



# Hardware and Software Requirements

## Overview

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This appendix covers the hardware and software requirements and recommendations for each of the ETI•EXTRACT MetaStore Server configurations. Where possible, ETI has provided recommendations on how to configure the systems, third-party software, network access, and security to get the best performance and reliability from the ETI•EXTRACT product. The following topics are covered:

- ETI•EXTRACT UNIX configurations (Solaris, AIX, and HP-UX)
- Tested X Window System Servers
- UNIX Shell Windows
- Running Multiple Applications on the MetaStore Server
- Setting Up the Versant Service
- Setting Up User Accounts and Groups
- Required Setup for UNIX MetaStore Servers with ETI•EXTRACT Clients
- UNIX File System Access for Windows Clients (Samba and NFS Maestro)

## ETI•EXTRACT 4.2 UNIX Servers (Solaris, AIX, HP-UX)

### Hardware and Software Requirements for Solaris

First, ensure that your workstation meets the requirements outlined in the following table. The specifications shown in Table A-1 are recommended minimums for workstations. Before you purchase any hardware for use with ETI•EXTRACT, ETI suggests that you and your hardware vendor’s sales representative contact your ETI Account Representative for information about additional supported configurations.

Table A-1. Hardware Requirements for ETI•EXTRACT Release 4.2—Solaris

Hardware/Software	Minimum Requirement
Model	UltraSPARC-I (minimum).
CPU Clock Speed	167 MHz minimum (Host-centric: two CPUs preferred).
Operating System	Solaris 2.6, Solaris 2.7, or Solaris 2.8 Configuration Cluster: Developer System Support or Entire Distribution.
Windowing System	OpenWindows or CDE.
RAM	Host-centric: 256 MB for every three users up to 2 gigabytes. UNIX Server: 256 to 512 MB.
Disk Drives	Minimum of two locally-attached disks.
Disk Space	2 gigabytes free space on one disk, minimum. <sup>a</sup> 6 gigabytes recommended. More may be needed.
Swap Space	3 times the amount of physical memory.
Monitor	800x600 minimum resolution, color (recommended) or monochrome (15" minimum, 17" or larger strongly recommended).
Tape Drive	4mm or 8mm (recommended, for backups).
CD-ROM Drive	Required for installation. Locally attached to the computer on which you want to install ETI•EXTRACT <b>or</b> can be mounted on that computer using NFS.
Remote Access	If a customer intends to use remote access other than to export objects from remote worksets for transfer to a local machine for use with ETI•EXTRACT, ETI will provide guidelines and recommend configurations based on the customer’s specific needs. Customers should contact their ETI Account Representative to discuss their remote access needs. ETI does not support a Wide Area Network (WAN) configuration.
Software	UNIX Server: File system access software which allows Windows systems access to UNIX file system. Verified software includes: Samba and Hummingbird Communications NFS Maestro.
FLEXIm License Manager	Version 6.1 or higher.

<sup>a</sup> Installing ETI•EXTRACT software on a Sun system requires a minimum of 315 megabytes. As you use ETI•EXTRACT to generate conversion programs and add to the ETI•EXTRACT MetaStore, you will require additional disk space. For this purpose, ETI recommends that you have at least **2 gigabytes** of free space before you begin the installation.

## Note on Solaris Configuration

The Solaris operating system consists of many individual packages that users can choose to install. During installation of the operating system, you can choose from among four progressively larger *clusters* that consist of sets of individual packages. These clusters are Core System Support, End User System Support, Developer System Support, and Entire Distribution. The minimum configuration supported by ETI•EXTRACT Release 4.2 is the Developer System Support cluster. Since the Entire Distribution configuration cluster is a superset of the Developer System Support configuration cluster, it is supported as well.

For additional information about configuration clusters, see the *Solaris System Configuration and Installation Guide* that came with your computer or operating system distribution media. You can use the command `pkginfo -i` to list all the fully installed packages on your system. See the online manual page for the **pkginfo** command for more information (use the command `man pkginfo`).

**Warning** The following files must be readable by all ETI•EXTRACT users:  
`/etc/hosts` and `/etc/services`.

## Required Solaris Patches

At the time this document was published, operating system patches were required for all supported platforms. For the most current list of required operating system patches, select the **Required Operating System Patches** option on the ETI AnswerLink™ website:

`http://www.eti.com/answerlink/index.html`

ETI cannot supply you with the patches, since they are a product of Sun Microsystems. Please contact your Sun representative directly to obtain them, if necessary. For additional information, you can also contact Sun at:

`http://sunsolve.sun.com`

To determine which patches are installed, use the following command:

`/usr/bin/showrev -p`

Or, if `/usr/bin/` is in your path, use this command:

`showrev -p`

UNIX **man** (manual) pages are available for the `showrev` command. To read them, use the command:

`man showrev`

## Kernel Parameters

Table A-2 lists the recommended values for kernel parameters for Solaris. ETI recommends that you check and update the kernel parameters before installing ETI•EXTRACT. You must reboot your system if you make any changes to your system kernel parameters.

Table A-2. Recommended Settings for System Kernel Parameters (Solaris)

System Kernel Parameter	Recommended Value	Description
msgmnb	65536	Maximum number of bytes in a message queue
msgtql	1024	Number of message headers
shmmni	1500	Maximum number of shared memory identifiers
shmseg	1500	Maximum number of shared memory segments per identifier
shmmax	1048576	Maximum shared memory segment
semmap	500	Maximum number of semaphore entries
semmni	500	Maximum number of semaphore identifiers
semmns	600	Maximum total number of semaphores
semmsl	500	Maximum number of semaphores per semaphore identifier
semume	30	Semaphore undo entries per process

## Hardware and Software Requirements for AIX

First, ensure that your workstation meets the requirements outlined in the following table. The specifications shown in Table A-3 are recommended minimums for workstations. Before you purchase any hardware for use with ETI•EXTRACT, ETI suggests that you and your hardware vendor’s sales representative contact your ETI Account Representative for information about additional supported configurations.

Table A-3. Hardware Requirements for ETI•EXTRACT Release 4.2—AIX (Part 1 of 2)

Hardware/Software	Minimum Requirement
Model	RS/6000 Model E 30 (minimum).
CPU Clock Speed	166 MHz minimum (Host-centric: two CPUs preferred).
Operating System	AIX 4.3.
Windowing System	CDE.
RAM	Host-centric: 256 MB for every three users up to 2 gigabytes. UNIX Server: 256 to 512 MB.
Disk Drives	Minimum of two locally-attached disks.

Table A-3. Hardware Requirements for ETI•EXTRACT Release 4.2—AIX (Part 2 of 2)

Hardware/Software	Minimum Requirement
Disk Space	2 gigabytes free space on one disk, minimum. <sup>a</sup> 6 gigabytes recommended. More may be needed.
Swap Space	3 times the amount of physical memory.
Monitor	800x600 minimum resolution, color (recommended) or monochrome (15" minimum, 17" or larger strongly recommended).
Tape Drive	8mm (recommended, for backups).
CD-ROM Drive	Required for installation. Locally attached to the computer on which you want to install ETI•EXTRACT <b>or</b> can be mounted on that computer using NFS.
Remote Access	If a customer intends to use remote access other than to export objects from remote worksets for transfer to a local machine for use with ETI•EXTRACT, ETI will provide guidelines and recommend configurations based on the customer's specific needs. Customers should contact their ETI Account Representative to discuss their remote access needs. ETI does not support a Wide Area Network (WAN) configuration.
Software	UNIX Server: File system access software which allows Windows systems access to UNIX file system. Verified software includes: Samba and Hummingbird Communications NFS Maestro.
FLEXlm License Manager	Version 6.1 or higher.

<sup>a</sup> Installing ETI•EXTRACT software on an RS/6000 system requires a minimum of 500 megabytes. As you use ETI•EXTRACT to generate conversion programs and add to the ETI•EXTRACT MetaStore, you will require additional disk space. For this purpose, ETI recommends that you have at least **2 gigabytes** of free space before you begin the installation.

## Required AIX Patches

At the time this document was published, operating system patches were required for all supported platforms. For the most current list of required operating system patches, select the **Required Operating System Patches** option on the ETI AnswerLink website:

<http://www.eti.com/answerlink/index.html>

ETI cannot supply you with the patches, since they are a product of IBM. Please contact your IBM representative directly to obtain them if necessary.

You can determine which patches are installed by using the System Management Interface Tool (smit). To invoke it, use the following command in an AIXWindow:

```
smit
```

Then, select the following options in sequence:

```
Software Installation and Maintenance
List Software and Related Information
List Installed Software and Related Information
Show Fix (APAR) Installation Status
```

The last command displays a window titled **Show Fix (APAR) Installation Status**. Press the **List** button on the line labeled **FIX ID** to display a list of all the system software and patches that are available. Scroll through the list and select an APAR to determine its installation status.

## Required Changes to AIX System Parameters

After installing ETI•EXTRACT, change the following parameters in the `/etc/security/limits` file to a value of “-1” (unlimited) for all ETI•EXTRACT users and ROOT:

- fsize
- core
- cpu
- data
- rss
- stack

## AIX termcap Library File

The file `libtermcap.a`, necessary for `ex_dbtool`, is not automatically installed with AIX 4.3. This file does exist on the AIX 4.3 installation media and can be added by performing an optional software installation and selecting the software **bos.compat**. The steps to install optional software are described in the *AIX Installation Guide*.

## AIX Java Runtime Software Installation

ETI•EXTRACT uses Java to perform Retrieve Schema operations for the following DSLs and Starter Kits:

- COBOL/FS
- COBOL/IMS
- COBOL/IDMS
- SAP/DI

If you use AIX to retrieve schemas for any of these DSLs, you need to install the Java Runtime Software.

The Java environment for AIX ships with the AIX Operating System. IBM frequently supplies Java Runtime Software on an AIX Bonus Pack CD or on one of the AIX installation CDs. Install it from the source supplied.

It is *required* that the AIX Java runtime software is installed prior to the ETI•EXTRACT installation.

## Hardware and Software Requirements for HP-UX

First, ensure that your workstation meets the requirements outlined in Table A-4, the recommended minimum specifications for workstations. Before you purchase any hardware for use with ETI•EXTRACT, ETI suggests that you and your hardware vendor's sales representative contact your ETI Account Representative for information about additional supported configurations.

Table A-4. Hardware Requirements for ETI•EXTRACT Release 4.2—HP-UX

Hardware/Software	Minimum Requirement
Model	HP 9000 Series C160 (minimum).
CPU Clock Speed	160 MHz minimum (Host-centric: two CPUs preferred).
Operating System	HP-UX 11.0.
Windowing System	CDE.
RAM	Host-centric: 256 MB for every three users up to 2 gigabytes. UNIX Server: 256 to 512 MB.
Disk Drives	Minimum of two locally attached disks.
Disk Space	2 gigabytes free space on one disk, minimum. <sup>a</sup> 6 gigabytes recommended. More may be needed.
Swap Space	3 times the amount of physical memory.
Monitor	800x600 minimum resolution, color (recommended) or monochrome (15" minimum, 17" or larger strongly recommended).
Tape Drive	4mm (recommended, for backups).
CD-ROM Drive	Required for installation. Locally attached to the computer on which you want to install ETI•EXTRACT <b>or</b> can be mounted on that computer using NFS.
Remote Access	If a customer intends to use remote access other than to export objects from remote worksets for transfer to a local machine for use with ETI•EXTRACT, ETI will provide guidelines and recommend configurations based on the customer's specific needs. Customers should contact their ETI Account Representative to discuss their remote access needs. ETI does not support a Wide Area Network (WAN) configuration.
Software	UNIX Server: File system access software which allows Windows systems access to UNIX file system. Verified software includes: Samba and Hummingbird Communications NFS Maestro.
FLEXlm License Manager	Version 6.1 or higher.

a. Installing ETI•EXTRACT software on an HP 9000 system requires a minimum of 375 megabytes. As you use ETI•EXTRACT to generate conversion programs and add to the ETI•EXTRACT MetaStore, you will require additional disk space. For this purpose, ETI recommends that you have at least **2 gigabytes** of free space before you begin the installation.

## Required HP-UX Patches

At the time this document was published, operating system patches were required for all supported platforms. For the most current list of required operating system patches, select the **Required Operating System Patches** option on the ETI AnswerLink website:

`http://www.eti.com/answerlink/index.html`

ETI cannot supply you with the patches, since they are a product of HP. Please contact your Hewlett Packard representative directly to obtain patches, if necessary. You can also contact Hewlett Packard's Support Line and download software patches through their website:

`http://us-support.external.hp.com`

To determine which patches are installed, use the following command:

```
/usr/sbin/swlist -l product
```

Or, if `/usr/sbin/` is in your path, use this command:

```
swlist -l product
```

UNIX **man** (manual) pages are available for the **swlist** command. To read them, use the command:

```
man swlist
```

The **swlist** commands shown above display a list of all HP software products installed on your machine. If you want to restrict the list displayed to only a few products, you can pipe the output of **swlist** to the UNIX **grep** command. The following are a few examples:

```
/usr/sbin/swlist -l product | grep PH  
/usr/sbin/swlist -l product | grep libc  
/usr/sbin/swlist -l product | grep patch
```

## Kernel Parameters

Table A-5 lists the recommended values for kernel parameters for HP-UX. ETI recommends that you check and update the kernel parameters before installing ETI•EXTRACT. You must reboot your system if you make any changes to your system kernel parameters.

Table A-5. Recommended Settings for System Kernel Parameters (HP-UX)

System Kernel Parameter	Recommended Value	Description
maxdsiz	570425344	Maximum data size
shmmni	1500	Maximum number of shared memory identifiers
semgni	500	Maximum number of semaphore identifiers
semms	2500	Maximum total number of semaphores
shmseg	1500	Maximum number of shared memory segments per identifier
shmmax	1048576	Maximum shared memory segment

## Tested X Window System Servers

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Several different packages provide X Window system servers. ETI•EXTRACT has been tested and verified to run on the following X window system servers:

- OpenWindows/CDE on Solaris SPARCstations
- CDE on HP-UX 11.0 systems
- CDE on AIX 4.3 systems
- Hummingbird Communications eXceed
  - Version 6.1 or later running on Windows 95 and Windows NT
  - Version 6.2 or later running on Windows 2000

The following X Windows System servers are known to have problems with ETI•EXTRACT and are *not* supported:

- OpenWindows on Sun4 OS4—pre-Solaris 2.x SparcStations
- IBM PMX for OS/2 Warp

While other X servers may work, these are the only systems ETI has used and tested with ETI•EXTRACT. X servers vary greatly in their capabilities. Your results may vary, as well. The following section documents special considerations when working with the X Servers mentioned above and other servers that have been tested, but which do not support the features required by ETI•EXTRACT.

## Conflicts with Other X Windows Applications

Some X Window system-based tools allocate all available colors for their own use. This can cause color variations in other tools (such as ETI•EXTRACT). Tools known to cause problems include Netscape Navigator and Lotus Notes. In ETI•EXTRACT, the highlight color (used for selections) can become darker than usual. To work around the problem, see “X Window-Based Tools” on page A-11.

## Special Considerations

The following special considerations are specific to PC users running X Window emulation packages, such as PC eXceed.

- If at all possible, you should exit all ETI•EXTRACT editors prior to rebooting or powering off your PC. If you power off or reboot your PC while X Windows-based applications are still running, these X applications normally will not terminate. Given that ETI•EXTRACT editors are X Windows-based applications, the ETI•EXTRACT tools will not automatically terminate under these conditions.

If you cannot exit the ETI•EXTRACT tools prior to rebooting or powering off your machine, then once you connect to your UNIX host again, you must manually kill the ETI•EXTRACT UNIX processes you were running. Failure to do so results in the objects these editors were using being locked and unavailable for further editing. Use the **ps** command to view the running processes on your UNIX machine. Then use the **kill -9** command to kill the processes you were running. Once you have killed the old processes, restart ETI•EXTRACT. The Workset Browser will issue a message about cleaning up after the tools you had to kill, but this is expected in an abnormal termination situation.

Normally, killing the processes prior to restarting ETI•EXTRACT is all you need to do.

- The following special consideration is PC-specific:

If you have problems seeing the correct text highlight color in any ETI•EXTRACT text editor, or if you are having color problems of any kind, your PC's video settings may be incompatible with ETI•EXTRACT. This has happened on occasion with video settings of True Color, High Color 16-bit, and 65000 color modes on some PCs. If you experience color problems of any kind, try changing your video display settings to use 256 color mode instead.

The procedure for setting Windows colors is discussed in the next section.

## Setting Windows Colors

1. Open the Control Panel (**Start->Settings->Control Panel**).
2. Double-click the icon for **Display**.
3. Select the **Settings** tab.
4. Under the **Color Palette** options (Windows NT) or **Colors** options (Windows 2000), choose the 256 colors option.

## The eXceed X Server

The following special considerations apply to PC users who use the Hummingbird Communications eXceed X Server:

- Popup dialogs do not display in the correct position when using the default eXceed configuration. To get these windows to display in the proper location, you must change the eXceed configuration. Follow these steps to correct the problem:
  1. Enter eXceed's Xconfig option.
  2. Select Window Mode.
  3. Turn off the Cascade Windows option.
- The xemacs (supplied by Sun with some of their code development environments) can cause font problems when run with ETI•EXTRACT. This results in the tables displayed by the tools having their text clipped at the top. This problem has been seen on Windows NT machines. To work around the problem make sure you start ETI•EXTRACT before you start xemacs.

## X Window-Based Tools

The following are considerations when using X Window-based tools:

- Some other X Window system-based tools allocate all available colors for their own use. This option can cause color variations in other tools (such as ETI•EXTRACT). Tools known to cause problems include Netscape Navigator and Lotus Notes. The main color variation seen in ETI•EXTRACT is that the highlight color (used for selections) can become darker than usual. To work around the problem make sure you start ETI•EXTRACT before you start these other tools.
- Another option is to specify running Netscape with a private colormap. This option will cause flashing when moving the cursor in and out of the Netscape windows, but Netscape will look its best when operated in this mode. To run with a private colormap, use the following command:

```
netscape -install &
```

- Sometimes the color variations in ETI•EXTRACT are caused by the default colormap being too small. To avoid the problem of using too small a standard colormap, you need to create a standard colormap with the maximum size before other applications allocate and own too many colorcells. Do this by starting ETI•EXTRACT first or by executing the following command:

```
xstdcmap -default
```

You can put this command in each user's `.xinitrc` file (located in the user's home directory) to make sure this command gets executed before other applications. (The command creates a standard colormap with the maximum size.)

## UNIX Shell Windows

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### Shells Supported

All ETI•EXTRACT tools run within the C shell (both `csh` and `tcsh`) and the Korn shell (`ksh`). You can specify the shell you will be using with ETI•EXTRACT as your default login shell by changing the entry for your account in the file:

```
/etc/passwd
```

Only someone having **root** privileges can edit this file. See your UNIX system administrator for additional details.

**Note** The ETI•EXTRACT software expects to find shells in the standard location for shells: `/bin`.

### Special Considerations

The following are considerations when using UNIX Shell Windows:

- Sometimes the terminal windows used under the Sun Solaris operating system do not respond correctly to the **Backspace** key. As part of your `.cshrc` file, you may want to add the following lines:

```
# The following is used to set up some nice
# characteristics for stty sessions (like a
# usable BACKSPACE character). It checks for
# the existence of /kernel/unix to verify that
# you are on a Solaris 2.x machine.
if ( "`uname -s'" == "SunOS" ) then
    stty sane
    stty erase ^H
endif
```

- When running certain command shells (such as `tcsh`), you can be automatically logged out of the UNIX system you are connected to. This terminates your X window session and, as a result, can terminate ETI•EXTRACT applications. To turn off the automatic logout feature of these shells, put the following line in your `.cshrc` file in your home directory on the UNIX system:

```
set autologout = 0
```

## Running Multiple Applications on the MetaStore Server

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If you load more than one application other than ETI•EXTRACT on the same server the results may be unsatisfactory.

If you choose to load the ETI•EXTRACT MetaStore on a Server with multiple applications then the impact would be that there could be an increase in the number of CPU cycles, resulting in poor response time for your users. Therefore ETI recommends that you load the MetaStore on a separate server which has less user activity.

## Setting Up the Versant Service (New System Service)

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If your site is *not* using **yellow pages**, then you will need to update the local `/etc/services` file on the MetaStore Server to set up the required Versant service.

If your site utilizes a **yellow pages** (NIS) domain, then the system administrator will need to set up the Versant service manually on the **yellow pages** master. Additionally, the change will need to be disseminated within the domain (**yellow pages** update) prior to installing ETI•EXTRACT or the installation will fail. Distributing this change to the other machines within the domain is commonly done using the following commands:

```
cd /var/yp
make
```

To determine if NIS is running, execute the **ypwhich** command from the machine on which ETI•EXTRACT will be installed:

```
ypwhich
```

- If the **ypwhich** command is *not* found or the **yellow pages** are not set up, the machine is *not* running NIS.
- If the **ypwhich** command returns the hostname of another machine on your network, you are running NIS and the other machine is the NIS master.

## Versant Service Name and Port Number

Beginning with ETI•EXTRACT release 4.2, the Versant database service has a new name and port number. The new name is `osc522r42` and the port ID is 5042. This information is different from pre-4.2 ETI•EXTRACT installations and was chosen so that there is no conflict between the two.

The service for ETI•EXTRACT 4.2 should be defined as follows:

```
osc522r42    5042/tcp # Versant Service Daemon
```

Some critical points are:

- The name of the service is `osc522r42`. This name is uniquely associated with the ETI•EXTRACT 4.2 release. If you have prior versions of ETI•EXTRACT installed, then you will find other ETI•EXTRACT services defined. If you plan to run multiple versions of ETI•EXTRACT, then you will need to have a service defined for each release.
- By default the ETI•EXTRACT 4.2 service uses the 5042 port number. If this port number is already in use by another service, then select the next available unused port number. If you select a different port number from the default, then you need to make sure that any ETI•EXTRACT FX Client system is set up to use the same port number. Refer to the “Advanced Installation Topics” chapter in the *ETI•EXTRACT Tool Suite: Installation Guide for Windows* for information about customizing the port number on the ETI•EXTRACT FX Client system.
- The service must be set up to use the TCP/IP protocol.

# Setting Up User Accounts and Groups Required for ETI•EXTRACT Operation

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## Setting Up the ETI•EXTRACT Administrator Account (**exadmin**)

ETI•EXTRACT requires an ETI•EXTRACT user to be designated as *ETI•EXTRACT Administrator*. The ETI•EXTRACT Administrator is required to create, copy, delete, back up and restore MetaStores, and load Data System Libraries (DSLs) into a MetaStore.

Only the creator of a MetaStore can back up, restore, or load DSLs into a MetaStore. Therefore, one account is designated to perform all MetaStore administrative tasks. This database management paradigm has been designed to simplify the administration of ETI•EXTRACT.

This ETI•EXTRACT Administrator is not required to have **root** permissions. During installation, `ex_install` prompts for a UNIX user ID that will serve as the ETI•EXTRACT Administrator. ETI *strongly* recommends that this ID be **exadmin**.

**Note** The ID for the ETI•EXTRACT Administrator must exist before you start the `ex_install` script.

If your installation requires that the ETI•EXTRACT administrator use a different name than **exadmin**, ETI recommends it be consistent across the entire company. Several issues are associated with changing the default (**exadmin**) or using multiple IDs:

- Using the default facilitates multi-site copying of MetaStores.  
If you use a single account to administer MetaStores, you can use the backup and restore utilities to move an entire MetaStore between servers within the same company. If different account IDs are used, you must use the migration utilities to move MetaStores.
- Using the backup and restore utilities is generally faster and easier than using the migration utilities.
- Backup and restore copy all versions of all objects in a MetaStore. The migration utilities copy only the latest minor version of an object. The resulting database is not identical to the original.

**Warning** Backing up and restoring across UNIX and Windows architecture is not supported. In addition, using a “copy” command to copy MetaStores between UNIX and Windows is not supported. However, you can make a copy of the MetaStore using the `ex_exportDb` command on one platform and the `ex_importDb` command on the other platform.

- Using the **exadmin** user ID facilitates your ability to perform administrative tasks from an ETI•EXTRACT FX client.

## Setting Up the ETI•EXTRACT Group

ETI•EXTRACT *requires* that the group number(s) to which users are assigned *must* have group names associated with them in the file `/etc/group`. The group names *cannot* be blank.

ETI recommends setting up ETI•EXTRACT users as members of the **extract** group. This should be the primary group for ETI•EXTRACT users. This allows users to read and write each others' files. The ETI•EXTRACT Administrator must belong to the same primary group as all other users of ETI•EXTRACT. You may use the following command to determine group membership:

```
groups user_ID
```

where *user\_ID* is a UNIX user ID. (See the UNIX documentation for more information on the following items concerning group membership: `groups`, `group`, `chgrp`, and `ls`.)

## Separate UNIX User IDs Required for All ETI•EXTRACT Users

ETI•EXTRACT *requires* that all users have and use their own account when using the software. This requirement is imposed by ETI•EXTRACT, which maintains ownership and permissions information by user ID. Serious data integrity problems can result if two or more users share the same account.

## Required Setup for UNIX MetaStore Servers with ETI•EXTRACT FX Clients

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### ETI•EXTRACT Users Must Have Same Account on NT & UNIX

Each ETI•EXTRACT user must have an account set up within the domain. Some additional considerations are required when setting up user accounts depending on whether the MetaStore Server is a Windows or UNIX system.

If the MetaStore Server is a Windows system, the user account should also be a member of the ETI•EXTRACT user group (`extract`) to facilitate NTFS security and setting up share access/permissions to the MetaStore area on the server.

If the MetaStore Server is a UNIX system, then the Windows Administrator must ensure that the domain user account and password are *exactly* the same (in both case and spelling) as the user account and password on the UNIX MetaStore Server. This is required because the ETI•EXTRACT software, and embedded Versant database, validates the user account and password before access and operations are allowed on the MetaStore Server. The ETI•EXTRACT validation is case-sensitive as UNIX user validation is case-sensitive.

The Primary Domain Controller (PDC) stores user account information in a case-sensitive format. However, user login validation is case-insensitive within the Domain. The ETI•EXTRACT software uses the Windows account

information, as stored by the PDC, during user access validation on the MetaStore Server. The NT Administrator *must* ensure that the user account has been created on the PDC with the identical case as the UNIX user account.

**Warning** It is not sufficient to log in to the Windows domain using the same case as the UNIX account. The PDC account database, *not* the login information, is used during MetaStore access validation.

## ETI•EXTRACT Administrator User for the NT Domain/UNIX MetaStore Server

To facilitate ETI•EXTRACT administration, ETI recommends that the same ETI•EXTRACT Administration user account be set up on both the UNIX MetaStore Server and the Windows NT Domain.

**Note** The default user ID for the ETI•EXTRACT Administrator is exadmin. This will enable ETI•EXTRACT client systems to perform some administrative actions such as loading DSLs.

## IP Addressing and Host Name Resolution

The MetaStore Server must be able to perform “ip to hostname to ip” resolution for all ETI•EXTRACT FX Client systems. Similarly the ETI•EXTRACT FX Clients must be able to do “name-to-address” resolution for the MetaStore Server. Configuration and validation of these abilities are normally provided by users with global domain administrative privileges. Confirm that one of these services is in use so that communications between Client and Server is possible.

Typically this capability is provided by at least one of the following:

- WINS (Windows Internet Name Service)—Windows Service for resolving NetBios computer names to IP addresses.
- DNS (Domain Name Service)—Windows Service for resolving host names or fully qualified domain names when assigning IP addresses stored in a table for the server to resolve from.
- DHCP (Dynamic Host Configuration Protocol)—This protocol allows for automatic and dynamic IP addressing with subnet mask assignment.

## FTP and Telnet Accessibility

FTP is a utility for transferring files from one system to another. It is available on most operating systems. Telnet is a tool for logging in from one system to another and is also available on most operating systems. ETI•EXTRACT needs access to FTP and Telnet to perform file transfers from ETI•EXTRACT source systems to ETI•EXTRACT target systems.

ETI•EXTRACT needs FTP and Telnet access throughout all MetaStore to client configured machines that require file transfers of ETI•EXTRACT files.

If any of your systems do not have these utilities available contact your system administrator. Your systems administrator will need to give you access to FTP and Telnet in order to work with ETI•EXTRACT on your network.

## UNIX File System Access for Windows Clients

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Additional software must be installed on the UNIX MetaStore Server to use the enhanced client/server features available in ETI•EXTRACT FX 4.0 and later.

Prior to ETI•EXTRACT Release 4.0, ETI•EXTRACT allowed the use of Windows systems as ETI•EXTRACT clients. However, Windows users were required to log in to the remote ETI•EXTRACT Server using an X-Windows emulation package. The Windows client then ran tools directly on the ETI•EXTRACT Server with the user interface displayed on the local system.

This approach has several deficiencies. A large number of concurrent ETI•EXTRACT users places a heavy processing burden on the Server system. All display updates are sent across the network. Occasionally, third-party emulation products have defects which affect the usability of ETI•EXTRACT tools.

ETI•EXTRACT FX 4.0 and later releases provide an improved client/server interface so that Windows clients can execute the ETI•EXTRACT tools locally. This way, the processing power of the ETI•EXTRACT Server can be used for MetaStore operations rather than for running client tools.

Most ETI•EXTRACT tools create, modify or read data stored in the MetaStore files directory. With Windows clients running tools locally, the tools need a way to access the MetaStore files directory on the Server system. For Windows clients accessing a Windows Server, transparent file access is accomplished by creating shares on the Server system and mapping network drives on the client systems. For accessing the UNIX server's file system, a UNIX user account and additional third-party software are required.

ETI•EXTRACT and the underlying VERSANT database require that the user login ID be identical on both the UNIX and Windows platforms. Note that UNIX is case-sensitive when it validates the user login and Windows is not. Therefore, ensure the Windows Domain controller is set up to use a user login with exactly the same case as required by UNIX.

**Note** Checking the user login for the local machine is not sufficient. You must check the name as set up on the Domain controller. This will require Domain administration privileges.

Two software packages, Samba and NFS Maestro, were verified by ETI to provide Windows clients with file system access to the UNIX ETI•EXTRACT Server. Either of these 3rd party products can be used to provide file system access for Windows clients.

**Note** It may be possible to use another product to provide remote file system access; however, make sure the product supports UNIX symbolic links, creation masks, and long file names.

ETI only endorses third-party applications for use with ETI•EXTRACT which are Year 2000 compliant. Both the Samba and NFS Maestro products meet Year 2000 requirements.

## SAMBA

Samba is a software package for UNIX systems which provides Windows clients with access to the UNIX file system. It implements the Common Internet File System protocol (CIFS), an industry standard for file system access.

Samba is made available under the GNU public license. There is no client license fee and you can use Samba at no cost on any UNIX server. A Samba release is available for all ETI•EXTRACT-supported UNIX servers.

ETI has tested and verified ETI•EXTRACT with Samba release 2.0.3 (for Windows NT) and release 2.0.7 (for Windows NT and *required* for Windows 2000); however, you can use a newer version of Samba at your discretion.

The Samba configuration parameters required for use with ETI•EXTRACT are documented in Table A-6. For each parameter listed, ETI provides the default value as set by Samba and the value required by ETI•EXTRACT.

Additionally, ETI recommends a scope for each of the parameters. You can set most parameters in the service-specific sections of the configuration file; ETI has identified these parameters with an 'S' in the scope column. This allows you to select a configuration which you apply only to the Samba service used with ETI•EXTRACT. ETI identified parameters that you must set in the global section with a 'G' in the scope column. In some cases, the value required by ETI•EXTRACT and the Samba default are the same.

Make sure that your configuration uses the settings listed for ETI•EXTRACT to operate correctly.

**Note** UNIX administrators should work with Windows administrators when setting the following parameters:

```
workgroup
force group
password server
```

For a detailed description of each parameter, see the **man** page for the Samba configuration file, `smb.conf`.

Table A-6. Required SAMBA Configuration Parameters

Parameter Name	Default Samba Value	ETI•EXTRACT Value	ETI•EXTRACT Scope
mangle case	no	no	S
preserve case	no	yes	S
short preserve case	no	yes	S
create mask	0744	0664	S
directory mask	0775	0775	S
follow symlinks	yes	yes	S
read only	yes	no	S

You can configure all other Samba parameters to the needs of the individual site. Other settings which may affect ETI•EXTRACT operation are listed in Table A-7.

Table A-7. Other SAMBA Configuration Parameters

Parameter Name	Default Samba Value	ETI•EXTRACT Value	ETI•EXTRACT Scope
deadtime	0	0	G (specific to the global section of the configuration file)
force group	Not set by default	extract*	S
force user	Not set by default	Setting this parameter is not recommended	S
workgroup	Not set by default	workgroup of server (site-specific)	G
security	security default=share	server	G
password server	Not set by default	name of password server (site-specific)	G

\* This should be set to the *extract* or *eti* group, depending upon the name of the ETI•EXTRACT group set up at your site.

A sample Samba configuration file (*smb.conf*) is shown below:

```
# DEFAULT Non-master configuration

workgroup = eti-unix
domain master = no
preserve case = yes
short preserve case = yes
create mask = 0664
directory mask = 0775
force group = extract
name resolve order = host bcst
security = server
password server = etisrvr

[homes]
    force group = extract
    guest ok = no
    read only = no

[eti-extract]
    path = /export/home/extract
    guest ok = no
    read only = no

[printers]
    path = /var/spool/samba
    writable = no
    public = yes
    printable = yes
    print command = /usr/ucb/lpr -r -P%p %s
    lpq command = /usr/ucb/lpq -P%p
    lprm command = /usr/ucb/lprm -P%p %j
```

## Mapping With Different User Accounts and Passwords

Although you can use different user accounts and passwords for setting up Samba connections, ETI•EXTRACT and the underlying VERSANT database require that the Windows Domain user account and password are exactly the same (that is, both in spelling and case) as the user account and password on a UNIX MetaStore Server. VERSANT validates the user account and password before access and operations are allowed on the MetaStore.

## Naming the Samba Share

Each directory or printer being shared via Samba has a separate section in the `smb.conf` file, with the “share name” in square brackets, for example, `[eti-extract]`. This file can be found in your Samba install area. The following is typical location for a Samba installation and the `smb.conf` file:

```
/usr/local/samba/lib/smb.conf
```

where *samba* is the name of the Samba install directory.

Settings which are specific to this share are specified in the lines following the share name, as shown in the `smb.conf` section below:

```
[eti-extract]
  path = /export/home/extract
  guest ok = no
  read only = no
```

The Samba share name should *not* be the same as a user account. There are two reasons:

1. Samba can be configured to set up a share automatically for each user account which is exported.
2. It is common for user accounts to be exported. If there are multiple shares with the same name, then unpredictable results can occur when mapping from the PC client systems.

For UNIX MetaStore Servers, it is recommended that the Samba share name be called `eti-extract`, since many customer sites already have user accounts named `extract`. This avoids problems with multiple shares being named the same, as described above.

Detailed information about Samba and how to download a Samba distribution is available on the website <http://samba.anu.edu.au/samba> and is mirrored at <http://www.samba.org>.

## Using Samba on an HP-UX System

For Samba to work on an HP-UX system, you must add the following line to the `smb.conf` file in the global section (that is, not in `[homes]` or elsewhere):

```
guest account = bin
```

At some point Samba tries to change to the user named “nobody” (UID = -2), but HP-UX considers this to be an invalid ID. The `guest account` line above changes that to `bin`, which is an acceptable alternative in most cases.

## NFS Maestro

NFS Maestro is a commercial software product developed and distributed by Hummingbird Communications Ltd. Some customer sites use this product to provide Windows systems with access to UNIX file systems.

ETI has tested and verified ETI•EXTRACT with Hummingbird Maestro release 5.1.3 (for Windows NT) and release 7.0 (for Windows NT and *required* for Windows 2000); however, you can use a newer version of Maestro at your discretion.

### MetaStore Server Setup

On the UNIX MetaStore Server, set up the ETI•EXTRACT root directory as shared for the **extract** group. Table A-8 lists example commands for the various UNIX platforms.

**Note** These examples enforce no access restrictions; that is, anyone would have access to the share.

Table A-8. Share Commands

Operating System	Export Command
Solaris	<code>/usr/sbin/share -F nfs -o rw /export/home/extract</code>
HP-UX	<code>/usr/sbin/exportfs -i /export/home/extract</code>
AIX	<code>/usr/sbin/exportfs -i -o rw /export/home/extract</code>

### Client Setup

To facilitate use of the NFS Maestro product with ETI•EXTRACT, ETI recommends that you select the **Preserve Case** option as the default during the installation of NFS Maestro. Additionally, ETI recommends that **File Protection** is set to *RWX* for *User* and *Group* and to *RX* for *Other* during the NFS Maestro installation. This allows ETI•EXTRACT clients to use the Windows Explorer to map network drives to the UNIX MetaStore Server. If **Preserve Case** and the recommended file protections are not the default, then ETI•EXTRACT Clients must use the Maestro NFS Network Access utility to map network drives. For information on the NFS Network Access utility, see the “Hardware and Software Requirements” appendix in the *ETI•EXTRACT Tool Suite: Installation Guide for Windows*.

You can obtain detailed information about NFS Maestro from the Hummingbird website, <http://www.hummingbird.com>.

