server is used, instead.

- ◆ A pathname for the Java and image files—By default, the class files for the Java applet are installed in one of the directories listed below. You are prompted to supply your own paths for these files if you prefer to have them installed elsewhere.
 - ◆ `$TUXDIR/udataobj/webgui/java`, or
 - ◆ A subdirectory called `java` in the HTML directory you specified after the prompt described above in #1.
- ◆ A directory pathname for the CGI program (`tuxadm`)—Specify one of the following (unless the exception described below applies):
 - ◆ `$TUXDIR/udataobj/webgui/cgi-bin`
 - ◆ A sub-directory called “`cgi-bin`” in the HTML directory you specified after the prompt described above in #1.

EXCEPTION: If the installation program detects Microsoft’s Internet Information Server (IIS) in a standard directory, then `tuxadm` is installed in a sub-directory called “`scripts`” in the directory you specified, above, as the pathname for HTML files.

Note: Do not specify `$TUXDIR/bin` as your CGI directory. If you do, you risk having some other BEA TUXEDO system programs executed accidentally by an uninformed user of the Web browser. You may also introduce a security risk.

- ◆ An alias for the directory pathname for `tuxadm`. This is the path for the directory in which Web clients will expect to find `tuxadm`. The default is either `/cgi-bin` or `/scripts`.
- ◆ A pathname for the documentation—By default, the documentation is installed in `$TUXDIR/doc`.

Selecting an Administrative Password

The BEA TUXEDO system uses an administrative password to protect the machine on which it is installed from administrative requests and operations (such as `tmboot`) that are not authorized. Whenever administrative communications arrive on this machine through the `tlisten` and `wlisten` gateway processes, the BEA TUXEDO system authenticates them by means of the password.

You assign an administrative password during the installation process (to the machine on which the BEA TUXEDO system is being installed) by entering the password of your choice after the appropriate prompt. The password must be a string of alphanumeric characters in clear-text format. It may contain no more than 80 characters.

A common password is required for two machines in a BEA TUXEDO system domain to communicate successfully. For this reason, you must use the same password whenever you install the BEA TUXEDO system on multiple machines for a single domain. As described above, you will be prompted to provide the password during the BEA TUXEDO installation process. If, however, for some reason, you use a different password for one machine, you must add that password to the `tlisten.pw` file on each existing machine with which you want that machine to communicate.

For these reasons, you may have more than one administrative password in your `tlisten.pw` file. A single password file may contain no more than 20 passwords, with one password per line.

The administrative password that you enter during installation is collected by the installation script and stored in:

```
$TUXDIR/udataobj/tlisten.pw
```

Make sure the permissions on your `tlisten.pw` file are set such that the file is readable only by the BEA TUXEDO system administrator.

Configuring the UNIX Operating System for BEA TUXEDO

The BEA TUXEDO System uses the UNIX operating system Interprocess Communication (IPC) resources.

Note: Equivalent services are available on operating systems other than the UNIX system. The BEA TUXEDO system provides an NT Service called the BEA TUXEDO IPC Helper, which facilitates inter-process communication. MVS/OpenEdition provides IPC mechanisms that are basically the same as those provided on a UNIX system, but that cannot be configured from within the OpenEdition environment. (See the MVS/OE documentation for instructions on administering these mechanisms.)

IPC resources are configured by three sets of tunable parameters that control the amount of shared memory (prefix SHM), number of semaphores (prefix SEM), and size of message queues and messages (prefix MSG).

The settings for these parameters are application dependent. Most UNIX systems, however, are shipped with default values that are too low for a BEA TUXEDO system application.

The following sections describe the IPC parameters and provide guidelines for configuring them. Because these parameters vary across different versions of the UNIX system the descriptions below are generic. Check Appendix A for the exact parameter names and defaults for each platform and for information on how to change the parameters. If you change a parameter, you will need to rebuild the kernel and reboot the operating system using the standard administrative tools. Consult your operating system administrator or the system administrator's guide for your platform for details.

If your BEA TUXEDO system application is distributed, the minimum IPC resources must be available on every UNIX platform participating in the application.

Semaphores

Every process that participates in a BEA TUXEDO system application requires a semaphore. When the application is booted the number of semaphores configured in the operating system is checked, and the boot will fail if the configured number is not high enough.

The following semaphore parameters may need to be adjusted:

SEMMNS

Maximum number of semaphores in the system. The minimum requirement for SEMMNS is

$$\text{MAXACCESSERS} - \text{MAXWSCLIENTS} + 13$$

where MAXACCESSERS is the maximum number of BEA TUXEDO system processes on a particular machine (including servers and native clients) and MAXWSCLIENTS is the maximum number of workstation clients. Both of these parameters are specified in the application's UBBCONFIG file. For more information about UBBCONFIG, see the *BEA TUXEDO Administrator's Guide* or the `ubbconfig(5)` reference page.

SEMMNI

Maximum number of active semaphore sets. See SEMMSL.

SEMMSL

Maximum number of semaphores per semaphore set. SEMMNI and SEMMSL are commonly chosen so that their product equals SEMMNS. The BEA TUXEDO system does not perform semaphore operations on semaphore sets; however, it attempts to allocate as many semaphores per semaphore set as possible.

SEMMAP

Size of the control map used to manage semaphore sets. SEMMAP should be equal to SEMMNI.

SEMMNU

Number of undo structures in the system. Because an undo structure is needed for each process that can access the Bulletin Board, SEMMNU must be at least as large as SEMMNS.

SEMUME

Maximum number of undo entries per undo structure. The value 1 suffices.

Message Queues and Messages

The BEA TUXEDO system uses UNIX system messages and message queues for client/server communication. Examples of such messages are service requests, service replies, conversational messages, unsolicited notification messages, administrative messages, and transaction control messages.

Every MSSQ set (Multiple Servers, Single Queue) of servers and every individual server has a message queue for receiving requests. Every client has its own queue for receiving replies. Servers that specify the `REPLYQ` parameter also get individual reply queues.

The adjustment of kernel message parameters is important to the proper tuning of an application. Inappropriate values can lead to an inability to boot or severe performance degradation.

There are various message queue parameters. They limit various characteristics of the queue space including the total number of outstanding messages (`MSGTQL`), the total number of bytes that can be on one queue (`MSGMNB`), the size limit of an individual message (`MSGMAX`), the total number of message segments that can be outstanding at one time (`MSGSEG`), and the size of each segment (`MSGSSZ`).

Exceeding any of the above parameter limits results in what is known as a blocking condition. There is a special case for `MSGMAX`. Messages that exceed 3/4 of `MSGMNB`, or that are larger than `MSGMAX`, are placed in a UNIX file. A very small message with the filename in it is then sent to the recipient. This mode of operation is to be avoided, as it results in a severe reduction in performance.

An application deadlock can result if every process is blocked trying to send a message. For example, when clients fill up the message space with requests and servers are all blocked trying to send replies, since no server can read a message, there is a deadlock. Timeouts can break the deadlock sometimes, but no useful work will have been done.

Especially troublesome is a client that sends its requests with the `TPNOREPLY` flag. In no time, this practice can fill up either individual queues or the system message space, depending on the size of the messages. Such applications may have to implement their own flow control to limit the number of outstanding messages.

1 *Preparing to Install the BEA TUXEDO System*

To summarize what has been said above, if clients or servers are blocking on their send operations (requesting services or sending replies), then there is potential for trouble. It is usually no problem, though, for a single server request queue to always be full, as long as there is space in the system for more messages on other queues.

There are performance implications to queue blocking conditions, both on the sending side and the receiving side. The UNIX operating system, when waking up blocked processes, wakes up all the processes blocked on a particular event, even if only one can proceed. The other processes just go back to sleep. This process scheduling overhead can be expensive.

For example, on an empty server request queue where there is more than one server (MSSQ), an arriving message wakes up all the idle (blocked) servers on that queue. In the case of a full server request queue, as each request is read by a server, the system wakes up all the blocked clients. Depending on the size of the messages, zero or more clients get to place their messages on the queue. The rest have to go back to sleep. Since there may be hundreds of clients in the system, the mass wakeup of all of these clients every time a service request is processed can severely degrade performance.

A properly tuned system rarely fills its queues. Enough slack should be left in the queues to handle the natural variability of the message flow. There are no magic answers. Tuning is very application dependent. The UNIX `ipcs(1)` command provides a snapshot of the queues so you can tell if they are full. You can try the `TPNOBLOCK` flag when sending requests. That way, clients can tell when queues are full, and they can slow down a bit. It might help to increase the scheduling priority of the servers whose request queues are full.

The following message parameters may need to be adjusted:

`MSGMNI`

Number of unique message queue identifiers. Each process participating in a BEA TUXEDO system application on a particular machine typically needs at least one message queue. This number is reduced if MSSQ sets are used, where multiple server processes share a single queue. For transaction processing, count an additional queue per server group for TMS processes. Thus, the minimum requirement for `MSGMNI` can be determined by this formula:

$$\begin{aligned} \text{MSGMNI} &= \text{MAXACCESSERS} + 7 \\ &+ (\text{number of servers with REPLYQ}) \\ &+ (\text{number of MSSQ sets}) \\ &- (\text{number of servers in MSSQ sets}) \end{aligned}$$

MSGMAX

Maximum message size in bytes. MSGMAX must be big enough to handle any BEA TUXEDO system application running on this machine.

MSGMNB

Maximum message queue length in bytes. This number must accommodate the total size of all messages that are on a queue and have not been taken off by the associated process(es). The minimum value for MSGMNB is MSGMAX. Messages longer than 75% of MSGMNB are sent to a file instead of to a message queue—a situation that should be avoided because it severely degrades performance.

MSGMAP

Number of entries in the control map used to manage message segments. MSGMAP should be the same as the number of message segments (MSGSEG), which should be twice the size of MSGMNI.

MSGSSZ

Size of a message segment in bytes. A message can consist of several such segments. The value of MSGSSZ should be such that a multiple of MSGSSZ is equal to the size (including the BEA TUXEDO system header) of the most commonly sent message. This practice will avoid wasting space.

MSGSEG

Number of message segments in the system.

MSGTQL

Total number of outstanding messages that can be stored by the kernel. This is the maximum number of unread messages at any given time.

Shared Memory

In the BEA TUXEDO system environment shared memory is used for the Bulletin Board and for the control table of the workstation listener process (wsl). An application may also choose to use shared memory for its own purposes.

The following shared memory parameters may need to be adjusted:

SHMMAX

Maximum shared memory segment size in bytes. This number represents the largest shared memory segment that can be allocated. A process can, however, attach to more than one segment of size SHMMAX.

SHMSEG

Maximum number of shared memory segments per process. For a given configuration, the maximum amount of shared memory in bytes to which a process can attach is $SHMMAX * SHMSEG$. A value between 6 and 15 should be adequate.

SHMMNI

Maximum number of shared memory identifiers in the system. BEA TUXEDO requires one identifier per Bulletin Board and an additional identifier if the workstation listener (WSL) is running.

SHMMIN

Minimum shared memory segment size in bytes. This should always be set to 1.

Other Kernel Tunables

Experience with the BEA TUXEDO system has shown that some other UNIX system tunables may need to be set to higher values. These are very application dependent and do not apply to all applications. Appendix A includes information on the defaults and how to change them.

ULIMIT

Maximum file size. `ULIMIT` needs to be large enough so that you can install the BEA TUXEDO system and build servers. We recommend 4 megabytes.

NOFILES

Maximum number of open files per process. A BEA TUXEDO system server requires a minimum of four file descriptors.

MAXUP

Maximum number of processes per non-super user. The BEA TUXEDO system processes—servers and administrative processes—run with the `UID` specified in the application's `UBBCONFIG` file. `MAXUP` needs to be large enough to allow all of these processes to run.

NPROC

Maximum number of processes (system wide).

NREGION

Number of region table entries to allocate. Most processes have three regions: text, data, and stack. Additional regions are needed for each shared memory segment and shared library (text and data) attached. However, the region table

entry for the text of a “shared text” program is shared by all processes executing that program. Each shared memory segment attached to one or more processes uses another region table entry.

NUMTIM

Maximum number of STREAMS modules that can be pushed by the Transport Layer Interface (TLI). A typical default value is 16; you should have it set to at least 256.

NUMTRW

The number of TLI read/write structures to allocate in kernel data space. A typical default value is 16; you should have it set to at least 256.

Calculating IPC Requirements

When the BEA TUXEDO system software has been installed and an application configuration file (UBBCONFIG file) is available, the `tmloadcf` command can be used to calculate the IPC resources needed to support the application. For more information, see the `tmloadcf(1)` reference page and Chapter 3, “Post-Installation Issues.”

1 *Preparing to Install the BEA TUXEDO System*

2 Installing the BEA TUXEDO System

Introduction

This chapter provides procedures for

- ◆ Installing BEA TUXEDO system v6.5
- ◆ Installing your product license
- ◆ Verifying the software installation
- ◆ Removing the BEA TUXEDO system from your system

A description of the directory structure after installation is also included.

Installing the BEA TUXEDO System v6.5

This section provides procedures for installing the following:

- ◆ BEA TUXEDO system on
 - ◆ UNIX systems
 - ◆ Windows systems
- ◆ BEA TUXEDO/WS on Macintosh machines

- ◆ BEA TUXEDO system product license

Note: If you are planning to install the Web-based GUI for BEA TUXEDO system administration, make sure you have decided whether or not you want the GUI-related files to be installed in their default directories and, if you do not, where you want them to be installed. For details, see Chapter 1.

Installing the BEA TUXEDO System on UNIX Platforms

To install the BEA TUXEDO system on a UNIX platform, complete the following procedure. Make sure you install the software in the file system in which the BEA TUXEDO system executables will run.

Note: It will take approximately 5 minutes to install each package on a local disk; installation on a remote disk may require as much as 10 minutes.

1. Log in as the administrator of the BEA TUXEDO system.
2. Insert the CD-ROM into the reader.
3. Mount the CD-ROM as a file system. For platform-specific instructions about how to do this, see Appendix A. On most systems you will need to acquire superuser privileges to perform the mount.

Note: If your system does not have a directly-connected CD-ROM reader, you can mount the CD-ROM on a remote system, share (export) the CD-ROM file system, and then mount the remote file system. See Appendix A for detailed instructions for each platform. Alternatively, you can mount the CD-ROM on a remote system, copy the contents of the CD-ROM directory for your platform to the system in which you plan to install the BEA TUXEDO system, and continue with the rest of the installation procedure.

Table 2-1 CD-ROM Directory Names for UNIX System Platforms

Directory	Platform
alpha/dux32	Digital UNIX v3.2 on DEC Alpha
alpha/dux40b	Digital UNIX v4.0b on DEC Alpha
alpha/dux40d	Digital UNIX v4.0d on DEC Alpha

Directory	Platform
dgintl/dgux411	Data General-DG/UX v4.11 on AviiON (Intel)
dgm88k/dgux411	DG/UX 4.11 on Data General AViiON (Intel)
fujitsu/uxpds20	Fujitsu UXP/DS V20 on DS/90
hp/hpux1001	HP UX v10.01 on HP 9000 Series 800
hp/hpux1010	HP UX v10.10 on HP 9000 Series 800
hp/hpux1020	HP UX 10.20 on HP 9000 Series 800
hp/hpux11	HP UX v11 on HP 9000 Series 800
ibm/aix414	IBM AIX v4.1.4 on RS/6000 and SP2
ibm/aix421	IBM AIX v4.2.1 on RS/6000 and SP2
ibm/aix43	IBM AIX v4.3 on RS/6000 and SP2
linux/sw234	Slackware Linux 2.0.34
ncr/mpras301	NCR MP-RAS v3.01
ncr/mpras302	NCR MP-RAS v3.02
nec/ux4800	NEC UX/4800 on EWS 4800 v2
sco/scoos502	SCO OpenServer 5.02 on Intel
sco/uw21	SCO UnixWare v2.1
sco/uw70	SCO UnixWare v7.0
seq/dynix42	Sequent DYNIX/ptx 4.2 on Sequent i386
seq/dynix442	Sequent DYNIX/ptx v4.4.2 on Sequent i386
sgi/irix62	SGI IRIX v6.2 on Silicon Graphics IP22
sgi/irix64	SGI IRIX 6.4 on Silicon Graphics IP22
sgi/irix65	SGI IRIX v6.5 on Silicon Graphics IP27
sni/rel543b	Siemens Pyramid SNI Reliant UNIX v5.43b

Directory	Platform
sni/re1543c	Siemens Pyramid SNI Reliant UNIX v5.43c
sni/re1544b	Siemens Pyramid SNI Reliant UNIX v5.4.4b
sun5x/isol24	Sun OS 5.4 Solaris v2.4 on Intel
sun5x/isol251	Sun OS 5.5.1 Solaris v2.5.1 on Intel
sun5x/isol26	Sun OS 5.6 Solaris v2.6 on Intel
sun5x/isol27	Sun OS 5.7 Solaris v2.7 on Intel
sun5x/sol251	Sun OS 5.5.1 Solaris v2.5.1 on UltraSPARC
sun5x/sol26	Sun OS 5.6 Solaris v2.6 on UltraSPARC
sun5x/sol27	Sun OS 5.7 Solaris v2.7 on UltraSPARC
tandem/nsuxc21	Tandem Non-Stop UX C21 on Integrity S4000 series
tandem/nsuxc41	Tandem Non-Stop UX C41 on Integrity S4000 Series
unisys/svr4	UNISYS SVR4 on Intel

4. Change directory to the root of the mounted CD-ROM.
5. Invoke the installation procedure:

```
sh install.sh
```
6. Respond to the prompts displayed during the installation process. Some of the prompts will require you to choose between (a) accepting default locations for files being installed, and (b) specifying non-default pathnames for these files. For details, see “Selecting Directories for BEA TUXEDO Files” in Chapter 1.
7. After the installation is complete, unmount the CD-ROM file system and remove the CD-ROM from the reader. See Appendix A for platform-specific instructions.

Installing BEA TUXEDO on Windows Platforms

To install the BEA TUXEDO system on a Windows platform, complete the following procedure.

Note: It will take approximately 5 minutes to install the BEA TUXEDO system.

1. Insert the CD-ROM into a reader attached to a machine running Windows.

Table 2-2 CD-ROM Directory Names for Windows Platforms

Directory	Platform
alphant/server	Windows NT 4.0 for DEC Alpha (server)
alphant/ws/disk[1-6]	Windows NT 4.0 for DEC Alpha (workstation)
winnt/server	Windows NT 4.0 for Intel (server)
winnt/ws/disk[1-4]	Windows NT 4.0 for Intel (workstation)
win16[1-2]	Windows 3.x (workstation)
win95[1-4]	Windows 95 (workstation)
win98[1-4]	Windows 98 (workstation)

Note: Diskette images are provided on the CD-ROM to make it easy for you to distribute the /WS platform software within your organization.

2. Select one of the following steps, depending on the platform on which you're installing BEA TUXEDO.

Platform	Instructions
Windows 3.x:	Run win16\disk1\setup.exe
For Windows 95:	Run win95\disk1\setup.exe
For Windows 98:	Run win98\disk1\setup.exe

Platform	Instructions
Windows NT 4.0 on DEC Alpha	Choose one of the following: To install the BEA TUXEDO system run alphant\server\setup.exe To install the BEA TUXEDO /WS run alphant\ws\disk1\setup.exe
Windows NT 4.0 on Intel:	Choose one of the following: To install the BEA TUXEDO system run winnt\server\setup.exe To install the BEA TUXEDO /WS run winnt\ws\disk1\setup.exe

3. Respond to the prompts displayed during the installation process. (For a description of the prompts, see “Information Needed during Installation” in Chapter 1.

Installing BEA TUXEDO System /WS on Macintosh

To install BEA TUXEDO/WS on a Macintosh machine, complete the following procedure.

Note: It will take approximately 15 minutes to install BEA TUXEDO System /WS.

1. Insert the CD-ROM into a reader attached to a machine running either Windows NT or Windows 95. The CD-ROM is in ISO 9660 format, which is different from the Macintosh’s native CD-ROM file format (HSF, Hierarchical File System), so the CD-ROM is not readable on a Macintosh system.
2. Transfer the .hqx file from the Windows machine to the Macintosh. (If possible, perform this transfer via a network using ASCII mode to transfer the file.)
3. Use a utility such as Stuffit to convert the .hqx file into a self-extracting archive file (.sea file).
4. To perform the installation, double-click on the icon representing the .sea file.

5. Respond to the prompts displayed during the installation process. Some of the prompts will require you to choose between (a) accepting default locations for files being installed, and (b) specifying non-default pathnames for these files. For details, see “Selecting Directories for BEA TUXEDO System Files” in Chapter 1.

Installing BEA TUXEDO Web-based GUI Documentation

The *BEA TUXEDO Administrator's Guide to the Web-based GUI* is installed (in the same directory) only when you install the Web-based GUI for BEA TUXEDO system application administration.

Installing Your Product License

Your product license was delivered on the floppy diskette that you received in the box with the software CD-ROM.

Installing on Any Platform except NT

1. Install the contents of the floppy diskette on your machine.
Note: The floppy diskette cannot be read on a computer running the UNIX system. If you are using a UNIX platform, read the floppy onto a Windows machine and transfer the license file to the UNIX machine. To verify that the UNIX system has accepted the file, run the `tmadmin -v` command.
2. Make a copy of the new portion of your license file and append it to the existing license file in `$TUXDIR/udataobj/lic.txt`.

Installing on an NT Platform

1. Install the contents of the floppy on your machine.

2. Respond to prompts directing you to move your product license file to
`$TUXDIR/udataobj/lic.txt`

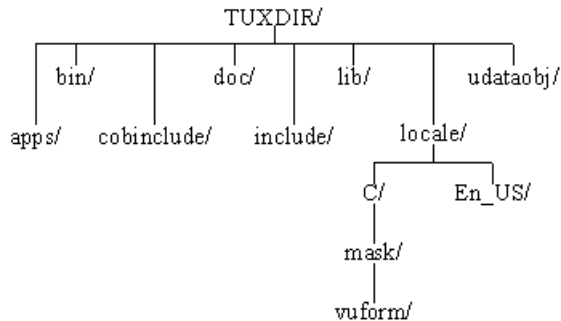
Verifying the Software Installation

To verify that you have successfully installed the BEA TUXEDO system software on a server platform, check the directory structure added to your system for the BEA TUXEDO system files, and try configuring and executing the sample application provided. This section describes the directory structure and provides instructions for running the sample application.

Checking the Directory Structure after BEA TUXEDO System Installation

When the BEA TUXEDO system is installed, the directories shown in Figure 2-1 are created. This diagram reflects the directory structure after all packages in the BEA TUXEDO system development environment have been installed.

Figure 2-1 BEA TUXEDO System directory structure



The contents of each directory are described below. TUXDIR is the base directory for the BEA TUXEDO system software. TUXDIR must be an empty directory for which you have read, write, and search (execute) permissions. (In previous releases it was referred to as ROOTDIR.)

\$TUXDIR/apps

Contains several subdirectories with sample applications.

\$TUXDIR/bin

Contains executable programs.

\$TUXDIR/cobininclude

Contains copylib entries for use in COBOL programs.

\$TUXDIR/doc

Contains the BEA TUXEDO document set (if installed).

\$TUXDIR/include

Contains the C language header files. May include subdirectories such as rpc, depending on the platform.

\$TUXDIR/lib

Contains compiled object files, including dynamic shared libraries (on platforms where the BEA TUXEDO system uses dynamic shared libraries) and other object files needed to build BEA TUXEDO system clients and servers.

\$TUXDIR/locale

Contains subdirectories to support the localization of system messages.

`$TUXDIR/locale/C`

`$TUXDIR/locale/En_US`

Contain message catalogs for the default locale (U.S. English). `En_US` is a SCO alias for `C`.

`$TUXDIR/locale/C/mask`

Contains the default DES (Data Entry System) initial mask.

`$TUXDIR/locale/C/mask/vuform`

Contains compiled data entry masks used by `vuform(1)`.

`$TUXDIR/udataobj`

Contains other files required by the BEA TUXEDO system.

Running a Sample Application

To verify that you have successfully installed the BEA TUXEDO system software on a server platform, you can try configuring and executing the sample application found in the directory `$TUXDIR/apps/simpapp`.

Note: Instructions for setting up and running a `simpapp` through the Web GUI are provided in the “Tutorial” section (in Chapter 1) of the *BEA TUXEDO Administrator’s Guide to the Web-based GUI*.

`simpapp` is a non-distributed application consisting of a server, client, and configuration file. The server `simpserv` offers a single service called `TOUPPER`. The client `simpcl` is invoked with a single argument, which is a string to be converted to upper case. The server returns the converted string to the client, which prints it out.

For example, the invocation

```
simpcl "hello world"
```

results in the output

```
Returned string is: HELLO WORLD
```

To configure and run `simpapp`, follow these steps. This procedure is also described in the `README` file in `$TUXDIR/apps/simpapp`.

1. Set up and export the environment variables used by the BEA TUXEDO system. The Bourne shell script `$TUXDIR/tux.env` shows you how to do this.

- Copy the `simpapp` files to your own working directory, since the configuration file must be edited. Make sure that the client and server files are executable and that the configuration file is writable. For example:

```
MYDIR=/home/me/simpapp
mkdir $MYDIR
cd $MYDIR
cp $TUXDIR/apps/simpapp/* .
chmod 755 simpserv simpcl
chmod 644 ubbsimple
```

- Edit the sample configuration file `ubbsimple` to replace the bracketed items with values appropriate to your BEA TUXEDO system installation. Follow the comments in `ubbsimple`, which show you exactly how to customize the file. `APPDIR` (in the file) should be the same as `MYDIR`, and `TUXCONFIG` (in the file) should be set to the literal pathname corresponding to `$MYDIR/tuxconfig` (in our example, `/home/me/simpapp/tuxconfig`). The machine name should be set to the name of your system. To determine the name of your system on a UNIX machine run the command:

```
uname -n
```

If you are using an NT platform and you do not know the name of your system, see your system administrator.

- Initialize and export the `TUXCONFIG` environment variable, which is used by several BEA TUXEDO system commands.

```
TUXCONFIG=$MYDIR/tuxconfig
export TUXCONFIG
```

- Create the binary version of your edited configuration file by invoking `tmloadcf(1)`, which produces a file named `tuxconfig`. This file, referenced by the `TUXCONFIG` environment variable, is used by the BEA TUXEDO system at runtime to describe the application configuration.

```
tmloadcf -y ubbsimple
```

- Boot `simpapp` by typing this:

```
tmboot -y
```

If the boot succeeds, you will see output such as the following:

Listing 2-1 Output produced by `tmboot -y`

```
Booting all admin and server processes in
/home/me/simpapp/tuxconfig
INFO: BEA TUXEDO(r) System Release 6.5
INFO: Serial #: 000102-9125503751, Maxusers 25
Booting admin processes ...
exec BBL -A:
    process id=24180 ... Started.
Booting server processes ...
exec simpsserv -A :
    process id=24181 ... Started.
2 processes started.
```

- ◆ If the boot fails, examine the log located in a file named `ULOG.mmdyy` in your application directory (`$MYDIR`), where *mmdyy* are digits corresponding to the current month, day, and year. If you see a message like the following towards the end of the log

```
can't create enough semaphores for BB
```

then the Interprocess Communication (IPC) resources configured in your operating system are not adequate for running `simpapp`.

- ◆ To confirm this hypothesis, invoke the BEA TUXEDO system command `tmloadcf(1)` and specify the name of your configuration file. For example:

```
tmloadcf -c $MYDIR/ubbsimple
```

If the current value of any IPC parameter configured in your operating system is less than a minimum (either variable or fixed) listed in the `tmloadcf` output, you must increase the value of that parameter. For instructions on determining and changing the current IPC values for your platform, see the data sheet for your platform in Appendix A.

- ◆ Assuming that the boot succeeded, you can invoke the client. For example, try this:

```
simpcl "hello world"
```
- ◆ When you have finished, shut down `simpapp` with the following command:

```
tmshutdown -y
```


Removing BEA TUXEDO from Your System

- ◆ On a UNIX system:
 - ◆ Make sure that all BEA TUXEDO system applications are shut down.
 - ◆ Enter

```
rm -rf $TUXDIR
```

where `TUXDIR` is set to the BEA TUXEDO system base directory.
- ◆ On a Windows platform: Double-click on the “Uninstall” icon.
- ◆ From a Macintosh platform: Remove all subdirectories and files from the base directory specified at install time.

2 *Installing the BEA TUXEDO System*

3 Post-Installation Issues

Introduction

Now that you have successfully installed BEA TUXEDO, you must set up your system and parts of the BEA TUXEDO system software to prepare for developing or installing your application. This chapter describes the required set-up tasks in the following sections:

- ◆ “Setting Up Your Environment” recommends settings for various environment variables
- ◆ “Editing a `UBBCONFIG` File” explains how to edit the configuration file for an application before booting the application.
- ◆ “Checking IPC Resources” describes the commands that let you calculate the minimum IPC requirements for an application, based on its `UBBCONFIG` file.
- ◆ “Creating the UDL and the TLOG” describes how to create a Universal Device List (UDL) and a transaction log for those applications that require them.
- ◆ “Starting the Listener Process” describes several methods for starting the `tlisten(1)` process, which provides remote service connections.
- ◆ “Using the `TYPE` Parameter” calls special attention to how the `TYPE` parameter in the `UBBCONFIG` file can save you some grief.
- ◆ “Rebuilding Applications” discusses compatibility and interoperability between releases of BEA TUXEDO.

Setting Up Your Environment

Before you can invoke BEA TUXEDO system commands you need to set several environment variables. This section describes the environment variables that you must set and export on a UNIX system. If you are using an NT platform, see “Setting Environment Variables” in the *BEA TUXEDO for Windows NT User’s Guide* for instructions.

On a UNIX system you need to set and export several environment variables. The Bourne shell script `tux.env`, located in the base directory you specified at installation time, serves as a model for setting these variables.

All examples below assume that you are using the Bourne shell.

- ◆ `TUXDIR` contains the full pathname of the directory in which you installed the BEA TUXEDO system software. For example, if you installed the BEA TUXEDO system in `/var/opt/tuxedo`, type this:

```
TUXDIR=/var/opt/tuxedo; export TUXDIR
```

- ◆ `PATH` is the search path for commands. You should include `$TUXDIR/bin` in your path. For example:

```
PATH=$PATH:$TUXDIR/bin; export PATH
```

- ◆ `LD_LIBRARY_PATH` (on SVR4-based systems and Solaris 2.5.1), `SHLIB_PATH` (on HP-UX), and `LIBPATH` (on AIX) name the search path for dynamic shared libraries. These environment variables are needed only on platforms that support dynamic shared libraries. You should append `$TUXDIR/lib` to your existing library path. For example, on SVR4-based systems and Solaris 2.5.1, execute this:

```
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:$TUXDIR/lib; export LD_LIBRARY_PATH
```

- ◆ `TUXCONFIG` contains the full pathname of the binary configuration file of a specific BEA TUXEDO system application. Several BEA TUXEDO system commands expect `TUXCONFIG` to be set appropriately. For example, if your application’s binary configuration file is located in `/var/opt/tuxappl/tuxconfig` you should set and export `TUXCONFIG` as follows:

```
TUXCONFIG=/var/opt/tuxappl/tuxconfig; export TUXCONFIG
```

Editing a UBBCONFIG File

Each BEA TUXEDO system application has a configuration file, commonly called the UBBCONFIG file, which specifies the application parameters that are installation dependent. Typically, the configuration file has a name that begins with `ubb` and ends with something mnemonic, (for example, `ubbsimple`). Usually, you must edit this file before you can boot the application.

As an example, we show the configuration file from the simple application, found in `$TUXDIR/apps/simpapp`. The configuration file is called `ubbsimple`.

Listing 3-1 shows `ubbsimple` as delivered.

Listing 3-1 The `ubbsimple` configuration file

```
#ident "@(#)apps:simpapp/ubbsimple 60.3"
#Skeleton UBBCONFIG file for the TUXEDO Simple Application.
#Replace the bracketed <> items with the appropriate values.
*RESOURCES
IPCKEY <Replace with a valid IPC Key>
#Example:
#IPCKEY 123456
MASTER simple
MAXACCESSERS 5
MAXSERVERS 5
MAXSERVICES 10
MODEL SHM
LDBAL N
*MACHINES
DEFAULT:
APPDIR="<Replace with the current directory pathname>"
TUXCONFIG="<Replace with your TUXCONFIG Pathname>"
TUXDIR="<Directory where TUXEDO is installed>"
#Example:
# APPDIR="/home/me/simpapp"
# TUXCONFIG="/home/me/simpapp/tuxconfig"
# TUXDIR="/usr/tuxedo"
<Machine-name> LMID=simple
#Example:
#beatux LMID=simple
*GROUPS
GROUP1
```

```
LMID=simple GRPNO=1 OPENINFO=NONE
*SERVERS
DEFAULT:
CLOPT="-A"
simplserv SRVGRP=GROUP1 SRVID=1
*SERVICES
TOUPPER
```

Edit the configuration file for your application to replace the strings enclosed in angle brackets with values specific to your installation. Here is a description of the kinds of values you need to provide:

IPCKEY

carries a numeric key that identifies the shared memory segment where the structures used by your application are located. The value must be greater than 32,768 and less than 262,143.

machine_name

is the node name of the machine. To obtain the node name on a UNIX system, run the `uname -n` command. If you are using an NT platform and you do not know the node name of your machine, see your system administrator.

APPPDIR = *string_value*

APPPDIR refers to directories in which application and administrative servers will be booted. *string_value* is the absolute pathname of that directory, optionally followed by a colon-separated list of other directory pathnames, on the machine being defined.

TUXCONFIG = *string_value*

TUXCONFIG is the binary version of the UBBCONFIG file, produced by `tmloadcf(1)`. *string_value* is the absolute pathname of the file or device of the TUXCONFIG file.

TUXDIR = *string_value*

names the base directory of the BEA TUXEDO system software. It must be an absolute pathname.

If you need to look up other values when editing your configuration file, the complete syntax can be found on the `ubbconfig(5)` reference page.

Note: The configuration file must be edited before you use `tmloadcf(1)` to verify the IPC requirements (see the next section), or `tmloadcf` will fail with syntax errors.

Verifying IPC Requirements

The BEA TUXEDO system uses UNIX system Interprocess Communications (IPC) resources heavily. On many UNIX system platforms the default values for the parameters that control the size and quantity of the various IPC resources are below the minimums needed to run even a modest BEA TUXEDO system application, so it becomes necessary to reset some of the parameters. After editing your configuration file, the next step in determining how things stand with your application is to determine if the IPC resources suffice for the application.

To do this, invoke the `tmloadcf(1)` command, specifying your edited configuration file as input:

```
tmloadcf -c ubbconfig
```

An example of the output is shown in Listing 3-2, which is based on the values in `ubbsimple`.

Listing 3-2 : Output produced by `tmloadcf -c`

```

Ipc sizing (minimum /T values only)...
                Fixed Minimums Per Processor
SHMMIN: 1
SHMALL: 1
SEMMAP: SEMMNI
                Variable Minimums Per Processor
                SEMUME,      A      SHMMAX
                SEMMNU,      *
Node  SEMMNS  SEMMSL  SEMMSL  SEMMNI  MSGMNI  MSGMAP  SHMSEG
-----
sftuxe  17      5      12     A + 1   13      26      75K

```

where $1 \leq A \leq 8$.

The number of expected application clients per processor should be added to each `MSGMNI` value.

This output indicates that to run `simpapp`, your UNIX system must have `SEMUME`, `SEMMNU`, and `SEMMNS` set to no less than 17. `SEMMSL` must be at least 5, and `SEMMNI` and `SEMMAP` at least 4 (assuming `A` is 3). `MSGMNI` must be at least 13, and `MSGMAP` at least 26. Finally, the product of `SHMMAX` and `SHMSEG` must be at least 75K bytes.

Of course, the IPC values are application dependent, and the numbers in this example reflect a very small configuration. If other applications that use IPC resources are running on the same system with a BEA TUXEDO system application, then the requirements of both applications must be satisfied. Keep in mind also that every node participating in an application must have sufficient IPC resources available.

If the current IPC resources are inadequate, you must increase the values of the associated IPC parameters. For instructions on determining and changing the current IPC values for your platform, see the data sheet for your platform in Appendix A.

Creating the Universal Device List and TLOG

The Universal Device List (UDL) is like a map of the BEA TUXEDO system file system. It gets loaded into shared memory when the application is booted. The TLOG refers to a log in which information on transactions is kept until the transaction is completed.

Creating the UDL

To create the UDL, execute the following command before the application has been booted:

```
tmadmin -c  
crdl -z config -b blocks
```

where `-z config` specifies the full pathname for the device where the UDL should be created and `-b blocks` specifies the number of blocks to be allocated on the device. `config` should match the value of the `TLOGDEVICE` parameter in the `MACHINES` section of the `UBBCONFIG` file.

Creating the TLOG

Several parameters in the `MACHINES` section of the `UBBCONFIG` file are used to define a global transaction log (TLOG). The BEA TUXEDO system administrator must manually create the device list entry for the `TLOGDEVICE` on each machine where a TLOG is needed. This can be done either before or after `TUXCONFIG` has been loaded, but it must be done before the system is booted.

To create an entry in the UDL for the TLOG device, create the UDL as described above on each node that will be involved with global transactions. If the `TLOGDEVICE` is mirrored between two machines, it is not necessary to do this on the paired machine. The BBL then initializes and opens the TLOG during the boot process.

Starting the Listener Process

When used in a distributed environment, the BEA TUXEDO system requires the capability to start, shut down, and administer processes on remote nodes running BEA TUXEDO system servers. The `tlisten(1)` process provides this facility. Once `tlisten` is running, `tmbboot(1)`, for example, can start BEA TUXEDO system servers on remote nodes.

`tlisten` is a generic listener process that operates with either of the two network interfaces: Sockets or TLI. It runs as a daemon process, and there are several ways it can be started:

- ◆ by the UNIX system administrator as part of a UNIX initialization (boot) script
- ◆ by the BEA TUXEDO system administrator as a `cron` job
- ◆ by the BEA TUXEDO system administrator starting `tlisten` manually from the command line

In all cases the same basic invocation syntax is used:

```
TUXDIR=tuxdir; export TUXDIR
LD_LIBRARY_PATH=libpath:$LD_LIBRARY_PATH; export LD_LIBRARY_PATH
$TUXDIR/bin/tlisten -d devname -l nlsaddr -u appuid
```

Note: If your system uses an environment variable other than `LD_LIBRARY_PATH` for the shared library path, specify that variable, instead.

The `-d` and `-l` options are required. The value for `-d` represents the network provider. The correct values for various platforms are shown in Table 3-1.

Table 3-1 Network devices for `tlisten`

Platform	Device Name
AIX 4.1.4	<code>/dev/null</code>
AIX 4.2	<code>/dev/null</code>
DG-UX 4.11	<code>/dev/tcp</code>
Digital UNIX 4.0	<code>/dev/streams/xtiso/tcp</code>
Dynix/ptx 4.2	<code>/dev/tcp</code>
HP-UX 10.10	<code>/dev/null</code>
HP-UX 10.20	<code>/dev/null</code>
NCR SVR4 3.00	<code>/dev/tcp</code>
SCO 5.0	<code>/dev/inet/tcp</code>
SGI IRIX 6.2	<code>/dev/tcp</code>
SINIX 5.43	<code>/dev/tcp</code>
Solaris 2.5.1	<code>/dev/tcp</code>
Tandem NonStop-UX C21	<code>/dev/tcp</code>
Unisys SVR4 V1.4	<code>/dev/tcp</code>
UnixWare 2.1	<code>/dev/tcp</code>

The value for `-l` should be the same as that specified for the `NLSADDR` parameter in the `NETWORK` section of the configuration file. For information on determining the value of `NLSADDR`, see the `ubbconfig(5)` or `tlisten(1)` reference page, or the *BEA TUXEDO Administrator's Guide*.

Use the `-u appuid` option when the command is part of an installation script run by `root`. The value of *appuid* is the UID or login name of the BEA TUXEDO system administrator; the numeric version is the same as the value of the UID parameter in the `*RESOURCES` section of the configuration file. This means that even though the `tlisten` process is started by `root`, it runs with the effective UID of the owner of the BEA TUXEDO system installation. If `tlisten` is started by the BEA TUXEDO system administrator either manually or as a `cron` job, the `-u` option is unnecessary, since the job is already owned by the right account.

Using the *TYPE* Parameter in *UBBCONFIG*

The *TYPE* parameter in the `MACHINES` section of a configuration file specifies the invocation of the XDR (EXternal Data Representation) encode/decode routines when messages are passed between unlike machines. The term “unlike” applies even to machines of the same type if the compiler on each machine is different. In such a case, give each machine a unique *TYPE* string to force the message to go through the encode/decode routines.

Rebuilding Applications

Now that you have successfully installed the BEA TUXEDO system, you need to rebuild all application clients and servers that will execute on systems upgraded to Release 6.5. You should also remove the old `TUXCONFIG` files and reload them using the newly installed `tmloadcf(1)`.

If your BEA TUXEDO system applications are distributed, then the master and backup master nodes must run the highest release of BEA TUXEDO in the configuration. Other nodes, including workstation clients, may continue to use executables from the previous release. For example, if your master and backup master are running Release 6.5, then Release 4.2.2 or later may still be used on other nodes.

There is one important exception to the “highest release” rule. If you wish to install Release 6.5 only on workstation clients, but you do not want to upgrade any of your BEA TUXEDO system server nodes to Release 6.5, you may do so. In other words, workstation clients at any release level beginning with 4.2.2 may be intermixed freely in a configuration whose master is running Release 4.2.2 or later.

Threaded Access to Libraries

The BEA TUXEDO system libraries are not thread-safe. This means that either

- ◆ applications should not use threads, or
- ◆ applications must serialize threaded access through all BEA TUXEDO system calls (such as `ATMI`, `FML`, `userlog()`, and so on).

A Platform Data Sheets

Introduction

This document contains detailed information about the platforms on which Release 6.5 of the BEA TUXEDO System is supported.

Each data sheet includes the following platform-specific information:

- ◆ A list of available BEA TUXEDO packages
- ◆ Hardware, software, and disk space requirements
- ◆ Tuning the UNIX kernel and accessing the CD-ROM drive

Supported Platforms

The following table indicates those platforms on which the BEA TUXEDO System is supported for Release 6.5. Platforms new to v6.5 are represented in *italic*. Data sheets are provided for each platform.

Vendor	Operating System	Release/Version	BEA TUXEDO Version
Apple	Mac OS	7.5	Client only: continues to be supported in v6.5

A Platform Data Sheets

Vendor	Operating System	Release/Version	BEA TUXEDO Version
Data General	DG/UX	4.11 (Intel)	Continues to be supported in v6.5
	DG/UX	4.11 (M88k)	Continues to be supported in v6.5
Digital	Digital UNIX	4.0d (Alpha)	Continues to be supported in v6.5
	Digital UNIX	4.0b (Alpha)	Continues to be supported in v6.5
	Digital UNIX	3.2 (Alpha)	Continues to be supported in v6.5
	<i>OpenVMS</i>	<i>7.1 (Alpha)</i>	<i>New for v6.5</i>
Fujitsu	UXP/DS	2.0 (on DS/90)	Continues to be supported in v6.5
HP	HP-UX	11.0	Continues to be supported in v6.5
	HP-UX	10.20	Continues to be supported in v6.5
	HP-UX	10.10	Continues to be supported in v6.5
	HP-UX	10.01	Continues to be supported in v6.5
IBM	AIX	4.3 (RS/6000, SP2)	Continues to be supported in v6.5
	AIX	4.2.1 (RS/6000, SP2)	Continues to be supported for v6.5
	AIX	4.1.4 (RS/6000, SP2)	Continues to be supported for v6.5
	<i>OS/390 Unix System Services</i>	<i>V2R4</i>	<i>New for v6.5</i>
	OS/2	3.0	Client only: Continues to be supported for v6.5
	<i>OS/400</i>	<i>4.3 (RISC)</i>	<i>New for v6.5</i>
	OS/400	4.1 (RISC)	Continues to be supported for v6.5

Vendor	Operating System	Release/Version	BEA TUXEDO Version
Microsoft	Windows NT	4.0 (Intel)	Continues to be supported for v6.5
	Windows NT	4.0 (Alpha)	Continues to be supported for v6.5
	<i>Windows 98</i>	98	Client only: <i>New for v6.5</i>
	Windows 95	95	Client only: Continues to be supported for v6.5
	Windows	3.x	Client only: Continues to be supported for v6.5
	DOS	6.1	Client only: Continues to be supported for v6.5
NCR	<i>MP-RAS</i>	3.02	<i>New for v6.5</i>
	MP-RAS	3.01	Continues to be supported for v6.5
NEC	UX/4800	2.0 (on EWS 4800)	Continues to be supported for v6.5
SCO	<i>UnixWare</i>	7	<i>New for v6.5</i>
	UnixWare	2.1	Continues to be supported for v6.5
	OpenServer	5.0 (Intel)	Continues to be supported for v6.5
Sequent	<i>DYNIX/ptx</i>	4.4.2	<i>New for v6.5</i>
	DYNIX/ptx	4.2	Continues to be supported for v6.5
SGI	<i>IRIX</i>	6.5	<i>New for v6.5</i>
	IRIX	6.4	Continues to be supported for v6.5
	IRIX	6.2	Continues to be supported for v6.5
Siemens Pyramid	<i>Reliant UNIX</i>	5.4.4b	<i>New for v6.5</i>
	Reliant UNIX	5.4.3c	Continues to be supported for v6.5
	Reliant UNIX	5.4.3b	Continues to be supported for v6.5
<i>Slackware</i>	<i>Linux</i>	2.0.34	Client only; <i>New for v6.5</i>

A Platform Data Sheets

Vendor	Operating System	Release/Version	BEA TUXEDO Version
Sun	<i>Solaris</i>	<i>2.7 (Intel)</i>	<i>New for v6.5</i>
	<i>Solaris</i>	<i>2.7 (UltraSPARC)</i>	<i>New for v6.5</i>
	Solaris	2.6 (Intel)	Continues to be supported for v6.5
	Solaris	2.6 (UltraSPARC)	Continues to be supported for v6.5
	Solaris	2.5.1 (Intel)	Continues to be supported for v6.5
	Solaris	2.5.1 (UltraSPARC)	Continues to be supported for v6.5
	Solaris	2.4 (Intel)	Continues to be supported for v6.5
Tandem	<i>NonStop-UX</i>	<i>C41</i>	<i>New for v6.5</i>
	NonStop-UX	C21	Continues to be supported for v6.5
UNISYS	SVR4	1.4	Continues to be supported for v6.5

Apple - Mac OS v.7.5

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO System Workstation (no COBOL support)

Hardware Requirements

- ◆ For 68K development: Macintosh 68020 or greater, II series or Quadra series
- ◆ For Power PC development: Any Power PC-based Macintosh
- ◆ 16 MB of RAM

Software Requirements

- ◆ Macintosh System Version 7.5 or later
- ◆ Macintosh TCP/IP Version 2.0.6 or later
- ◆ If you are using the Symantec Think C Development Environment (68K only):
 - ◆ Symantec Think C Version 7.0 or later
- ◆ If you are using the Metrowerks Code Warrior Development Environment (PowerPC only):
 - ◆ Metrowerks Code Warrior Version 9.0 or later
 - ◆ Macintosh Programmer's Workshop tools (included on the Metrowerks CD)

Network

- ◆ TCP/IP

Disk Space Requirements

Package	Blocks Required
Workstation	3.0 MB

Platform-Specific Notes

The operating system must be configured for 32-bit addressing, and the minimum cache size must be 512 Kbytes.

Data General - DG/UX v4.11 on AviiON (Intel & M88K)

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Data General AViiON
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server.

Software Requirements

- ◆ DG/UX 4.11
- ◆ DG/UX C Compiler 5.4 (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL version 4.0 (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	38800 blocks
BEA TUXEDO Workstation only	9400 blocks
WEB GUI Doc only	9700 blocks

Platform-Specific Notes

To mount a CD enter the following commands:

```
su
mkdir /cdrom (or some other mount point)
mount -t cdrom -o noversion /dev/pdsk/pdsk_num /cdrom
```

where pdsk_num (a numeric value) is listed in the table found in /etc/devlinktab.

Tunable Parameters

You will probably need to reconfigure the DG/UX kernel before running BEA TUXEDO because the default values of some kernel parameters are too low. For instructions about reconfiguring, rebuilding and rebooting DG/UX, see the DG/UX System documentation. The following parameters may need to be increased.

DG-UX Name	Traditional Name	Defaults
shmmax	SHMMAX	4194304
shmseg	SHMSEG	256
shmmni	SHMMNI	1024
semms*	SEMMNS	128
semgni	SEMMNI	64
semmsl	SEMSL	256
semume	SEMUME	1024
msggni	MSGMNI	1024
msgmax	MSGMAX	2048
msgmnb	MSGMNB	4096
msgtql	MSGTQL	1024
msgseg	MSGSEG	1024
maxup	MAXUP	50
nproc	NPROC	256

Note: Name is not used, but is provided for compatibility.

Digital UNIX v4.0 on DEC Alpha

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ DEC 2000, 2100, 3000, 4000, 7000, or 10000 Series processor
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ Digital UNIX 4.0
- ◆ DEC ANSI C Compiler (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL version 4.1 (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the SOCKETS network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	33700 blocks
BEA TUXEDO Workstation only	7660 blocks
WEB GUI Doc only	9100

Mounting a CD requires the type “CDFFS.” Because CDFFS is a configurable kernel option, the following line must exist in the system configuration file:

```
options CDFFS
```

If the system configuration file does not contain this line, modify the file and then rebuild the kernel.

To mount a CD, enter the following commands:

```
su
mkdir /cdrom
/usr/sbin/mount -r -t cdfs -o noversion /dev/rzunit #c /cdrom
```

where unit # is the unit number of your CD-ROM drive.

In almost all cases, the unit number of the CD-ROM drive on a new system is 4 (i.e., /dev/rz4c). However, to ensure that you have the correct unit number of the drive, do this:

```
su
file /dev/rrz*c
```

The output will identify the CD-ROM drive as an RRD disk. The unit number of the drive will be in the left-hand column. For example,

```
/dev/rrz4c: character special (8/4098) SCSI #0 RRD43 disk #32 (SCSI
ID #4)
```

Tunable Parameters

You will probably need to reconfigure the kernel before running BEA TUXEDO because the default values of some kernel parameters are too low. For instructions about reconfiguring, rebuilding, and rebooting, see the following documentation from Digital: the `doconfig(8)` reference page and the *System Tuning and Performance Management* manual. The following parameters may need to be increased.

DUX Name	Traditional Name	Defaults
shmmax	SHMMAX	4194304
shmseg	SHMSEG	32
shmmni	SHMMNI	100
semmns	SEMMNS	60
semmni	SEMMNI	10
semmsl	SEMMSL	25
semume	SEMUME	10
semopm		10
semvmx		32767
semaem		16384
msgmni	MSGMNI	50
msgmax	MSGMAX	8192
msgmnb	MSGMNB	16384
msgtql	MSGTQL	40
maxusers	maxusers	varies
maxproc	NPROC	20+8*maxusers
maxuprc	MAXUP	64

To determine the current value of a tunable parameter, examine the kernel configuration file located in the `/sys/conf` directory. This file typically has the same name as the system (node) name.

To change the value of a tunable parameter, follow the instructions on the `dmconfig` reference page.

To specify the value of a parameter that was previously unspecified, add a line such as

```
semmni 256
```

(where `semmni` is the name of the parameter and 256, its value) to the kernel configuration file.

Digital UNIX v3.2 on DEC Alpha

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ DEC 2000, 2100, 3000, 4000, 7000, or 10000 Series processor
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ Digital UNIX 3.2
- ◆ DEC ANSI C Compiler (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the SOCKETS network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	35700 blocks
BEA TUXEDO Workstation only	8100 blocks
WEB GUI Doc only	9100 blocks

Platform-Specific Notes

Mounting a CD requires the type “CDFS.” Because CDFS is a configurable kernel option, the following line must exist in the system configuration file:

```
options CDFS
```

If the system configuration file does not contain this line, modify the file and then rebuild the kernel.

To mount a CD, enter the following commands:

```
su
mkdir /cdrom
/usr/sbin/mount -r -t cdfs -o noversion /dev/rzunit #c /cdrom
```

where unit # is the unit number of your CD-ROM drive.

In almost all cases, the unit number of the CD-ROM drive on a new system is 4 (i.e., /dev/rz4c). However, to ensure that you have the correct unit number of the drive, do this:

```
su
file /dev/rrz*c
```

The output will identify the CD-ROM drive as an RRD disk. The unit number of the drive will be in the left-hand column. For example,

```
/dev/rrz4c: character special (8/4098) SCSI #0 RRD43 disk #32 (SCSI
ID #4)
```

Tunable Parameters

You will probably need to reconfigure the kernel before running BEA TUXEDO because the default values of some kernel parameters are too low. For instructions about reconfiguring, rebuilding, and rebooting, see the following documentation from

Digital: the `doconfig(8)` reference page and the *System Tuning and Performance Management* manual. The following parameters may need to be increased.

DUX Name	Traditional Name	Defaults
shmmax	SHMMAX	4194304
shmseg	SHMSEG	32
shmmni	SHMMNI	100
semms	SEMMNS	60
semnmi	SEMMNI	10
semmsl	SEMMSL	25
semume	SEMUME	10
semopm		10
semvmx		32767
semaem		16384
msgmni	MSGMNI	50
msgmax	MSGMAX	8192
msgmnb	MSGMNB	16384
msgtql	MSGTQL	40
maxusers	maxusers	varies
maxproc	NPROC	20+8*maxusers
maxuprc	MAXUP	64

- ◆ To determine the current value of a tunable parameter, examine the kernel configuration file located in the `/sys/conf` directory. This file typically has the same name as the system (node) name.
- ◆ To change the value of a tunable parameter, follow the instructions on the `dmconfig` reference page.
- ◆ To specify the value of a parameter that was previously unspecified, add a line such as

```
semmni 256
```

(where `semmni` is the name of the parameter and 256, its value) to the kernel configuration file.

Digital – OpenVMS v7.1 on DEC Alpha

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ DEC Alpha
- ◆ 64 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application plus 0.5 - 1MB for each application server

Software Requirements

- ◆ DEC AXPVMS OpenVMS v7.1
- ◆ DEC C and/or DEC COBOL compiler(s) must be installed properly on the development platform (BEA TUXEDO Development Environment only)
- ◆ Web Server: Netscape Commerce Server

Network

TCP/IP Services v4.1 for OpenVMS (UCX v4.1-12)

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO System	50000 blocks
BEA TUXEDO Workstation for OpenVMS	17000 blocks
WEB GUI Doc only	9100 blocks

Platform-Specific Notes

All BEA TUXEDO files that contain file names (such as TUXCONFIG) must use the native OpenVMS format. File specifications can be separated by a comma (.). For example, APPDIR might be specified as

```
APPDIR="DKA100:[TUXEDO.APPS.SIMPAPP],DKA100:[TUXEDO.APPS.QSAMP]"
```

OpenVMS has several naming conventions. The following table lists valid file extensions and shows how they are interpreted by OpenVMS and by the BEA TUXEDO system.

Use This Extension	For This Type of File
.C	C source file
.COB	COBOL source file
.COM	Script containing DCL commands that will be run by the command interpreter
.CPY	COBOL copy file
.EXE	Binary executable file or shared library (executable image)
.H	C header file
.OLB	Binary static object library

Use This Extension	For This Type of File
.OPT	File in which you can specify options (such as functions to be exported from a library) that will be used by the linker
.VV	Binary view file compiled with <code>viewc(1)</code> or <code>viewc32(1)</code>

- ◆ BEA TUXEDO COBOL copy files are named with a `.cpy` extension (instead of the `.cbl` extension used on other platforms).

- ◆ COBOL applications ported from other UNIX platforms need to remove any MicroFocus COBOL specifics such as the `ACCEPT` verb. For example:

```
ACCEPT SEND-STRING FROM COMMAND-LINE.
```

- ◆ All upper-case arguments to BEA TUXEDO commands (such as `tmboot` and `tmshutdown`) must be enclosed in double quotes on the command line. If they are not, they will be converted to lower case by OpenVMS and misinterpreted by the system.

```
$ tmboot "-A"
```

Any command that might run a shell script is run through the DCL interpreter, and hence should be a proper DCL script. An example of a BEA TUXEDO service that might run scripts is the `qadmin threshold` command.

Tunable Parameters

`GBLSECTIONS` should be increased by 1.

`GBLPAGES` and `GBLPAGFIL` need to be increased. To determine the appropriate amount of the increase, use the following formula: $8\text{MB}/\text{page_size}$. On Alpha machines the default page size is 8192; increase `GBLPAGES` by 1024.

The following parameters are found in the `vps_init.txt` file.

OpenVMS Name	Traditional Name	Value
<code>%n_shmmax</code>	<code>SHMMAX</code>	67108864
<code>%n_shmseg</code>	<code>SHMSEG</code>	100

OpenVMS Name	Traditional Name	Value
%n_shmmni	SHMMNI	32
%n_shmmn	SEMMNI	0
%n_semmsl	SEMMSL	250
%n_semnu	SEMMNU	256
%n_semume	SEMUME	256
%n_semopm	SEMOPM	10
%n_semni	SEMMNI	475
%n_msgmni	MSGMNI	2000
%n_msgmax	MSGMAX	800000
%n_msgmb	MSGMNB	800000
%n_msgtql	MSGTQL	2000
%n_msgseg	MSGSEG	2000
%n_processes	NPROC	256

Fujitsu - UXP/DS V20 on DS/90

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Fujitsu DS/90
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ Fujitsu UXP/DS V20
- ◆ ANSI C Compiler (BEA TUXEDO Development Environment only)
- ◆ COBOL 85 compiler
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	41500 blocks
BEA TUXEDO Workstation only	10200 blocks
WEB GUI Doc only	9100 blocks

Platform-Specific Notes

To mount a CD, examine the file `/etc/vfstab` to determine whether there is a standard place in which to mount a CD. If so, type the mount command and specify the directory named in the `/etc/vfstab` entry. For example,

```
su
/etc/mount /cdrom
```

mounts a CD if `/etc/vfstab` contains an entry that specifies `/cdrom` as the mount point for CDs.

If there is no CD-ROM entry, execute

```
su
mkdir /cdrom
/etc/mount -F cdfs -r cd_device /cdrom
```

where `cd_device` is the name of the CD-ROM device file, typically `/dev/cd0`.

None of the sample applications provided with BEA TUXEDO run on a DS/90 platform on which Fujitsu COBOL 85 compiler is used. You can tailor the CSIMPAPP application to run, however, by making the following changes:

- ◆ Set COBCOPY instead of COBCPY.
- ◆ Set ALTCC to cobcc85.
- ◆ Make sure there are no ACCEPT or DISPLAY statements in the code.
- ◆ Ignore the alignment warning; the compile is okay.

Tunable Parameters

SVR4 Name	Traditional Name	Defaults
shmmax	SHMMAX	524288
shmseg	SHMSEG	100
shmmni	SHMMNI	100
semmns*	SEMMNS	60
semmni	SEMMNI	512
semmsl	SEMMSL	25
semmap	SEMMAP	10
semnu	SEMMNU	30
semume	SEMUME	25
msgmni	MSGMNI	512
msgmap	MSGMAP	100
msgmax	MSGMAX	16384
msgmnb	MSGMNB	32767
msgssz	MSGSSZ	8
msgtql	MSGTQL	8192
msgseg*	MSGSEG	32767

SVR4 Name	Traditional Name	Defaults
maxup	MAXUP	128
nproc	NPROC	1000

Note: Name is not used, but is provided for compatibility.

HP UX - v11.0 on HP 9000 Series 800

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ HP 9000 series 800
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ HP-UX Release 11.0
- ◆ HP-UX ANSI C Compiler (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL 4.1 (certified for 10.X) (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the Sockets network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	43700 blocks
BEA TUXEDO Workstation only	10300 blocks
WEB GUI Doc only	9050 blocks

Tunable Parameters

You will probably need to reconfigure the HP-UX kernel before running BEA TUXEDO because the defaults of some kernel parameters are too low. For instructions about reconfiguring HP-UX, see “Setting Up a System” in the *HP-UX System Administration Tasks Manual*. You may need to increase the following parameters.

HP-UX Name	Traditional Name	Defaults
shmmax	SHMMAX	67108864
shmseg	SHMSEG	12
shmmni	SHMMNI	100
semms	SEMMNS	128
semnmi	SEMMNI	64
semmap	SEMMA	semnmi+2
semnmu	SEMMNU	30
semume	SEMUME	10
msgmni	MSGMNI	50
msgmap	MSGMAP	2+msgtql

HP-UX Name	Traditional Name	Defaults
msgmax	MSGMAX	8192
msgmnb	MSGMNB	16384
msgssz	MSGSSZ	8
msgtql	MSGTQL	40
msgseg	MSGSEG	2048
maxusers	MAXUSERS	32
nproc	NPROC	20+8*maxusers
maxuprc	MAXUPRC	50
maxfiles	NFILES	60

Platform-Specific Notes

To mount a CD, type the following commands:

```
su
mkdir /cdrom
mount -F cdfs -o cdfcase /dev/dsk/ cdrom_device /cdrom
```

where *cdrom_device* is listed in the output of the `ioscan -f -n` command.

HP UX - v10.20 on HP 9000 Series 800

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ HP 9000 series 800
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ HP-UX Release 10.20
- ◆ HP-UX ANSI C Compiler (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Version 4.1 (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the Sockets network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	43000 blocks
BEA TUXEDO Workstation only	10200 blocks
WEB GUI Doc only	9100 blocks

Tunable Parameters

You will probably need to reconfigure the HP-UX kernel before running BEA TUXEDO because the defaults of some kernel parameters are too low. For instructions about reconfiguring HP-UX, see “Setting Up a System” in the *HP-UX System Administration Tasks Manual*. You may need to increase the following parameters.

HP-UX Name	Traditional Name	Defaults
shmmx	SHMMAX	67108864
shmseg	SHMSEG	12
shmmni	SHMMNI	100
semmns	SEMMNS	128
semmni	SEMMNI	64
semmap	SEMMA	semmni+2
semmnu	SEMMNU	30
semume	SEMUME	10
msgmni	MSGMNI	50
msgmap	MSGMAP	2+msgtql

HP-UX Name	Traditional Name	Defaults
msgmax	MSGMAX	8192
msgmnb	MSGMNB	16384
msgssz	MSGSSZ	8
msgtql	MSGTQL	40
msgseg	MSGSEG	2048
maxusers	MAXUSERS	32
nproc	NPROC	20+8*maxusers
maxuprc	MAXUPRC	50
maxfiles	NFILES	60

Platform-Specific Notes

To mount a CD, type the following commands:

```
su
mkdir /cdrom
mount -F cdfs -o cdcase /dev/dsk/ cdrom_device /cdrom
```

where *cdrom_device* is listed in the output of the `ioscan -f -n` command.

HP UX - v10.10 on HP 9000 Series 800

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ HP 9000 series 800
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ HP-UX Release 10.10
- ◆ HP-UX ANSI C Compiler (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Version 3.2 (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the Sockets network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	43000 blocks
BEA TUXEDO Workstation only	10200 blocks
WEB GUI Doc only	9100 blocks

Tunable Parameters

You will probably need to reconfigure the HP-UX kernel before running BEA TUXEDO because the defaults of some kernel parameters are too low. For instructions about reconfiguring HP-UX, see “Setting Up a System” in the *HP-UX System Administration Tasks Manual*. You may need to increase the following parameters.

HP-UX Name	Traditional Name	Defaults
shmmax	SHMMAX	67108864
shmseg	SHMSEG	12
shmmni	SHMMNI	100
semms	SEMMNS	128
semnmi	SEMMNI	64
semmap	SEMMA	semnmi+2
semnmu	SEMMNU	30
semume	SEMUME	10
msgmni	MSGMNI	50
msgmap	MSGMAP	2+msgtql

HP-UX Name	Traditional Name	Defaults
msgmax	MSGMAX	8192
msgmnb	MSGMNB	16384
msgssz	MSGSSZ	8
msgtql	MSGTQL	40
msgseg	MSGSEG	2048
maxusers	MAXUSERS	32
nproc	NPROC	20+8*maxusers
maxuprc	MAXUPRC	50
maxfiles	NFILES	60

Platform-Specific Notes

To mount a CD, type the following commands:

```
su
mkdir /cdrom
mount -F cdfs -o cdcase /dev/dsk/ cdrom_device /cdrom
```

where *cdrom_device* is listed in the output of the `ioscan -f -n` command.

HP UX - v10.01 on HP 9000 Series 800

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ HP 9000 series 800
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ HP-UX Release 10.01
- ◆ HP-UX ANSI C Compiler (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Version 3.1 (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the Sockets network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	42900 blocks
BEA TUXEDO Workstation only	10100 blocks
WEB GUI Doc only	9100 blocks

Tunable Parameters

You will probably need to reconfigure the HP-UX kernel before running BEA TUXEDO because the defaults of some kernel parameters are too low. For instructions about reconfiguring HP-UX, see “Setting Up a System” in the *HP-UX System Administration Tasks Manual*. You may need to increase the following parameters.

HP-UX Name	Traditional Name	Defaults
shmmmax	SHMMAX	67108864
shmseg	SHMSEG	12
shmmni	SHMMNI	100
semmns	SEMMNS	128
semmni	SEMMNI	64
semmap	SEMMA	semmni+2
semmnu	SEMMNU	30
semume	SEMUME	10
msgmni	MSGMNI	50
msgmap	MSGMAP	2+msgtql

HP-UX Name	Traditional Name	Defaults
msgmax	MSGMAX	8192
msgmnb	MSGMNB	16384
msgssz	MSGSSZ	8
msgtql	MSGTQL	40
msgseg	MSGSEG	2048
maxusers	MAXUSERS	32
nproc	NPROC	20+8*maxusers
maxuprc	MAXUPRC	50
maxfiles	NFILES	60

Platform-Specific Notes

To mount a CD, type the following commands:

```
su
mkdir /cdrom
mount -F cdfs -o cdcase /dev/dsk/ cdrom_device /cdrom
```

where *cdrom_device* is listed in the output of the `ioscan -f -n` command.

IBM - AIX v4.3 on RS/6000 and SP2

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ IBM RS/6000 or SP2
- ◆ 64 MB of RAM
- ◆ 1 additional MB RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ AIX Release 4.3
- ◆ AIX XL C Compiler (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using Sockets network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	35000 blocks
BEA TUXEDO Workstation only	11400 blocks
WEB GUI Doc only	9100 blocks

Tunable Parameters

No IPC configuration is required for AIX Release 3. To change the value of a kernel tuning parameter (`maxuproc` only):

- ◆ Acquire superuser privileges.
- ◆ Determine the values of all tunable parameters.
- ◆ Change the parameter's value.
- ◆ Reboot the system.

Platform-Specific Notes

To mount a CD, examine the file `/etc/filesystems` to determine whether there is a standard place in which to mount a CD. If so, issue the mount command and specify the directory named in the `/etc/filesystems` entry. For example:

```
su
/etc/mount /cd
```

mounts a CD if `/etc/filesystems` contains an entry that specifies `/cd` as the mount point for CDs.

If `/etc/filesystems` does not contain a CD-ROM entry, execute

```
su
mkdir /cd
/etc/mount -v cdrfs -r cd_device /cd
```

where *cd_device* is the name of the CD-ROM device file, typically `/dev/cd0`.

Alternatively, you can use the System Management Interface Tool (SMIT) to perform the mount. To use SMIT, enter

```
smit mount
```

IBM - AIX v4.2.1 on RS/6000 and SP2

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ IBM RS/6000 or SP2
- ◆ 64 MB of RAM
- ◆ 1 additional MB RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ AIX Release 4.2.1
- ◆ AIX XL C Compiler (BEA TUXEDO Development Environment only)
- ◆ COBOL (BEA TUXEDO Development Environment only)
 - ◆ MicroFocus COBOL version 4.1
 - ◆ MicroFocus Update PRN 2XCLY/ZZN:8a.1d.12.02.
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using Sockets network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	34700 blocks
BEA TUXEDO Workstation only	11400 blocks
WEB GUI Doc only	9100 blocks

Tunable Parameters

No IPC configuration is required for AIX Release 4.2.1. To change the value of a kernel tuning parameter (`maxuproc` only):

- ◆ Acquire superuser privileges.
- ◆ Determine the values of all tunable parameters.
- ◆ Change the parameter's value.
- ◆ Reboot the system.

Platform-Specific Notes

To mount a CD, examine the file `/etc/filesystems` to determine whether there is a standard place in which to mount a CD. If so, issue the mount command and specify the directory named in the `/etc/filesystems` entry. For example:

```
su
/etc/mount /cd
```

mounts a CD if `/etc/filesystems` contains an entry that specifies `/cd` as the mount point for CDs.

If `/etc/filesystems` does not contain a CD-ROM entry, execute

```
su
mkdir /cd
/etc/mount -v cdrfs -r cd_device /cd
```

where *cd_device* is the name of the CD-ROM device file, typically `/dev/cd0`.

Alternatively, you can use the System Management Interface Tool (SMIT) to perform the mount. To use SMIT, enter

```
smit mount
```

IBM - AIX v4.1.4 on IBM RS/6000 and SP2

Available BEA TUXEDO Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ IBM RS/6000 or SP2
- ◆ 64 MB of RAM
- ◆ 1 additional MB RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ AIX Release 4.1.4
- ◆ AIX XL C Compiler (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL version 4.1 (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using Sockets network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	34600 blocks
BEA TUXEDO Workstation only	11400 blocks
WEB GUI Doc only	9100 blocks

Tunable Parameters

No IPC configuration is required for AIX Release 4.1.4. To change the value of a kernel tuning parameter (`maxuproc` only):

- ◆ Acquire superuser privileges.
- ◆ Determine the values of all tunable parameters.
- ◆ Change the parameter's value.
- ◆ Reboot the system.

Platform-Specific Notes

To mount a CD, examine the file `/etc/filesystems` to determine whether there is a standard place in which to mount a CD. If so, issue the mount command and specify the directory named in the `/etc/filesystems` entry. For example:

```
su
/etc/mount /cd
```

mounts a CD if `/etc/filesystems` contains an entry that specifies `/cd` as the mount point for CDs.

If `/etc/filesystems` does not contain a CD-ROM entry, execute

```
su
mkdir /cd
/etc/mount -v cdrfs -r cd_device /cd
```

where *cd_device* is the name of the CD-ROM device file, typically `/dev/cd0`.

Alternatively, you can use the System Management Interface Tool (SMIT) to perform the mount. To use SMIT, enter

```
smit mount
```

If the ISO 9660 CD cannot be properly mounted on AIX 4.1.4, contact IBM for APAR IX58771, which is part of PTF U444064.

IBM – OS/390 Unix System Services V2R4

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ MVS OS/390
- ◆ 128 MB of RAM
- ◆ 6 additional MB RAM for each BEA TUXEDO application, plus 3 - 6 MB per application server

Software Requirements

- ◆ OS/390 V2R4
- ◆ OS/390 V2R4 C Compiler (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the Sockets network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server software)	406568 blocks
BEA TUXEDO System Workstation only	47072 blocks
WEB GUI Doc only	9100 blocks

Tunable Parameters

No IPC configuration is required for OS/390 V2R4.

Platform-Specific Notes

- ◆ There is a known problem with BEA TUXEDO data dependent routing between EBCDIC machines (OpenEdition) and ASCII Machines when mixing data types (for example, uppercase and numeric types.)
- ◆ Release 6.5 offers two versions of the Security Add-on Package:
 - ◆ For the U.S. and Canada, a 128-bit link-level encryption package
 - ◆ For countries outside the U.S. and Canada, a 56-bit link-level encryption package

Each version is provided on a separate CD. (The Security Add-on Package is not included on the BEA TUXEDO Core System CD.)

When you install the Security Add-on Package on the MVS OpenEdition V2R4 platform, the entire BEA TUXEDO system is re-installed automatically. (This side effect applies only to this platform.) If you have installed patches before installing the Security Add-on Package, those patches will be overwritten. Make sure you have the correct patch level installed after you install the Security Add-on Package.

- ◆ To access a CD-ROM from OS/390, use NFS or Samba talking to a Unix or Windows workstation with a CD-ROM drive. NFS and Samba are readily available and widely used in the OS/390 environment.

IBM - OS/2 v3.0 on Intel

Available BEA TUXEDO Packages

- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Intel 80386 processor or later
- ◆ 16 MB of RAM

Software Requirements

- ◆ OS/2 Release 3.0
- ◆ IBM C Set C++ Compiler Version 3.0 (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL version 4.0 (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, provided by IBM, Version 2.0

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO Workstation only	5.8 MB

IBM - OS/400 v4.3 on RISC

Available BEA TUXEDO Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO System Workstation
- ◆ BEA TUXEDO Online Documentation

Hardware Requirements

- ◆ AS/400 E Series (PowerPC RISC architecture)
- ◆ Minimum 256 MB of RAM
- ◆ Minimum 2 GB of disk space
- ◆ Ethernet or Token Ring card

Software Requirements

- ◆ OS/400 V4R3
- ◆ ILE/C
- ◆ ILE/COBOL
- ◆ Client Access (PC-side as well as OS/400 side)

Network

- ◆ TCP/IP, using Sockets network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	200 MB
BEA TUXEDO Workstation only	55 MB
WEB GUI Doc only	5 MB

Tunable Parameters

No IPC resources are tunable.

Platform-Specific Notes

The installation requires a PC or a UNIX system residing on the same network as the AS/400. This PC or UNIX system must have a CD-ROM drive. See the README.txt file on the CD for installation instructions.

IBM - OS/400 v4.1 on RISC

Available BEA TUXEDO Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ AS/400 E Series (PowerPC RISC architecture)
- ◆ Minimum 256 MG of RAM
- ◆ Minimum 2 Gig of disk space
- ◆ Ethernet or Token Ring card

Software Requirements

- ◆ OS/400 V4R1
- ◆ ILE/C
- ◆ ILE/COBOL
- ◆ Client Access (PC-side as well as OS/400 side)

Network

- ◆ TCP/IP, using Sockets network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	200 MB
BEA TUXEDO Workstation only	55 MB
WEB GUI Doc only	5 MB

Tunable Parameters

No IPC resources are tunable.

Platform-Specific Notes

The installation requires a PC or a UNIX system residing on the same network as the AS/400. This PC or UNIX system must have a CD-ROM drive. See the README.txt file on the CD for installation instructions.

Microsoft Windows NT v4.0 on Intel

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation
- ◆ BEA TUXEDO Web GUI

Hardware Requirements

- ◆ x86 (INTEL)
- ◆ 32 MB of memory
- ◆ 100 MB of hard disk space

Software Requirements

- ◆ Windows NT Workstation or Server Release 4.0, service pack 3
- ◆ Microsoft© Visual C++ version 5, service pack 3
- ◆ MicroFocus COBOL Version 4.0 (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP provided by Windows NT (32-bit Winsock)

Disk Space Requirements Package

Package	Blocks Required
BEA TUXEDO software (client and server)	100 MB
BEA TUXEDO Workstation only	14 MB
WEB GUI Doc only	5 MB

Tunable Parameters

Parameter	Value
TUXIPC_MSG_BYTES	65536
TUXIPC_MSG_HDRS	8128
TUXIPC_MSG_QUEUE_BYTES	65536
TUXIPC_MSG_QUEUES	256
TUXIPC_MSG_SEG_BYTES	64
TUXIPC_MSG_SEGS	32767
TUXIPC_PROC	256
TUXIPC_SEM	1024
TUXIPC_SEM_IDS	1024
TUXIPC_SEM_UNDO	1024
TUXIPC_SHM_PROCS	500
TUXIPC_SHM_SEGS /	50

Microsoft Windows NT 4.0 on DEC Alpha

Available BEA TUXEDO Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation
- ◆ BEA TUXEDO Web GUI

Hardware Requirements

- ◆ DECpc LXP150, AlphaServer 1000A
- ◆ 32 MB of RAM

Software Requirements

- ◆ Microsoft Windows NT server for Alpha 4.0
- ◆ Microsoft Visual C++ RISC Edition Version 5.0 for Alpha, service pack 2
- ◆ MicroFocus COBOL Version 4.0 (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP using Sockets network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	46 MB
BEA TUXEDO Workstation only	14 MB
WEB GUI Doc only	5 MB

Tunable Parameters

Parameter	Value
TUXIPC_MSG_BYTES	65536
TUXIPC_MSG_HDRS	8128
TUXIPC_MSG_QUEUE_BYTES	65536
TUXIPC_MSG_QUEUES	256
TUXIPC_MSG_SEG_BYTES	64
TUXIPC_MSG_SEGS	32767
TUXIPC_PROC	256
TUXIPC_SEM	1024
TUXIPC_SEM_IDS	1024
TUXIPC_SEM_UNDO	1024
TUXIPC_SHM_PROCS	500
TUXIPC_SHM_SEGS /	50

Microsoft Windows 3.X

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Intel 80386 processor or later
- ◆ 16 MB of RAM

Software Requirements

- ◆ Microsoft Windows Version 3.1 or later
- ◆ Microsoft Visual C++ Version 1.5 (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Workbench for MS-DOS/Windows Version V3.4.19 (BEA TUXEDO Development Environment only)

Network

- ◆ TCP/IP, using the Windows Sockets interface Version 1.1

Disk Space Requirements

Package	Blocks Required
(Winsock)	4.5 MB

Microsoft Windows 98 on Intel

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO System Workstation
- ◆ BEA TUXEDO Online Documentation

Hardware Requirements

- ◆ Intel 80486 processor or later
- ◆ 32 MB of RAM

Software Requirements

- ◆ Microsoft Windows 98
- ◆ Microsoft Visual C++ Version 5.0 (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Version 4.0 (BEA TUXEDO Development Environment only)

Network

- ◆ TCP/IP provided by Windows NT (32-bit Winsock)

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO System Workstation	14 MB

Microsoft Windows 95 on Intel

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Intel 80486 processor or later
- ◆ 32 MB of RAM

Software Requirements

- ◆ Microsoft Windows 95
- ◆ Microsoft Visual C++ Version 5.0 (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Version 4.0 (BEA TUXEDO Development Environment)

Network

- ◆ TCP/IP provided by Windows NT (32-bit Winsock)

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO Workstation	14 MB

Microsoft DOS 6.1 on Intel

Available BEA TUXEDO Packages

- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Intel 8086 or later
- ◆ 640 KB of RAM

Software Requirements

- ◆ DOS Release 6.1 or later
- ◆ Microsoft Visual C++ Version 1.5 (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Workbench for MS-DOS Version 3.2 (BEA TUXEDO Development Environment only)

Network

- ◆ TCP/IP provided by Novell LAN WorkPlace for DOS Version 4.2 (BEA TUXEDO Runtime) or Novell LAN WorkPlace for DOS Developer's Toolkit Version 4.1 (BEA TUXEDO Development Environment)
- ◆ Alternatively, SPX provided by the Novell NetWare Client (BEA TUXEDO Runtime) or NetWare Client SDK Version 1.0 (BEA TUXEDO Development Environment)

Disk Space Requirements

Package	Development Environment	Runtime
BEA TUXEDO Workstation (LAN WorkPlace)	3.8 MB	1.4 MB
BEA TUXEDO Workstation (SPX)	3.8 MB	1.4 MB

NCR - MP-RAS v3.02

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ NCR System 3000
- ◆ 16 MB of RAM
- ◆ 1 additional MB RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ NCR UNIX SVR4 (MP-RAS 03.02)
- ◆ NCR High Performance C Compiler R1.0 (SCDE 2.03.00) (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Version 4.0 (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	49000 blocks
BEA TUXEDO Workstation only	12300 blocks
WEB GUI Doc only	9045 blocks

Platform-Specific Notes

To mount a CD, enter the following commands:

```
su
mkdir /cdrom
/etc/mount -F cdfs -r -o nmconv=m cd_device /cdrom
```

where *cd_device* is the name of the CD-ROM device file, such as `/dev/dsk/c0t0d0s0`.

Tunable Parameters

You will probably need to reconfigure the kernel before running the BEA TUXEDO system because the default values of some IPC parameters are too low. For instructions on reconfiguring, rebuilding, and rebooting, see the *UnixWare System Performance Administration Guide* and the `idtune(1)` and `idbuild(1)` entries in a UNIX system reference manual. You may need to increase the following parameters.

UnixWare Name	Traditional Name	Defaults
shmmax	SHMMAX	524288
shmseg	SHMSEG	6
shmmni	SHMMNI	100

UnixWare Name	Traditional Name	Defaults
semmns	SEMMNS	60
semmni	SEMMNI	10
semmsl	SEMMSL	25
semmap	SEMMAP	10
semmnu	SEMMNU	30
semume	SEMUME	10
msgmni	MSGMNI	50
msgmap	MSGMAP	100
msgmax	MSGMAX	2048
msgmnb	MSGMNB	4096
msgseg	MSGSEG	8
msgtql	MSGTQL	40
msgseg	MSGSEG	1024
nproc	NPROC	200
maxup	MAXUP	60

To change the value of a tunable parameter, complete the following procedure.

1. Acquire superuser privileges.

```
su root
```

2. Determine (by running the `idtune` command) the current default value of the tunable parameter to be changed.

```
/etc/conf/bin/idtune -g param
```

The output of `idtune` lists current, default, minimum, and maximum valid values.

3. Change the parameter's value:

```
/etc/conf/bin/idtune param new-value
```

4. If `idtune` fails because *new-value* exceeds the maximum allowed value, you must increase the maximum. (The maximum values of some parameters are set unnecessarily low in some releases of UnixWare.) To do this, edit `/etc/conf/mtune.d/type`, where *type* is `shm`, `sem`, or `msg`. Change the maximum value (in the last column) to the desired maximum.

5. Rebuild the operating system and reboot:

```
/etc/conf/bin/idbuild -B  
cd /  
shutdown -y -g0 -i6
```

6. Execute `idtune` again and supply the desired *new-value*.

7. Run `idbuild` to build a new kernel.

```
/etc/conf/bin/idbuild -B  
cd /  
shutdown -y -g0 -i6
```

8. Reboot your system.

NCR - MP-RAS v3.01

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ NCR System 3000
- ◆ 16 MB of RAM
- ◆ 1 additional MB RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ NCR UNIX SVR4 (MP-RAS 03.01)
- ◆ NCR High Performance C Compiler R1.0 (SCDE 2.03.00) (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Version 4.0 (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	49000 blocks
BEA TUXEDO Workstation only	12300 blocks
WEB GUI Doc only	9045 blocks

Platform-Specific Notes

To mount a CD, enter the following commands:

```
su
mkdir /cdrom
/etc/mount -F cdfs -r -o nmconv=m cd_device /cdrom
```

where *cd_device* is the name of the CD-ROM device file, such as `/dev/dsk/c0t0d0s0`.

Tunable Parameters

You will probably need to reconfigure the kernel before running BEA TUXEDO because the default values of some IPC parameters are too low. For instructions on reconfiguring, rebuilding and rebooting, see the *UnixWare System Performance Administration Guide* and the `idtune(1)` and `idbuild(1)` reference pages. You may need to increase the following parameters.

UnixWare Name	Traditional Name	Defaults
shmmax	SHMMAX	524288
shmseg	SHMSEG	6
shmmni	SHMMNI	100

UnixWare Name	Traditional Name	Defaults
semmns	SEMMNS	60
semmni	SEMMNI	10
semmsl	SEMMSL	25
semmap	SEMMAP	10
semmnu	SEMMNU	30
semume	SEMUME	10
msgmni	MSGMNI	50
msgmap	MSGMAP	100
msgmax	MSGMAX	2048
msgmnb	MSGMNB	4096
msgseg	MSGSEG	8
msgtql	MSGTQL	40
msgseg	MSGSEG	1024
nproc	NPROC	200
maxup	MAXUP	60

After acquiring superuser privileges, determine the current value of the tunable parameter to be changed. The output lists current, default, minimum, and maximum valid values.

```
su root
/etc/conf/bin/idtune -g param
```

Change the parameter's value:

```
/etc/conf/bin/idtune param new-value
```

If `idtune` fails because `new-value` exceeds the maximum allowed value, you must increase the maximum. (The maximum values of some parameters are set unnecessarily low in some releases of UnixWare). To do this, edit

`/etc/conf/mtune.d/type`, where *type* is `shm`, `sem`, or `msg`. Change the maximum value (in the last column) to the desired maximum. Then rebuild the operating system and reboot:

```
/etc/conf/bin/idbuild -B
cd /
shutdown -y -g0 -i6
```

Now execute `idune` again and supply the desired *new-value*. Run `idbuild` to build a new kernel and then reboot.

NEC - UX/4800 on EWS 4800 v2

Available BEA TUXEDO Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ NEC UX/4800
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each application, pls 0.5 - 1MB per application server

Software Requirements

- ◆ NEC UX/4800
- ◆ C Compiler
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP using Sockets network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	59500 blocks
BEA TUXEDO Workstation only	15300 blocks
WEB GUI Doc only	9100 blocks

Tunable Parameters

SVR4 Name	Traditional Name	Defaults
shmmax	SHMMAX	524288
shmseg	SHMSEG	64
shmmni	SHMMNI	100
semms	SEMMNS	600
semnmi	SEMMNI	100
semmsl	SEMMSL	25
semume	SEMUME	10
msgmni	MSGMNI	50
msgmax	MSGMAX	8192
msgmnb	MSGMNB	16384
msgssz	MSGSSZ	16384
msgtql	MSGTQL	200
maxup	MAXUP	100

A *Platform Data Sheets*

SVR4 Name	Traditional Name	Defaults
nproc	NPROC	256

SCO - OpenServer v5.0 on Intel

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Intel 80386 processor or later
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ SCO OpenServer Release 5.0
- ◆ ANSI C Compiler (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Version 4.1 (BEA TUXEDO Development Environment only).
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Note: Contact the BEA Customer Support Center and request a software patch to resolve CR 011532. You can contact the Support Center at any one of the following telephone numbers or at the email address listed below:

- ◆ Worldwide Customer Support Center: 408.743.4070

- ◆ USA Toll Free Number: 1.888.232.7878
- ◆ Email: support@beasys.com

Network

- ◆ TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	64300 blocks
BEA TUXEDO Workstation only	15900 blocks
WEB GUI Doc only	9100 blocks

Platform-Specific Notes

To mount a CD, do the following:

```
su
mkdir /cdrom
/etc/mount -f HS,lower -r cd-device /cdrom
```

where *cd-device* is typically /dev/cd0.

Tunable Parameters

You will probably need to reconfigure the SCO kernel before running BEA TUXEDO because the default values of some kernel parameters are too low. Information about configuring the kernel is provided in the “Performance and Troubleshooting” section of the *SCO Open Desktop/SCO Open Server System Administrator's Guide*. You may need to increase the following parameters.

SCO Name	Traditional Name	Defaults
shmmx	SHMMAX	524288
shmseg	SHMSEG	6
shmmni	SHMMNI	100
semnmi	SEMMNI	60
semmap	SEMMAP	10
semnmu	SEMMNU	10
semume	SEMUME	30
semmsl	SEMMSL	10
semopm	SEMOPM	25
msgmni	MSGMNI	10
msgmap	MSGMAP	50
msgmax	MSGMAX	100
msgmnb	MSGMNB	2048
msgssz	MSGSSZ	4096
msgtql	MSGTQL	8
msgseg	MSGSEG	40
msgseg	MSGSEG	4096
nproc	NPROC	400

SCO Name	Traditional Name	Defaults
maxup	MAXUP	200
nofiles	NOFILES	60
ulimit	ULIMIT	2097151
nregion	NREGION	300

To determine the value of a tunable parameter, examine the file `/etc/conf/cf.d/stune`.

To change the value of a tunable parameter, become superuser and then invoke `sysadmsh`, the system administration tool. Select System, then Configure, then Kernel, then Parameters, which allows you to interactively modify the values of kernel parameters. Do not set `MSGMAX` or `MSGMNB` above 32767; the message primitives don't work correctly if these values are set higher. When all changes are complete, select Rebuild to rebuild the kernel. Then reboot the system.

SCO - UnixWare v7

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Intel 80486 processor or later
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ UnixWare Release 7
- ◆ ANSI C Compiler (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL version 4.0 (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	44200 blocks
BEA TUXEDO Workstation only	11100 blocks
WEB GUI Doc only	8800 blocks

Platform-Specific Notes

To mount a CD, execute the following from the command line:

```
su
mkdir /cdrom1
mount -F cdfs -r -o nmconv=m cd-device /cdrom1
```

To determine the value of *cd-device*, execute

```
devattr cdrom1 bdevice
```

You can also mount a CD from the Desktop environment. From the UnixWare Desktop window, open the Disks-etc Folder Window by double-clicking on the Disks-etc icon. Then, from the Disks-etc window double-click on the *cdrom1* icon, which mounts the CD and displays its contents in the */cdrom1* Folder Window. When you close the */cdrom1* Folder Window, the CD is automatically unmounted.

UnixWare 7 typically defines */var/tmp* as an in-memory file system. Because */var/tmp* is used by the install script to unspool packages from the CD you should set (and export) *TMPDIR* to point to a directory with enough free space to accommodate the unspooling.

To share (export) a CD so that it can be accessed as a shared file system using NFS, execute

```
su
share -o ro mount-point
```


where *mount-point* is the full pathname of the directory where the CD is mounted. The directory */cdrom1* is the standard mount point for a CD. After a CD has been shared and mounted, a remote system can access the CD by mounting it as an NFS file system. For example, on another UnixWare system the appropriate commands are

```
su
mkdir /cdrom1
mount -F nfs server:/cdrom1 /cdrom1
```

where *server* is the node name of the UnixWare system with the directly-connected CD-ROM device.

Tunable Parameters

You will probably need to reconfigure the UnixWare kernel before running the BEA TUXEDO system because the default values of some IPC parameters are too low. For instructions about reconfiguring, rebuilding, and rebooting UnixWare, see *UnixWare System Performance Administration* and the *idtune(1)* and *idbuild(1)* entries in a UNIX system reference manual. You may need to increase the following parameters.

UnixWare Name	Traditional Name	Defaults
shmmax	SHMMAX	524288
shmseg	SHMSEG	6
shmmni	SHMMNI	100
semmns	SEMMNS	60
semmni	SEMMNI	10
semmsl	SEMMSL	25
semmap	SEMMAP	10
semmnu	SEMMNU	30
semume	SEMUME	10
msgmni	MSGMNI	50
msgmap	MSGMAP	100

UnixWare Name	Traditional Name	Defaults
msgmax	MSGMAX	2048
msgmnb	MSGMNB	4096
msgssz	MSGSSZ	8
msgtql	MSGTQL	40
msgseg	MSGSEG	1024
nproc	NPROC	200
maxup	MAXUP	60

To change the value of a tunable parameter, complete the following procedure.

1. Acquire superuser privileges.

```
su root
```

2. Determine (by running the `idtune` command) the current default value of the tunable parameter to be changed.

```
/etc/conf/bin/idtune -g param
```

The output of `idtune` lists current, default, minimum, and maximum valid values.

3. Change the parameter's value:

```
/etc/conf/bin/idtune param new-value
```

4. If `idtune` fails because *new-value* exceeds the maximum allowed value, you must increase the maximum. (The maximum values of some parameters are set unnecessarily low in some releases of UnixWare.) To do this, edit `/etc/conf/mtune.d/type`, where *type* is `shm`, `sem`, or `msg`. Change the maximum value (in the last column) to the desired maximum.

5. Rebuild the operating system and reboot:

```
/etc/conf/bin/idbuild -B  
cd /  
shutdown -y -g0 -i6
```

6. Execute `idtune` again and supply the desired *new-value*.

7. Run `idbuild` to build a new kernel.

```
/etc/conf/bin/idbuild -B  
cd /  
shutdown -y -g0 -i6
```

8. Reboot your system.

SCO - UnixWare v2.1

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Intel 80486 processor or later
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ UnixWare Release 2.1
- ◆ ANSI C Compiler (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL version 4.0 (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	44200 blocks
BEA TUXEDO Workstation only	11100 blocks
WEB GUI Doc only	8800 blocks

Platform-Specific Notes

To mount a CD, execute the following from the command line:

```
su
mkdir /cdrom1
mount -F cdfs -r -o nmconv=m cd-device /cdrom1
```

To determine what to specify for *cd-device*, execute

```
devattr cdrom1 bdevice
```

You can also mount a CD from the Desktop environment. From the UnixWare Desktop window, open the Disks-etc Folder Window by double-clicking on the Disks-etc icon. Then, from the Disks-etc window double-click on the *cdrom1* icon, which mounts the CD and displays its contents in the */cdrom1* Folder Window. When you close the */cdrom1* Folder Window, the CD is automatically unmounted.

UnixWare 2.1 typically defines */var/tmp* as an in-memory file system. Because */var/tmp* is used by the install script to unspool packages from the CD you should set (and export) *TMPDIR* to point to a directory with enough free space to accommodate the unspooling.

To share (export) a CD so that it can be accessed as a shared file system using NFS, execute

```
su
share -o ro mount-point
```

where *mount-point* is the full pathname of the directory where the CD is mounted. The directory `/cdrom1` is the standard mount point for a CD. After a CD has been shared and mounted, a remote system can access the CD by mounting it as a NFS file system. For example, on another UnixWare system the appropriate commands are

```
su
mkdir /cdrom1
mount -F nfs server:/cdrom1 /cdrom1
```

where *server* is the node name of the UnixWare system with the directly-connected CD-ROM device.

Tunable Parameters

You will probably need to reconfigure the UnixWare kernel before running BEA TUXEDO because the default values of some IPC parameters are too low. For instructions about reconfiguring, rebuilding, and rebooting UnixWare, see UnixWare System Performance Administration and the `idtune(1)` and `idbuild(1)` reference pages. You may need to increase the following parameters.

UnixWare Name	Traditional Name	Defaults
<code>shmmax</code>	SHMMAX	524288
<code>shmseg</code>	SHMSEG	6
<code>shmmni</code>	SHMMNI	100
<code>semnms</code>	SEMMNS	60
<code>semnmi</code>	SEMMNI	10
<code>semmsl</code>	SEMMSL	25
<code>semmap</code>	SEMMAP	10
<code>semnmu</code>	SEMMNU	30
<code>semume</code>	SEMUME	10
<code>msgmni</code>	MSGMNI	50
<code>msgmap</code>	MSGMAP	100

UnixWare Name	Traditional Name	Defaults
msgmax	MSGMAX	2048
msgmnb	MSGMNB	4096
msgssz	MSGSSZ	8
msgtql	MSGTQL	40
msgseg	MSGSEG	1024
nproc	NPROC	200
maxup	MAXUP	60

Briefly, the procedure for changing the value of a tunable parameter is as follows:

1. After acquiring superuser privileges, determine the current value of the tunable parameter to be changed. The output lists current, default, minimum, and maximum valid values.

```
su root
/etc/conf/bin/iddtune -g param
```

2. Change the parameter's value:

```
/etc/conf/bin/iddtune param new-value
```

If `iddtune` fails because `new-value` exceeds the maximum allowed value, you must increase the maximum. (The maximum values of some parameters are set unnecessarily low in some releases of UnixWare.) To do this, edit `/etc/conf/mtune.d/type`, where `type` is `shm`, `sem`, or `msg`. Change the maximum value (in the last column) to the desired maximum. Then rebuild the operating system and reboot:

```
/etc/conf/bin/idbuild -B
cd /
shutdown -y -g0 -i6
```

Now execute `iddtune` again and supply the desired `new-value`.

3. Run `idbuild` to build a new kernel and then reboot.

```
/etc/conf/bin/idbuild -B
cd /
shutdown -y -g0 -i6
```

Sequent - DYNIX/ptx v4.4.2 on Sequent i386

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Sequent i386
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ Sequent DYNIX/ptx v4.4.2
- ◆ ANSI C Compiler (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

TCP/IP, using the Sockets interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	52500 blocks
BEA TUXEDO Workstation only	13250 blocks
WEB GUI Doc only	9100 blocks

Tunable Parameters

You will probably need to reconfigure the kernel before running the BEA TUXEDO system because the default values of some kernel parameters are too low. For instructions on reconfiguring, rebuilding, and rebooting, see Chapters 1 and 3 in the *DYNIX/ptx System Configuration and Performance Guide*. You may need to increase the following parameters.

Sequent Name	Traditional Name	Defaults
SHMMAX	SHMMAX	8388608
SHMSEG	SHMSEG	3500
SHMMNI	SHMMNI	100
SEMMNS	SEMMNS	60
SEMMNI	SEMMNI	10
SEMMSL	SEMMSL	25
SEMMAP	SEMMAP	10
SEMMNU	SEMMNU	30
SEMUME	SEMUME	10
MSGMNI	MSGMNI	50

Sequent Name	Traditional Name	Defaults
MSGMAP	MSGMAP	100
MSGMNB	MSGMNB	8192
MSGSSZ	MSGSEG	16384
MSGTQL	MSGTQL	8
MSGSEG	MSGSEG	40
MAXUSERS	MAXUSERS	1024
PROC_MULT	MAXUSERS	64
NPROC	NPROC	T:8, P:16, C:5 (See Note)
FILE_DIV	N/A	20+PROC_MULT*MAXUSERS
FILE_MULT	N/A	T:5, P:5, C:1 (See Note)
NFILE	NFILES	T:8, P:8, C:2 (See Note)
MAXUP	MAXUPRC	FILE_MULT*(NPROC+16+MAXUSERS) /FILE_DIV+320

Note: Letters in the preceding table represent the following environments:

- ◆ T = default in a TIMESHARE environment
- ◆ P = default in a PARALLEL environment
- ◆ C = default in a COMMERCIAL environment

Sequent - DYNIX/ptx v4.2 on Sequent i386

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Sequent i386
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ Sequent DYNIX/ptx v4.2.0
- ◆ ANSI C Compiler (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL version 4.0 (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

TCP/IP, using the Sockets interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	51800 blocks
BEA TUXEDO Workstation only	13000 blocks
WEB GUI Doc only	9100 blocks

Tunable Parameters

You will probably need to reconfigure the kernel before running BEA TUXEDO because the default values of some kernel parameters are too low. For instructions on reconfiguring, rebuilding, and rebooting, see Chapters 1 and 3 in the *DYNIX/ptx System Configuration and Performance Guide*. You may need to increase the following parameters.

Sequent Name	Traditional Name	Defaults
SHMMAX	SHMMAX	8388608
SHMSEG	SHMSEG	3500
SHMMNI	SHMMNI	100
SEMMNS	SEMMNS	60
SEMMNI	SEMMNI	10
SEMMSL	SEMMSL	25
SEMMAP	SEMMAP	10
SEMMNU	SEMMNU	30
SEMUME	SEMUME	10
MSGMNI	MSGMNI	50

Sequent Name	Traditional Name	Defaults
MSGMAP	MSGMAP	100
MSGMNB	MSGMNB	8192
MSGSSZ	MSGSEG	16384
MSGTQL	MSGTQL	8
MSGSEG	MSGSEG	40
MAXUSERS	MAXUSERS	1024
PROC_MULT	MAXUSERS	64
NPROC	NPROC	T:8, P:16, C:5 (See Note)
FILE_DIV	N/A	20+PROC_MULT*MAXUSERS
FILE_MULT	N/A	T:5, P:5, C:1 (See Note)
NFILE	NFILES	T:8, P:8, C:2 (See Note)
MAXUP	MAXUPRC	FILE_MULT*(NPROC+16+MAXUSERS)/FILE_DIV+320

Note: Letters in the preceding table represent the following environments:

- ◆ T = default in a TIMESHARE environment
- ◆ P = default in a PARALLEL environment
- ◆ C = default in a COMMERCIAL environment

SGI - IRIX v6.5 on Silicon Graphics IP27

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ SGI IP27
- ◆ 32 MB of RAM
- ◆ 1 additional MB RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ SGI IRIX 6.5
- ◆ MIPSpro Compiler v7.2.1
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	64700 blocks
BEA TUXEDO Workstation only	16700 blocks
WEB GUI Doc only	9300 blocks

Tunable Parameters

You will probably need to reconfigure the SGI kernel before running the BEA TUXEDO system because the default values of some kernel parameters are too low. Information regarding kernel configuration is provided on the `systeme (1M)` entry in a UNIX system reference manual. You may need to increase the following parameters.

SGI Name	Traditional Name	Defaults
shmmax	SHMMAX	536870912
shmseg	SHMSEG	100
shmmni	SHMMNI	100
semms	SEMMNS	60
semnmi	SEMMNI	10
semmap	SEMMA	
semnmu	SEMMNU	30
semume	SEMUME	10
msgmni	MSGMNI	50
msgmap	MSGMAP	
msgmax	MSGMAX	32768

A Platform Data Sheets

SGI Name	Traditional Name	Defaults
msgmnb	MSGMNB	32768
msgssz	MSGSSZ	8
msgtql	MSGTQL	40
msgseg	MSGSEG	1536
maxusers	MAXUSERS	
nproc	NPROC	30+KB(mem)/240
maxuprc	MAXUPRC	150
maxfiles	NFILES	

SGI - IRIX v6.4 on Silicon Graphics IP27

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ SGI IP27
- ◆ 32 MB of RAM
- ◆ 1 additional MB RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ SGI IRIX 6.4
- ◆ MIPSpro Compiler v7.1.0
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	64700 blocks
BEA TUXEDO Workstation only	16700 blocks
WEB GUI Doc only	9300 blocks

Tunable Parameters

You will probably need to reconfigure the SGI kernel before running BEA TUXEDO because the default values of some kernel parameters are too low. Information regarding kernel configuration is provided in the `systeme (1M)` manual page. You may need to increase the following parameters.

SGI Name	Traditional Name	Defaults
<code>shmmx</code>	SHMMAX	536870912
<code>shmseg</code>	SHMSEG	100
<code>shmmni</code>	SHMMNI	100
<code>semms</code>	SEMMNS	60
<code>semnmi</code>	SEMMNI	10
<code>semmap</code>	SEMMA	
<code>semnu</code>	SEMMNU	30
<code>semume</code>	SEMUME	10
<code>msgmni</code>	MSGMNI	50
<code>msgmap</code>	MSGMAP	
<code>msgmax</code>	MSGMAX	32768

SGI Name	Traditional Name	Defaults
msgmnb	MSGMNB	32768
msgssz	MSGSSZ	8
msgtql	MSGTQL	40
msgseg	MSGSEG	1536
maxusers	MAXUSERS	
nproc	NPROC	30+KB(mem)/240
maxuprc	MAXUPRC	150
maxfiles	NFILES	(See Note)

SGI - IRIX v6.2 on Silicon Graphics IP22

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ SGI IP22
- ◆ 32 MB of RAM
- ◆ 1 additional MB RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ SGI IRIX 6.2
- ◆ C Compiler v4.2.0 (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Version 4.1 (BEA TUXEDO Development Environment only).

Note: If `buildclient` and `buildserver` produces the following message:

```
FAILED - can't find /usr/lib/abi/crt1.o
```

You will need to modify the installed COBOL `liblist` file in

```
$COBDIR/coblib
```

 by changing all `/usr/lib/abi` references to `/usr/lib`.

You must also invoke `buildclient` or `buildserver` with `-f "-L/us/lib"`.

- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	64700 blocks
BEA TUXEDO Workstation only	16700 blocks
WEB GUI Doc only	9300 blocks

Tunable Parameters

You will probably need to reconfigure the SGI kernel before running BEA TUXEDO because the default values of some kernel parameters are too low. Information regarding kernel configuration is provided in the `systeme (1M)` reference page. You may need to increase the following parameters.

SGI Name	Traditional Name	Defaults
<code>shmmax</code>	<code>SHMMAX</code>	536870912
<code>shmseg</code>	<code>SHMSEG</code>	100
<code>shmmni</code>	<code>SHMMNI</code>	100
<code>semms</code>	<code>SEMMNS</code>	60
<code>semnmi</code>	<code>SEMMNI</code>	10
<code>semmap</code>	<code>SEMMA</code>	
<code>semnmu</code>	<code>SEMMNU</code>	30

A Platform Data Sheets

SGI Name	Traditional Name	Defaults
semume	SEMUME	10
msgmni	MSGMNI	50
msgmap	MSGMAP	
msgmax	MSGMAX	32768
msgmnb	MSGMNB	32768
msgssz	MSGSSZ	8
msgtql	MSGTQL	40
msgseg	MSGSEG	1536
maxusers	MAXUSERS	
nproc	NPROC	30+KB(mem)/240
maxuprc	MAXUPRC	150
maxfiles	NFILES	

Siemens Pyramid - SNI Reliant UNIX v5.4.4b

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Siemens-Nixdorf RM400 System
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ SNI SINIX-N, Release 5.4.4b
- ◆ ANSI C Compiler (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Version 4.0 (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	62000 blocks
BEA TUXEDO Workstation only	16200 blocks
WEB GUI Doc only	9000 blocks

Platform-Specific Notes

Before a CD can be used, the “Sicdrom” software package must be installed. This is usually installed with the operating system. However, if a minimum or selective configuration was installed, this software may need to be added.

To mount a CD, enter the following commands:

```
su mount -F hs -o dos /dev/ios0/cd-device /cd_rom
```

where *cd_device* is the appropriate device, and *cd_rom* is a mount point that was created previously.

Tunable Parameters

See the instructions for UnixWare.

Siemens Pyramid - SNI Reliant UNIX v5.4.3c

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Siemens-Nixdorf RM400 System
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ SNI SINIX-N, Release 5.4.3c
- ◆ ANSI C Compiler (TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Version 4.0 (TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	62000 blocks
BEA TUXEDO Workstation only	16200 blocks
WEB GUI Doc only	9000 blocks

Platform-Specific Notes

Before a CD-ROM can be operated, the “Sicdrom” software package must be installed. This is usually installed with the operating system. However, if a minimum or selective configuration was installed, this software may need to be added.

To mount a CD-ROM, enter the following commands:

```
su mount -F hs -o dos /dev/ios0/cd-device /cd_rom
```

where *cd_device* is the appropriate device, and *cd_rom* is a mount point that was created previously.

Tunable Parameters

See the instructions for UnixWare.

Siemens Pyramid - SNI Reliant UNIX v5.4.3b

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Siemens-Nixdorf RM400 System
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ SNI SINIX-N, Release 5.4.3b
- ◆ ANSI C Compiler (TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Version 4.0 (TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	64800 blocks
BEA TUXEDO Workstation only	16900 blocks
WEB GUI Doc only	9200 blocks

Platform-Specific Notes

Before a CD-ROM can be operated, the “Sicdrom” software package must be installed. This is usually installed with the operating system. However, if a minimum or selective configuration was installed, this software may need to be added.

To mount a CD-ROM, enter the following commands:

```
su mount -F hs -o dos /dev/ios0/cd_device /cd_rom
```

where *cd_device* is the appropriate device, and *cd_rom* is a mount point that was created previously.

Tunable Parameters

See the instructions for UnixWare.

Slackware Linux 2.0.34

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO System Workstation (no COBOL support)

Hardware Requirements

- ◆ Intel 80486 processor or later
- ◆ 16 MB of RAM

Software Requirements

- ◆ Slackware Linux Release 2.0.34
- ◆ ANSI C Compiler (BEA TUXEDO Development Environment only)

Network

- ◆ TCP/IP, using Sockets network interface

Disk Space Requirements

Package	Blocks Required
Workstation	10000 blocks

Platform-Specific Notes

To mount a CD, execute the following from the command line:

```
su
mkdir /cdrom1
mount -t iso9660 -r /dev/cd_device /cdrom1
```

To determine the value of *cd_device*, execute:

```
dmesg | grep -i cd
```

Linux displays:

```
cd_device device_description
```

The value of *device_description* may contain more than one field. For example, in the following output, the value of device description contains three fields:

```
hd20 Sony CDU-55 ATAPI
```

where

- ◆ *hd20* is the value of *cd_device*.
- ◆ *Sony CDU-55 ATAPI* is the value of *device_description*.

SunOS - 5.7 Solaris v2.7 on Intel

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Intel 80386 processor or later
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ SunOS 5.7 (Solaris 2.7)
- ◆ WorkShop Compiler 4.2 (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Version 3.1 (BEA TUXEDO Development Environment only)

Note: Microfocus COBOL Version 3.1 assumes an older version of the C compilation system. To use v3.1 with BEA TUXEDO you need to modify the `liblist` in `$COBDIR/coblib` to refer to the newer C compiler. For example, change the `/opt/SUNWspro/SC2.0.1/crt1.o` reference to `/opt/SUNWspro/SC4.2/crt1.o`.

- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	40600 blocks
BEA TUXEDO Workstation only	10400 blocks
WEB GUI Doc only	9100 blocks

Tunable Parameters

You will probably need to reconfigure the kernel before running the BEA TUXEDO system because the defaults of some kernel parameters are too low. Information regarding kernel configuration is provided in the `sysctl(1M)` entry in a UNIX system reference manual. You may need to increase the following parameters.

SunOS Name	Traditional Name	Defaults
shmsys:shminfo_shmmax	SHMMAX	131072
shmsys:shminfo_shmseg	SHMSEG	6
shmsys:shminfo_shmmni	SHMMNI	100
semsys:seminfo_semmns	SEMMNS	60
semsys:seminfo_semmni	SEMMNI	10
semsys:seminfo_semmsl	SEMMSL	25
semsys:seminfo_semmap	SEMMAP	10

SunOS Name	Traditional Name	Defaults
semsys:seminfo_semmnu	SEMMNU	30
semsys:seminfo_semume	SEMUME	10
msgsys:msginfo_msgmni	MSGMNI	50
msgsys:msginfo_msgmap	MSGMAP	100
msgsys:msginfo_msgmax	MSGMAX	2048
msgsys:msginfo_msgmnb	MSGMNB	4096
msgsys:msginfo_msgssz	MSGSSZ	8
msgsys:msginfo_msgtql	MSGTQL	40
msgsys:msginfo_msgseg	MSGSEG	1024
maxusers	maxusers	32
max_nprocs	NPROC	10+16*maxusers
maxuprc	MAXUP	max_nprocs-5

Platform-Specific Notes

The Volume Management software automatically mounts CDs on /cdrom/cdrom0/s0.

SunOS - 5.7 Solaris v2.7 on UltraSPARC

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ UltraSparc uniprocessor
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ SunOS 5.7 (Solaris 2.7)
- ◆ SparCompiler C 4.0 (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Version 4.1 with 13.03a update from MicroFocus (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	61300 blocks
BEA TUXEDO Workstation only	15100 blocks
WEB GUI Doc only	9100 blocks

Tunable Parameters

You will probably need to reconfigure the kernel before running the BEA TUXEDO system because the default values of some kernel parameters are too low. Information regarding kernel configuration is provided in the `systeme (1M)` entry in a UNIX system reference manual. You may need to increase the following parameters.

SunOS Name	Traditional Name	Defaults
<code>shmsys:shminfo_shmmax</code>	SHMMAX	131072
<code>shmsys:shminfo_shmseg</code>	SHMSEG	6
<code>shmsys:shminfo_shmmni</code>	SHMMNI	100
<code>semsys:seminfo_semmns</code>	SEMMNS	60
<code>semsys:seminfo_semmni</code>	SEMMNI	10
<code>semsys:seminfo_semmsl</code>	SEMMSL	25
<code>semsys:seminfo_semmap</code>	SEMMAP	10
<code>semsys:seminfo_semmnu</code>	SEMMNU	30
<code>semsys:seminfo_semume</code>	SEMUME	10
<code>msgsys:msginfo_msgmni</code>	MSGMNI	50

SunOS Name	Traditional Name	Defaults
<code>msgsys:msginfo_msgmap</code>	MSGMAP	100
<code>msgsys:msginfo_msgmax</code>	MSGMAX	2048
<code>msgsys:msginfo_msgmnb</code>	MSGMNB	4096
<code>msgsys:msginfo_msgssz</code>	MSGSSZ	8
<code>msgsys:msginfo_msgtql</code>	MSGTQL	40
<code>msgsys:msginfo_msgseg</code>	MSGSEG	1024
<code>maxusers</code>	<code>maxusers</code>	32
<code>max_nprocs</code>	NPROC	$10+16*\text{maxusers}$
<code>maxuprc</code>	MAXUP	<code>max_nprocs-5</code>

Platform-Specific Notes

The Volume Management software automatically mounts CDs on `/cdrom/cdrom0/s0`.

SunOS - 5.6 Solaris v2.6 on Intel

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Intel 80386 processor or later
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ SunOS 5.6 (Solaris 2.6)
- ◆ WorkShop Compiler 4.2 (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Version 3.1 (BEA TUXEDO Development Environment only)

Note: Microfocus COBOL Version 3.1 assumes an older version of the C compilation system. To use v3.1 with BEA TUXEDO you need to modify the `liblist` in `$COBDIR/coblib` to refer to the newer C compiler.. For example, change the `/opt/SUNWspro/SC2.0.1/crt1.o` reference to `/opt/SUNWspro/SC4.2/crt1.o`.

- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	40600 blocks
BEA TUXEDO Workstation only	10400 blocks
WEB GUI Doc only	9100 blocks

Tunable Parameters

You will probably need to reconfigure the kernel before running BEA TUXEDO because the defaults of some kernel parameters are too low. Information regarding kernel configuration is provided in the `systeme(1M)` manual page. You may need to increase the following parameters.

SunOS Name	Traditional Name	Defaults
shmsys:shminfo_shmmax	SHMMAX	131072
shmsys:shminfo_shmseg	SHMSEG	6
shmsys:shminfo_shmmni	SHMMNI	100
semsys:seminfo_semmns	SEMMNS	60
semsys:seminfo_semmni	SEMMNI	10
semsys:seminfo_semmsl	SEMMSL	25
semsys:seminfo_semmap	SEMMAP	10

SunOS Name	Traditional Name	Defaults
semsys:seminfo_semmnu	SEMMNU	30
semsys:seminfo_semume	SEMUME	10
msgsys:msginfo_msgmni	MSGMNI	50
msgsys:msginfo_msgmap	MSGMAP	100
msgsys:msginfo_msgmax	MSGMAX	2048
msgsys:msginfo_msgmnb	MSGMNB	4096
msgsys:msginfo_msgssz	MSGSSZ	8
msgsys:msginfo_msgtql	MSGTQL	40
msgsys:msginfo_msgseg	MSGSEG	1024
maxusers	maxusers	32
max_nprocs	NPROC	10+16*maxusers
maxuprc	MAXUP	max_nprocs-5

Platform-Specific Notes

The Volume Management software automatically mounts CDs on /cdrom/cdrom0/s0.

SunOS - 5.6 Solaris v2.6 on UltraSPARC

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ UltraSparc uniprocessor
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ SunOS 5.6 (Solaris 2.6)
- ◆ SparCompiler C 4.0 (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Version 4.1 with 13.03a update from MicroFocus (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	61300 blocks
BEA TUXEDO Workstation only	15100 blocks
WEB GUI Doc only	9100 blocks

Tunable Parameters

You will probably need to reconfigure the kernel before running BEA TUXEDO because the default values of some kernel parameters are too low. Information regarding kernel configuration is provided in the *systeme (1M)* reference page. You may need to increase the following parameters.

SunOS Name	Traditional Name	Defaults
shmsys:shminfo_shmmax	SHMMAX	131072
shmsys:shminfo_shmseg	SHMSEG	6
shmsys:shminfo_shmmni	SHMMNI	100
semsys:seminfo_semmns	SEMMNS	60
semsys:seminfo_semmni	SEMMNI	10
semsys:seminfo_semmsl	SEMMSL	25
semsys:seminfo_semmap	SEMMAP	10
semsys:seminfo_semmnu	SEMMNU	30
semsys:seminfo_semume	SEMUME	10
msgsys:msginfo_msgmni	MSGMNI	50

SunOS Name	Traditional Name	Defaults
<code>msgsys:msginfo_msgmap</code>	MSGMAP	100
<code>msgsys:msginfo_msgmax</code>	MSGMAX	2048
<code>msgsys:msginfo_msgmnb</code>	MSGMNB	4096
<code>msgsys:msginfo_msgssz</code>	MSGSSZ	8
<code>msgsys:msginfo_msgtql</code>	MSGTQL	40
<code>msgsys:msginfo_msgseg</code>	MSGSEG	1024
<code>maxusers</code>	<code>maxusers</code>	32
<code>max_nprocs</code>	NPROC	$10+16*\text{maxusers}$
<code>maxuprc</code>	MAXUP	<code>max_nprocs-5</code>

Platform-Specific Notes

The Volume Management software automatically mounts CDs on `/cdrom/cdrom0/s0`.

SunOS - 5.5.1 Solaris v2.5.1 on Intel

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Intel 80386 processor or later
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ SunOS 5.5.1 (Solaris 2.5.1)
- ◆ SparCompiler C 3.0.1 (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL version 3.1 (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	40600 blocks
BEA TUXEDO Workstation only	10400 blocks
WEB GUI Doc only	9100 blocks

Tunable Parameters

You will probably need to reconfigure the kernel before running BEA TUXEDO because the defaults of some kernel parameters are too low. Information regarding kernel configuration is provided in the `systeme(1M)` reference page. You may need to increase the following parameters.

SunOS Name	Traditional Name	Defaults
shmsys:shminfo_shmmax	SHMMAX	131072
shmsys:shminfo_shmseg	SHMSEG	6
shmsys:shminfo_shmmni	SHMMNI	100
semsys:seminfo_semmns	SEMMNS	60
semsys:seminfo_semmni	SEMMNI	10
semsys:seminfo_semmsl	SEMMSL	25
semsys:seminfo_semmmap	SEMMAP	10
semsys:seminfo_semmnu	SEMMNU	30
semsys:seminfo_semume	SEMUME	10
msgsys:msginfo_msgmni	MSGMNI	50

SunOS Name	Traditional Name	Defaults
msgsys:msginfo_msgmap	MSGMAP	100
msgsys:msginfo_msgmax	MSGMAX	2048
msgsys:msginfo_msgmnb	MSGMNB	4096
msgsys:msginfo_msgssz	MSGSSZ	8
msgsys:msginfo_msgtql	MSGTQL	40
msgsys:msginfo_msgseg	MSGSEG	1024
maxusers	maxusers	32
max_nprocs	NPROC	10+16*maxusers
maxuprc	MAXUP	max_nprocs-5

Platform-Specific Notes

The Volume Management software automatically mounts CDs on /cdrom/cdrom0/s0.

SunOS - 5.5.1 on Solaris v2.51 UltraSPARC

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ UltraSparc uniprocessor
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ SunOS 5.5.1 (Solaris 2.5.1)
- ◆ SparCompiler C 4.0 (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Version 4.1 (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	61300 blocks
BEA TUXEDO Workstation only	15100 blocks
WEB GUI Doc only	9100 blocks

Tunable Parameters

You will probably need to reconfigure the kernel before running BEA TUXEDO because the defaults of some kernel parameters are too low. Information regarding kernel configuration is provided in the `sysctl(1M)` reference page. You may need to increase the following parameters.

SunOS Name	Traditional Name	Defaults
<code>shmsys:shminfo_shmmax</code>	SHMMAX	131072
<code>shmsys:shminfo_shmseg</code>	SHMSEG	6
<code>shmsys:shminfo_shmmni</code>	SHMMNI	100
<code>semsys:seminfo_semmns</code>	SEMMNS	60
<code>semsys:seminfo_semmni</code>	SEMMNI	10
<code>semsys:seminfo_semmsl</code>	SEMMSL	25
<code>semsys:seminfo_semmap</code>	SEMMAP	10
<code>semsys:seminfo_semmnu</code>	SEMMNU	30
<code>semsys:seminfo_semume</code>	SEMUME	10
<code>msgsys:msginfo_msgmni</code>	MSGMNI	50

SunOS Name	Traditional Name	Defaults
msgsys:msginfo_msgmap	MSGMAP	100
msgsys:msginfo_msgmax	MSGMAX	2048
msgsys:msginfo_msgmnb	MSGMNB	4096
msgsys:msginfo_msgssz	MSGSSZ	8
msgsys:msginfo_msgtql	MSGTQL	40
msgsys:msginfo_msgseg	MSGSEG	1024
maxusers	maxusers	32
max_nprocs	NPROC	10+16*maxusers
maxuprc	MAXUP	max_nprocs-5

Platform-Specific Notes

The Volume Management software automatically mounts CDs on /cdrom/cdrom0/s0.

SunOS - 5.4 Solaris v2.4 on Intel

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Intel 80386 processor or later
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ SunOS 5.4 (Solaris 2.4)
- ◆ WorkShop Compiler 4.2 (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Version 3.1 (BEA TUXEDO Development Environment only)

Note: Microfocus COBOL Version 3.1 assumes an older version of the C compilation system. To use v3.1 with BEA TUXEDO you need to modify the `liblist` in `$COBDIR/coblib` to refer to the newer C compiler.. For example, change the `/opt/SUNWspro/SC2.0.1/crt1.o` reference to `/opt/SUNWspro/SC4.2/crt1.o`

- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	54000 blocks
BEA TUXEDO Workstation only	13200 blocks
WEB GUI Doc only	9100 blocks

Tunable Parameters

You will probably need to reconfigure the kernel before running BEA TUXEDO because the defaults of some kernel parameters are too low. Information regarding kernel configuration is provided in the systune(1M) manual page. You may need to increase the following parameters.

SunOS Name	Traditional Name	Defaults
shmsys:shminfo_shmmax	SHMMAX	131072
shmsys:shminfo_shmseg	SHMSEG	6
shmsys:shminfo_shmmni	SHMMNI	100
semsys:seminfo_semmns	SEMMNS	60
semsys:seminfo_semmni	SEMMNI	10
semsys:seminfo_semmsl	SEMMSL	25
semsys:seminfo_semmap	SEMMAP	10

SunOS Name	Traditional Name	Defaults
semsys:seminfo_semmnu	SEMMNU	30
semsys:seminfo_semume	SEMUME	10
msgsys:msginfo_msgmni	MSGMNI	50
msgsys:msginfo_msgmap	MSGMAP	100
msgsys:msginfo_msgmax	MSGMAX	2048
msgsys:msginfo_msgmnb	MSGMNB	4096
msgsys:msginfo_msgssz	MSGSSZ	8
msgsys:msginfo_msgtql	MSGTQL	40
msgsys:msginfo_msgseg	MSGSEG	1024
maxusers	maxusers	32
max_nprocs	NPROC	10+16*maxusers
maxuprc	MAXUP	max_nprocs-5

Platform-Specific Notes

The Volume Management software automatically mounts CDs on `/cdrom/cdrom0/s0`.

Tandem Non-Stop UX C41 on Integrity S4000 Series

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Tandem Integrity S4000 Series System
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ Tandem NonStop-UX Release C41
- ◆ ANSI C Compiler version 3.18 (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	62200 blocks
BEA TUXEDO Workstation only	16200 blocks
WEB GUI Doc only	9100 blocks

Platform-Specific Notes

To mount a CD, execute the following from the command line:

```
su
mkdir /cdrom1
mount -F cdfs -o ro /dev/cdrom/CD_ROM_device /cdrom1
```

where *CD_ROM_device* is the appropriate device.

Tunable Parameters

You will probably need to reconfigure the kernel before running the BEA TUXEDO system because the default values of some IPC parameters are too low. For instructions about reconfiguring, rebuilding, and rebooting NonStop-UX, see the Integrity 54000 Online Documentation, specifically, chapter 8, “Managing Tunable Parameters,” in the *Administrator's Guide: Machine Management*. (This book may be accessed from the NonStop-UX Administrator's and User's Guide collection.) You may need to increase the following parameters.

Tandem Name	Traditional Name	Defaults
shmmax	SHMMAX	524288
shmseg	SHMSEG	6

Tandem Name	Traditional Name	Defaults
shmmni	SHMMNI	100
semnns	SEMMNS	60
semnmi	SEMMNI	10
semmsl	SEMMSL	25
semmap	SEMMAP	10
semnmu	SEMMNU	30
semume	SEMUME	10
msgmni	MSGMNI	50
msgmap	MSGMAP	100
msgmax	MSGMAX	2048
msgmnb	MSGMNB	4096
msgssz	MSGSSZ	8
msgtql	MSGTQL	40
msgseg	MSGSEG	1024
nproc	NPROC	200
maxup	MAXUP	60

To change the value of a tunable parameter, complete the following procedure.

1. Acquire superuser privileges.

```
su root
```

2. Determine (by running the `idtune` command) the current default value of the tunable parameter to be changed.

```
/etc/conf/bin/idtune -g param
```

The output of `idtune` lists current, default, minimum, and maximum valid values.

3. Change the parameter's value:

```
/etc/conf/bin/iddtune param new-value
```

4. If `iddtune` fails because *new-value* exceeds the maximum allowed value, you must increase the maximum. (The maximum values of some parameters are set unnecessarily low in some releases of UnixWare.) To do this, edit `/etc/conf/mtune.d/type`, where *type* is `shm`, `sem`, or `msg`. Change the maximum value (in the last column) to the desired maximum.

5. Rebuild the operating system and reboot:

```
/etc/conf/bin/iddbuild -B  
cd /  
shutdown -y -g0 -i6
```

6. Execute `iddtune` again and supply the desired *new-value*.

7. Run `iddbuild` to build a new kernel.

```
/etc/conf/bin/iddbuild -B  
cd /  
shutdown -y -g0 -i6
```

8. Reboot your system.

Tandem Non-Stop UX C21 on Integrity S4000 Series

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Tandem Integrity 54000 Series System
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ Tandem NonStop-UX Release C21
- ◆ ANSI C Compiler version 3.18 (TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	62200 blocks
BEA TUXEDO Workstation only	16200 blocks
WEB GUI Doc only	9100 blocks

Platform-Specific Notes

To mount a CD, execute the following from the command line:

```
su
mkdir /cdrom1
mount -F cdfs -o ro /dev/cdrom/CD_ROM_device /cdrom1
```

where *CD_ROM_device* is the appropriate device.

Tunable Parameters

You will probably need to reconfigure the kernel before running TUXEDO because the default values of some IPC parameters are too low. For instructions about reconfiguring, rebuilding, and rebooting NonStop-UX, see the Integrity 54000 OnlineDocumentation, specifically, chapter 8, “Managing Tunable Parameters,” in the *Administrator's Guide: Machine Management*. (This book may be accessed from the NonStop-UX Administrator's and User's Guide collection.) You may need to increase the following parameters.

Tandem Name	Traditional Name	Defaults
shmmax	SHMMAX	524288
shmseg	SHMSEG	6

Tandem Name	Traditional Name	Defaults
shmmni	SHMMNI	100
semnns	SEMMNS	60
semnmi	SEMMNI	10
semmsl	SEMMSL	25
semmap	SEMMAP	10
semnmu	SEMMNU	30
semume	SEMUME	10
msgmni	MSGMNI	50
msgmap	MSGMAP	100
msgmax	MSGMAX	2048
msgmnb	MSGMNB	4096
msgssz	MSGSSZ	8
msgtql	MSGTQL	40
msgseg	MSGSEG	1024
nproc	NPROC	200
maxup	MAXUP	60

Briefly, the procedure for changing the value of a tunable parameter is as follows:

1. After acquiring superuser privileges, determine the current value of the tunable parameter to be changed. The output lists current, default, minimum, and maximum valid values.

```
su root
/etc/conf/bin/idtune -g param
```

2. Change the parameter's value.

```
/etc/conf/bin/idtune param new-value
```

3. Run `idbuild` to build a new kernel; then reboot.

```
/etc/conf/bin/idbuild -B  
cd /  
shutdown -y -g0 -i6
```

UNISYS SVR4 on Intel

Available BEA TUXEDO v6.5 Packages

- ◆ BEA TUXEDO Core System
- ◆ BEA TUXEDO Online Documentation
- ◆ BEA TUXEDO System Workstation

Hardware Requirements

- ◆ Unisys I486-EISA
- ◆ 16 MB of RAM
- ◆ 1 additional MB of RAM for each BEA TUXEDO application, plus 0.5 - 1 MB per application server

Software Requirements

- ◆ Unisys SVR4
- ◆ ANSI C Compiler (BEA TUXEDO Development Environment only)
- ◆ MicroFocus COBOL Version 4.0 (BEA TUXEDO Development Environment only)
- ◆ For the BEA TUXEDO Web GUI: a Java-capable Web browser

Network

- ◆ TCP/IP, using the TLI network interface

Disk Space Requirements

Package	Blocks Required
BEA TUXEDO software (client and server)	43300 blocks
BEA TUXEDO Workstation only	10500 blocks
WEB GUI Doc only	9000 blocks

Platform-Specific Notes

To mount a CD, execute the following from the command line:

```
su
mkdir /cdrom1
mount -F cdfs cd-device /cdrom1
```

where *cd-device* is the name of the CD-ROM device file, such as `/dev/cdrom/d0`.

Tunable Parameters

See the instructions for SCO UnixWare v2.1.

