

**Release**

**4.0**

# **CORE Enterprise™ Users Guide**

**Client-Server Architecture for Integrated Team Environments**



**CORE®: Product & Process Engineering Solutions**



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# 1 CORE Enterprise

CORE 4.0 is available in two separate, yet interoperable configurations: CORE Workstation (data stored in an image file on a single user's computer) and CORE Enterprise (client – server architecture, data stored in a database on a server and accessed through Windows 98/NT/2000 client computers).

CORE Enterprise is built upon the *GemStone Object Application Server*; individual CORE clients can now access a common server-based repository. The enterprise addition provides the capability of concurrent user access as well as unlimited scalability. This manual provides the information needed to use the CORE Enterprise Edition.

## *Client-Server Architecture*

CORE Enterprise has a two-tiered object system with client server architecture. The server acts as an object repository. Since the data is moved off the client computer and stored on the server, multiple users can access shared data. By contrast, in a single-tiered system there is a single user with no sharing of objects, and all applications and objects for the applications reside on the computer, requiring the computer to be sized for the largest application.

## **Object Repository**

In a traditional two-tiered system, the server uses a relational database with an object system on the client, making it necessary to map the table structure of data storage in the relational database to the objects on the client. A programmatic interface is used to map the application objects to tables. This necessitates a continual back and forth between the client and the server through the mapping interface to get data.

CORE Enterprise uses an object two-tiered system, in which both the client and server “speak objects”. Therefore the mapping of relational data on the server to objects on the client is eliminated, and the objects are stored in an object repository. The behavior can be executed on the server, allowing the application to be partitioned in the way that makes the most sense for performance. The

objects run on the application server, reducing the client workstation processing burden, and allowing your system to run faster and more efficiently.

### **Multi-User Access**

The two-tiered system with client server architecture allows multiple users to access the database concurrently. This simplifies the team approach to system engineering, while still allowing for independent analysis. CORE Enterprise can operate with any number of users, working in the same project or separate projects. Users cannot make changes to data unless they have elements edit locked; therefore, the data integrity is preserved. Data is refreshed when users make changes to elements or element attributes so that each user gets a complete updated picture of the database before making new changes. Access to data can be regulated through the permissions and read/write privileges in the User/Group Tool. Therefore, users can be granted access to the specific areas of a project for which they are responsible.

### **Concurrent Updating**

Part of the power of CORE Enterprise is the concurrent updating model. Changes made by one user are reflected in ALL clients immediately. It functions as if everyone were working on the same image at the same time. For more information on view updates see Chapter 6, *Operational Differences*.



## 2 Getting Started

CORE Enterprise runs on the *GemStone Object Application Server*. The application server runs by various CORE processes. Of key importance is the main resource coordinator and monitor process called COREStone. To support the application server, CORE provides scripts to simplify your administrative tasks concerning the application server. Details regarding system administration are provided in Chapter 3, *Administration Tools*.

A few operational differences can be found in the CORE Workstation and the CORE Enterprise. These differences are noted in *Chapter 6 – Operational Differences*. For information regarding new features available in CORE, see the WhatsNew.txt file in the CORE 4.0 “Docs” directory provided with your package.

Vitech Technical staff will assist you in the CORE Enterprise Server installation. *Appendix A – Installation Preparation* contains two worksheets that will reduce the time it takes for server installation. You are expected to complete the two worksheets in Appendix A before scheduling the server installation with Vitech.

### *About Session Dialog*

After you have successfully installed CORE Enterprise and logged on, you can review your access privileges and see details about your current session in CORE Enterprise by opening the About Session Dialog.

You can access the About Session Dialog from the Help Menu on the CORE Control Panel.

All of the information is read only, so it cannot be changed from this dialog. The About Session dialog contains two panes, (see Figure 2--1). The top pane contains information about your user account including your user name, full name, description, group membership, and user privileges. The bottom pane contains information about your current session, i.e. the Server Host Name, Stone Name, the process identifier of the application running on the NT server (PID), the Session S/N (serial number of the session), the Session ID number, and the IP

address of your computer. If you run into any problems, this information could be useful when contacting Vitech for assistance.

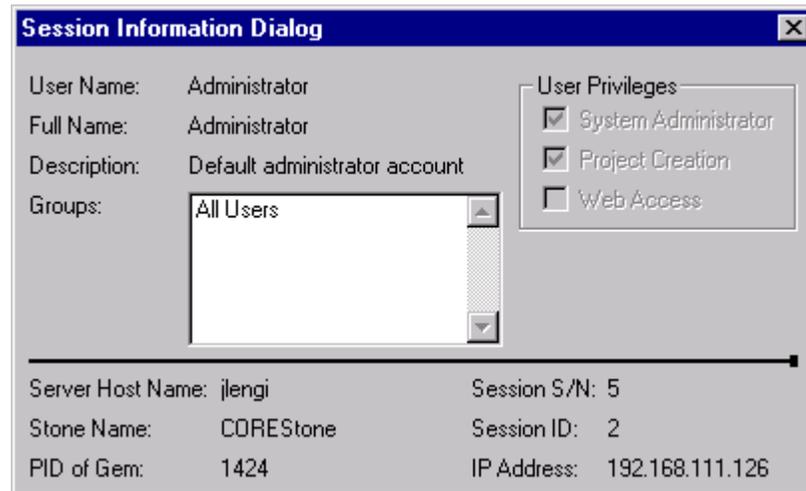


Figure 2-1 About Session Dialog

## *The CORE Enterprise Application Server*

The CORE Enterprise Server includes two Windows NT services. In a standard installation, these are called *COREStone* and *NetLDI51*. Details about these services and their status can be viewed in the Services Control Panel (Start > Settings > Control Panel > Services). These services launch several other processes that will also be running on the server.

Some of the administration tasks require that the application server be stopped and started. These services may be started and stopped using either the Services Control Panel or one of the scripts in the *scripts* subdirectory.

### Starting the CORE Enterprise Application Server

In order for users to access the CORE Enterprise Server, *COREStone* must be started. This simple operation can be accomplished with the CORE Enterprise script:

```
StartCOREStone.bat
```

This script will start the application server. Once *COREStone* is started, it will remain running even after the user that started it logs out. You should run this command from a command line console. If an error occurs while starting *COREStone*, you will receive a notification that the *stone* did not start. If this happens, contact Vitech Technical Support.

### Stopping the CORE Enterprise Application Server

Occasionally, you will be required to stop *COREStone*. This is required during operating system backups of the CORE Enterprise Server files. Stopping the

*stone* is a simple operation that can be accomplished with the CORE Enterprise script:

*StopCOREStone.bat*

This script will stop the application server. Once *COREStone* is stopped, users will not be able to log in. You should run this command from a command line console. All users must be logged off before the command can be executed successfully. Make sure that all users are logged out of *GemStone* before attempting to stop the *stone*. If there is a failure reported when executing this command, most likely a user is still logged in. If there are problems starting or stopping the services, the administrator can check the end of the appropriate log file for possible causes. “*COREStone.log*” and “*NetLDI51.log*” can be found in the log subdirectory. The log files for other server processes (e.g. user sessions) are also written in this directory. If, for some reason, *COREStone* will not stop even after all users have logged out (preferably after exiting the CORE Enterprise Client application), then contact Vitech Technical Support.

## ***Other CORE Documentation***

In addition to this CORE Enterprise Guide, use the *Vitech CORE Workstation User Reference Guide* as a basic reference to CORE's features and how to use them.

Additional documentation on CORE Enterprise will be developed as needed to explain extensions to the basic tool.

If you have any questions or need assistance, please contact us at the address and phone numbers below.



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## 3 Administration Tools

CORE Enterprise employs the latest industrial strength object-oriented database technology with the *GemStone Object Application Server*. This technology provides a highly scalable, disk-based multi-user system. CORE Enterprise provides administration tools and scripts that allow for basic user and database administration of your CORE Enterprise system.

### *Basic System Management*

Two services are required to run *GemStone*. These are the *Network Long Distance Interface* (NetLDI51) service and the *COREStone* service. They run as Windows NT services and are configured to start-up when the server boots independent of any particular login. Details about these services and their status can be viewed in the Services Control Panel (Start > Settings > Control Panel > Services). These services launch several other processes that will also be running on the server. Users are not required to login to the NT server to operate CORE Enterprise. The *NetLDI* and *COREStone* services can also be started manually and will continue to run after the administrator who started them logs out. Shutting down one or both of these services will disable access to the CORE Enterprise system. Therefore, it is recommended that neither of these services be stopped in a production system.

### NetLDI Service

To create the *NetLDI* (Network Long Distance Interface) service, run the CORE Enterprise script:

```
createNetLDI.bat
```

This script will create a Window NT service called *NETLDI* that is visible through the NT Services utility.

Note
This script is run during a normal CORE Enterprise Server installation to create and setup the <i>NetLDI</i> service.

## COREStone Service

The *COREStone* service is the main GemStone application server process that is required to operate the GemStone Application Server. *COREStone* acts as a resource coordinator and monitoring process. This service is also visible through the NT Services utility.

To create the *COREStone* service, run the CORE Enterprise script

*createStone.bat*

This script will create a Windows NT service called *COREStone* that is visible through the NT Services utility.

Note
This script is run during a normal CORE Enterprise Server installation to create and setup the <i>COREStone</i> service.

## Scheduled Maintenance Scripts

CORE Enterprise supplies scripts to provide the necessary automated scheduled maintenance to the CORE Enterprise Server. These maintenance scripts are designed to keep your system running as smoothly as possible. The scripts are named according to their function: the *Extent Cleaner Script*, the *Registry Cleaner Script*, the *Lock Cleaner Script*, the *Object Report Script*, and the *Hot Backup Script*. These scripts are scheduled to run automatically at regular intervals when the *COREStone* application server is running. Windows NT provides a scheduling service that allows these scripts to be run at specified times.

Scripts cannot run if the *COREStone* service is not active. Scripts also will not run if the *Schedule* service is not active. The first three scripts mentioned above are executed every time you start the *COREStone* service using the *StartCOREStone.Bat* script or the corresponding Start Menu command. This ensures that the database is properly maintained even if the *COREStone* service is stopped regularly, such as for a file system backup. Each of these scripts can also be run individually at any given time by using the corresponding Start Menu command or by executing the appropriate batch file in the Scripts folder. If you wish to examine the current list of scheduled tasks, simply go to a command line and enter the following command:

*at | more*

If you wish to unschedule a particular task in the above list, go to a command prompt and enter the following command:

*at <id> /delete*

where *<id>* is the task number obtained by using the “at” command by itself. To unschedule all tasks, go to a command prompt and execute the following command:

*at /delete*

Note that some scheduled tasks may not be related to CORE, and you should find out why they are there before unscheduling them. If, after unscheduling all tasks, you wish to reschedule all CORE database maintenance scripts, you can execute the *Schedule.bat* file in the *InstallAids* subfolder of the CORE Enterprise Server installation folder, which is C:\COREServer by default. To modify the schedule, you can edit this file before executing it. Do not run *Schedule.bat* unless you have first removed all previously scheduled script runnings. Otherwise, the scripts will be scheduled more than once at the same time, causing useless and unnecessary server activity.

Note
Output from running the scripts can be viewed in the Logs subfolder of the root CORE Enterprise Server program files location which was selected during installation.

## Extent Cleaner Script

During the course of normal operation with the application server, the repository collects a number of objects that are no longer used by the system. These objects use valuable disk space in the repository and need to be reclaimed. The *Extent Cleaner* is a script that scans the repository for these “dead” objects, such as deleted elements, relationships, and even whole projects. Once these objects have been identified, the application server will then automatically reclaim the space occupied by these objects. This is part of the normal maintenance of the system. The *Extent Cleaner* is scheduled to each weeknight (Monday through Friday) as part of the automated *Hot Backup* procedure. This script can also be executed manually at any time while the *COREStone* is running.

## Registry Cleaner Script

During the normal operation of the system, when users log into the application server and open a project, they are automatically registered in the project/user registry. This registry needs to be cleaned occasionally in order to allow the *Extent Cleaner* script to effectively complete its job. The *Registry Cleaner* script is scheduled to run hourly to remove defunct entries from the *Project User Registry* to speed updating and notification. An entry in the registry becomes defunct when the session referencing the registry terminates, i.e. when a user logs out or the session is stopped.

## Lock Cleaner Script

The *Lock Cleaner* script is scheduled to run each weeknight (Monday through Friday) as part of the *Hot Backup* procedure. It removes defunct locks from database objects. An edit lock becomes defunct when the session referencing the edit lock terminates, i.e. when a user logs out or the session is stopped.

## Object Report Script

The *Object Report* script appends an object audit report and a file size report to the end of the *ObjectReport.Out* file in the Logs folder. The object audit report lists objects in the repository greater than 3 KB in size and reports the locations of corrupt objects. The file size report shows the size of the extent file and how much free space exists within it.

## Hot Backup Script

The *Hot Backup* script runs each weeknight (Monday through Friday). It begins by invoking the same functionality as the *Registry Cleaner* script to remove defunct session records, the *Lock Cleaner* script to remove defunct database element locks, and the *Extent Cleaner* script to reclaim the space occupied by the dead and defunct objects. This minimizes the number of objects subsequently backed up and the amount of disk space consumed by the backup file.

The *Hot Backup* script, which can safely run while the repository is in use and being modified by users, proceeds to create a single backup file containing all information in the repository. The file is located in the COREBackups folder, and its name is based on the current date and time in YYMMDDhhmm format.

The *Hot Backup* script maintains one week's worth of backup files in the COREBackups folder. Each time it runs, it erases any files in that folder that are more than one week old (based on the file name as described above). To preserve files in this folder for more than one week, you can rename them; however, it is preferable to archive the contents of the COREBackups folder to tape once each week on a regular schedule. As your CORE Enterprise repository grows, it is important to ensure that sufficient free space exists in the disk partition containing the COREBackups folder, since the hot backup files can be quite large. Contact Vitech should you need to move this folder or reduce the frequency of hot backups.

## *Changing the COREAdmin User Account*

As part of the standard CORE Enterprise Server installation process, a user account with the following properties is created:

User Name: COREAdmin

Password: enterprise01

Advanced User Right: Log on as a service

Login Directory: C:\COREServer\logs

(where C: is the drive selected for installation of the CORE Enterprise Server program files)

The *COREStone* and *NetLDI51* services run in this account. If the administrator wishes to change this account or its password, these steps should be followed:

1. Startup information for these services must be updated in the Services Control Panel.

2. The new account must be assigned full control of all the CORE Enterprise Server installation files and directories (the program files location, the extent or repository location, and the transaction logs location).
3. The new account must also be assigned the right to log on as a service.
4. The default login directory should be set to the COREServer\logs subdirectory.

## ***Renaming or Moving CORE Enterprise 4.0 Server Installation Directories***

You should not attempt to rename or move the CORE Enterprise Server installation directories unless necessary. Do not rename any of the subdirectories within the CORE Enterprise Server program files location or move them out of their parent directory. One means of moving or renaming one of the CORE Enterprise Server root directories is to export all the projects from CORE, uninstall and reinstall the CORE Enterprise Server, and import all the projects back into the clean installation. (See the *CORE Workstation User Reference Guide* for instructions on exporting and importing projects.) If this is not feasible, and the directories must be moved or renamed manually, then the references to the directories must be updated in the following manner:

1. The %GEMSTONE% system environment variable (*Start > Settings > Control Panel > System > Environment*) should point to the root program files location (e.g., C:\COREServer).
2. The %COREBackups% system environment variable should point to the directory where you want hot backups to be created (originally installed under the name COREBackups). See the Backup and Recovery chapter for more information.
3. The %CORELogs% system environment variable should point to the directory where you want logs to be written to (originally installed under the name CORELogs).
4. The %CORERepository% system environment variable should point to the location of the CORE Enterprise server repository (originally installed under the name CORERepository).
5. The default login directory for the COREAdmin account should be changed to the new COREServer\logs location. In the *User Manager*, double click on the user or select the *Properties > Profile Button > Home Directory* section and set the local path.
6. Edit the file COREServer\data\system.conf and edit the values of the DBF\_EXTENT\_NAMES and STN\_TRAN\_LOG\_DIRECTORIES parameters to reflect the new locations for the repository (extent0.dbf) and the transaction logs (originally installed as CORELogs).
7. Run the Windows NT utility REGEDIT.EXE and navigate to the following registry key:

HKEY\_LOCAL\_MACHINE \ SOFTWARE \ GemStone \ GemStone

Listed under the GemStone key are the 5.1.5 key, the *CreatedNetldis \ netldi51* key, the *CreatedStones \ COREStone* key, and the *RunningServers* key.

8. In the 5.1.5 key, the PathName value should point to the root program files location (the same as the value of the %GEMSTONE% environment variable specified in #1 above).
9. In the *CreatedNetldis > netldi51* key, the default Options value should include a reference to the location of the netldi51.log file in the logs subdirectory.
10. In the *CreatedStones > COREStone* key, the default Options value should include a reference to the location of the COREStone.log file in the logs subdirectory and two references to the location of the system.conf file in the bin subdirectory.
11. The following CORE2net registry entries should be updated to point to the corresponding subdirectories of the root program files location (e.g. C:\COREServer):
  - The path value of the HKEY\_LOCAL\_MACHINE \ SOFTWARE \ Vitech Corporation \ CORE2net Application Server \ 4.0 \ General key
  - The commonScriptDirectory, reportDirectory, and userReportDirectory values of the HKEY\_LOCAL\_MACHINE \ SOFTWARE \ Vitech Corporation \ CORE2net Application Server \ 4.0 \ Reports key
  - The path value of the HKEY\_LOCAL\_MACHINE \ SOFTWARE \ Vitech Corporation \ CORE2net Communication Server \ 4.0 \ General key
  - The serverRoot and userRoot values of the HKEY\_LOCAL\_MACHINE \ SOFTWARE \ Vitech Corporation \ CORE2net Communication Server \ 4.0 \ HTTP key

## ***Commit Records***

The CORE Enterprise Server maintains a record of all of the committed objects for each login session. It uses this record to detect conflicts when a session attempts to commit a change to the database. If there is a backlog of these records in the application server, processing speed deteriorates significantly.

With the approach utilized in CORE Enterprise, a backlog of records should not happen. However, if a backlog does occur, the following is an explanation of what will happen and what you can do.

## **Abort Signal**

The CORE Enterprise Client applications are responsible for updating their view of the database at regular intervals. This ensures that the backlog of records in the server does not build up, and that a current view of the database is maintained. If, for some reason, the backlog reaches a threshold set in the system configuration

file for the application server, a signal is automatically sent to the client that has least recently refreshed its view. This is called the *Abort Signal*.

The CORE Enterprise Client applications are designed to always have the latest view of the database and should therefore never receive an *Abort Signal* from the server. However, it is possible that this circumstance may arise and the client will automatically respond to this signal by refreshing its view of the database and then refreshing all of the open windows to get the latest view of the database.

## **Lost Object Table Root**

During the course of normal operation in CORE Enterprise, the client applications are responsible for maintaining an updated view of the database. If, for some reason the client does not do this, the server sends an *Abort Signal* (described above) informing the client that it should update itself. If the client fails to respond to the *Abort Signal*, the application server will forcibly abort the client session and then send a signal to the client called a *Lost Object Table Root*. The client has no choice; the connection to the server terminates at this point. No data will be lost if this happens. The client machine will automatically quit out of the application, and then the user can login to resume a normal mode. CORE Enterprise is configured to avoid this situation. If it should occur, please contact Vitech Technical Support.



## 4 Backup and Recovery

### *Transaction Logging Modes*

Important to this discussion is an understanding of the distinction between the server's "full" and "partial" transaction logging modes. When a CORE Enterprise client commits a change to the database, the change is temporarily written to the transaction logs before it becomes part of the database. The transaction logs are stored in the directory specified for them during server installation, C:\CORELogs by default.

In **full** logging mode, even if the server crashes before a change enters the database, the transaction logs capture enough information to recover the change. If the database becomes corrupted, the transaction logs can be reapplied to an earlier backup copy of the database to "roll it forward" to the current state. Full logging mode is much more robust than partial logging mode.

In **partial** logging mode, the transaction logs capture only enough information to transfer changes to the database while the server is running. In the event of a server crash, a few of the most recent changes, which have not yet been written from the transaction logs to the database, may be lost. If the database becomes corrupted, it is only possible to recover to the state of the most recent backup. CORE Enterprise Server performs much better in partial logging mode than in full logging mode.

Because server crashes are rare and database corruption has never been observed, **by default, CORE Enterprise Server operates in partial logging mode** to take advantage of the performance benefits. **See *Appendix E – Disaster Prevention and Recovery* for instructions on how to switch the server between partial and full transaction logging modes.**

### *Backup Mechanisms*

Built into CORE Enterprise are several levels of redundancy to help preserve and protect data stored in CORE. First, there is the database itself, also known as the *repository* or the *extent*, which holds all of the objects in the server. It is

represented as a single file named *EXTENT0.DBF* and is stored in the location specified for it during installation, C:\CORERepository by default.

Second, when the server is operating in full logging mode, transaction logs record all actions performed on the *extent* and thus store the information necessary to reconstruct transactions already committed in the event of a system loss. These log files are used to recover from crashes such as those caused by a power failure, operating system failure or the inadvertent termination of the COREStone service. Transaction log files are numbered sequentially and are stored in the location specified for them during installation, C:\CORELogs by default. Transaction logs are analogous to the recovery log maintained by CORE Workstation.

Third, a CORE Enterprise server, by default, performs a hot backup operation each weeknight (Monday through Friday). This process, which is described in greater detail below, effectively makes a copy of every live object in the CORE Enterprise repository.

Fourth, a user can export data from the *extent* into a human-readable ASCII format called an *RDT* file. It is recommended that this be done periodically, as the *RDT* format is the most stable and recoverable form of the data. Note that each project in the CORE Enterprise repository is exported to a separate *RDT* file. The *RDT* files contain data only. Any underlying schema changes must be exported separately to an *SCH* file. *RDT* and *SCH* files can also be used to move data into CORE Workstation. It is best to give *RDT* and *SCH* files the same name as the projects from which they were exported.

In the event of a power outage or other sudden failure that leaves the hardware and file system intact, no special recovery steps are necessary. Simply reboot the server, and the *extent* will come back online. If the server was operating in full logging mode, any data at the end of the transaction logs that had not yet been written to the *extent* will be automatically loaded and saved. If the server was operating in partial logging mode, the last few changes may be lost.

In the event that the transaction logs are damaged but the *extent* file remains intact, you can also simply reboot the system, and only a very small amount of data will be lost—that which was written to the transaction logs but did not make it into the *extent*. At this point, however, you will wish to make a full backup of the *extent* using one of the methods described below. If you are using full transaction logging mode, this will ensure that it is still possible to recover all data committed henceforward, should another catastrophe occur.

In the event that the *extent* is damaged but the transaction logs remain intact, and if the server was operating in full transaction logging mode, then it is possible to recover from an older backup copy of the *extent* by replaying appropriate transaction logs to bring it up to date.

In the event that both the *extent* file and the transaction logs are damaged, it will only be possible to recover data to the point of the latest *extent* and full transaction log set or RDT file set that has been backed up to another location.

The *extent* backup can be either a file system backup or a hot backup, as described below.

If your server is operating in full transaction logging mode, you should back up your *extent* often enough so that all transaction logs created or modified since the backup will fit in the transaction log directory at the same time. You can remove older transaction logs only if you maintain archives of *all* transaction logs created or modified since the last *extent* backup. If your server is operating in partial transaction logging mode, the default, you should back up your extent even more often, because, in the event of database corruption, you will only be able to recover to that point. By default, CORE Enterprise performs a hot backup operation, as described below, every weeknight (Monday through Friday).

### *File System Backups*

Note
<i>The CORE Enterprise extent file <b>cannot</b> be backed up using file system tools while the CORE Enterprise Server software is active, even if your backup software supports backing up files that are in use!</i>

To back up the extent using file system backup software such as ArcServe, Norton Backup, etc., you must first stop the *COREStone* service using the Stop *COREStone* command on the Start menu. Once the file system backup is complete, you can restart the service.

On the other hand, the transaction logs **can** be backed up safely using file system tools while the CORE Enterprise Server software is in operation as long as the backup software supports backing up open files. If your server is operating in partial logging mode, the transaction logs cannot be used for recovery and should not be backed up.

You are encouraged to establish and diligently follow a disciplined policy for file system backup.

Note
When backing up extents and transaction logs, please ensure that their names and last-modified timestamps are preserved. This information will be required to use these backups. You also need to know which transaction logs were used with which extents.

### *“Hot” Backups*

A hot backup is a backup of the CORE Enterprise *extent* while the CORE Enterprise Server software is running. As stated above, a hot backup cannot be performed using standard backup software. However, you **can** make a hot backup of the *extent* using a special tool built into CORE Enterprise Server. This mechanism has two advantages over a file system backup:

1. You can make a hot backup of your database while users are logged into it and modifying it.

2. When you restore from a backup made in this way, the extent is compacted and space used by defunct objects is reclaimed.

The CORE Enterprise server automatically makes a hot backup each weeknight (Monday through Friday). You can make a hot backup at any time by following these steps:

1. Run the Hot Backup script by double-clicking HotBackup.Bat in the Scripts directory or by clicking on the corresponding Start menu command.
2. The backup will be stored as a single file in the directory selected for hot backups during server installation, C:\COREBackups by default. To view or modify the location under Windows NT, go to *Start > Settings > Control Panel > System > Environment* and inspect the value of the “COREBackups” variable. (Under Windows 2000, go to *Start > Settings > Control Panel > System > Advanced > Environment Variables*.) The backup filename is based on the current date and time in YYMMDDhhmm format. The *Hot Backup* script maintains one week’s worth of backup files in the COREBackups folder. Each time it runs, it erases any files in that folder that are more than one week old (based on the file name as described above). As your CORE Enterprise repository grows, it is important to ensure that sufficient free space exists in the disk partition containing the COREBackups folder, since the hot backup files can be quite large. Contact Vitech should you need to move this folder or reduce the frequency of hot backups.
3. Verify that the backup was successfully completed by looking at the bottom of the HotBackup.Out file, in the COREServer\logs directory. The result before the “output pop” should be “true”.
4. If the hot backup location mentioned above is not already on an archival medium, the hot backup of the extent should then be archived using standard backup tools.
5. If your server is operating in full logging mode, also make a file system backup of the transaction logs.
6. You may wish to remove old backups from the hot backup location to free storage space.

## ***Recovery Using RDT Files***

An RDT file captures a snapshot of a project in the CORE Enterprise repository—the state of that project at a given moment in time. A set of RDT files (one per project) can capture the state of the entire repository. To restore the repository to that state, follow these steps:

1. Using one of the techniques described above, back up the current state of the repository, in case you should later wish to return to it.

2. Make sure all users are logged out. Then stop the COREStone service using the menu command for that purpose on the server.

<b>Caution</b>
----------------

When performing the following step, all data in the repository at that time will be lost.
---

3. Remove or erase the repository EXTENT0.DBF from the extent location determined during server installation, C:\CORERepository by default
4. Copy the file ExtentForImport.DBF from the COREServer\backup directory into the above location (e.g., C:\CORERepository) and rename it EXTENT0.DBF.
5. You must start a fresh set of transaction logs to go with the new repository. Remove all existing transaction logs from the directory specified for them during server installation, C:\CORELogs by default.
6. Restart the COREStone service using the menu command for that purpose on the server.
7. Set the new repository to the correct time zone. To do this, look in the COREServer\scripts directory and double click on TimeZone.Bat. (The file TimeZone.Script should have been edited during server installation to reflect the local time zone.)
8. Start a CORE Enterprise client that has been configured to use this server and has access to the RDT files to be restored. The client can run anywhere on the network, but for this type of bulk operation, you will almost certainly want to run it on the server machine itself for performance reasons.
9. Use the client to create a project for each RDT file to be imported. Ideally, each project should be named the same as the project from which the corresponding RDT file was exported.
10. If an RDT file requires any schema changes, then first use the client to import the corresponding SCH file into the appropriate project.
11. Finally, use the client to import the RDT files into the proper projects.

### *Recovery from a File System Backup*

To recover your extent from a file system backup (e.g., an archival copy on tape), follow these steps.

1. Using one of the techniques described above, back up the current state of the repository, in case you should later wish to return to it.
2. Make sure all users are logged out. Then stop the COREStone service using the menu command for that purpose on the server.

<b>Caution</b>
----------------

When performing the following step, all data in the repository at that time will be lost.
---

3. Remove or erase the repository EXTENT0.DBF from the extent location determined during server installation, C:\CORERepository by default
4. If your server is operating in partial logging mode, then you must delete all transaction logs from the transaction log directory specified during installation, C:\CORELogs by default.

**Note**

If your server is operating in full logging mode but the extent you are restoring is not an earlier version of the extent you just removed, then you must also remove all transaction logs associated with the removed extent. These transaction logs cannot be used with the extent you wish to restore.

**Note**

If your server is operating in full logging mode and you are restoring an earlier version of the same extent, then you should leave the existing transaction logs in the transaction log directory, although any that are older than the backup extent will not be relevant.

5. Obtain an archival copy of the extent to be restored.
6. You can “replay” transaction logs made in full logging mode to “roll forward” the backup extent and bring it up to date. If you wish to do this, then also obtain archival copies of any transaction logs made in full logging mode that were subsequently used with that extent—all those created and/or modified after the extent backup was made. This may include the last transaction log created *before* the backup if that transaction log continued to be modified after the backup was made. If the sequence of transaction logs is broken, you will only be able to restore data through the last contiguous log file. For example, if you obtain an extent backup made a month ago, the transaction logs you need might be spread across the same backup tape as the extent and the subsequent four weekly backup tapes. Note that some or all of the transaction logs you need might actually still be in the transaction log directory.

**Note**

You cannot replay transaction logs made by the server in partial logging mode, which is the default operating mode.

7. Use the backup tool that created the archival copy of the extent to restore it into the above extent location, and ensure that it is named EXTENT0.DBF.
8. Note the date and time at which the restored extent was last modified. Now restore into the above transaction log location all transaction logs made in full logging mode that were used with the restored extent after it was backed up. This may include the last transaction log created before the backup. Some or all of the required transaction logs may already be in the transaction log directory.

**Note**

Do not restore transaction logs made by the server in partial logging mode.

9. Execute the script RestoreFileSystemBackup.Bat in the COREServer\scripts directory. This will restart the server in restore mode and, if possible, will replay the transaction logs to bring the old extent up to date.
10. The results are stored in a file named RestoreFileSystemBackup.Out within the COREServer\logs directory. Ensure that both statements in this file gave a result of “true”.
12. If the recovery was successful, you are now ready for users to log in and resume normal operations. To ensure that future recoveries are possible should another disaster occur, please make a backup of the present state of your extent as soon as possible.

## *Recovery from a Hot Backup*

To recover your extent from a hot backup, follow these steps:

1. Using one of the techniques described above, back up the current state of the repository, in case you should later wish to return to it.
2. Make sure all users are logged out. Then stop the COREStone service using the menu command for that purpose on the server.

<b>Caution</b>
When performing the following step, all data in the repository at that time will be lost.

3. Remove or erase the repository EXTENT0.DBF from the extent location determined during server installation, C:\CORERepository by default
4. If your server is operating in partial logging mode, then you must delete all transaction logs from the transaction log directory specified during installation, C:\CORELogs by default.

<b>Note</b>
If your server is operating in full logging mode but the extent you are restoring is not an earlier version of the extent you just removed, then you must also remove all transaction logs associated with the removed extent. These transaction logs cannot be used with the extent you wish to restore.

<b>Note</b>
If your server is operating in full logging mode and you are restoring an earlier version of the same extent, then you should leave the existing transaction logs in the transaction log directory, although any that are older than the backup extent will not be relevant.

5. Obtain an archival copy of the hot backup file to be restored. Unless you have taken explicit steps to archive and remove them, hot backup files from the past week can be found in the location specified for them during installation, C:\COREBackups by default. To view the location under Windows NT, go to *Start > Settings > Control Panel > System > Environment* and inspect the value of the “COREBackups” variable. (Under Windows 2000, go to *Start > Settings > Control Panel > System >*

*Advanced > Environment Variables.*) Backup filenames are based on their creation date and time in YYMMDDhhmm format.

6. You can “replay” transaction logs made in full logging mode to “roll forward” the restored extent and bring it up to date. If you wish to do this, then also obtain archival copies of any transaction logs made in full logging mode that were subsequently used with the extent that generated the hot backup file—all those created and/or modified after the hot backup was made. This may include the last transaction log created *before* the backup if that transaction log continued to be modified after the backup was made. If the sequence of transaction logs is broken, you will only be able to restore data through the last contiguous log file. For example, if you obtain a hot backup file made a month ago, the transaction logs you need might be spread across the same backup tape as the extent and the subsequent four weekly backup tapes. Note that some or all of the transaction logs you need might actually still be in the transaction log directory.

<b>Note</b>
-------------

You cannot replay transaction logs made by the server in partial logging mode, which is the default operating mode.
---

7. Copy the hot backup file to be restored into the COREBackups directory. This is the same directory where it was originally created, so unless you explicitly removed it, no action is required here. To view or modify the location under Windows NT, go to *Start > Settings > Control Panel > System > Environment* and inspect the value of the “COREBackups” variable. (Under Windows 2000, go to *Start > Settings > Control Panel > System > Advanced > Environment Variables.*)
8. Rename the hot backup file you wish to restore EXTENT0.DBF.
9. Note the date and time at which the hot backup file was last modified. Now restore into the above transaction log location all transaction logs made in full logging mode that were used with the restored extent after it was backed up. This may include the last transaction log created before the backup. Some or all of the required transaction logs may already be in the transaction log directory.

<b>Note</b>
-------------

Do not restore transaction logs made by the server in partial logging mode.
---

10. Obtain a copy of a clean extent file. One is stored in the BACKUP subdirectory of the CORE Enterprise Server root program files location, C:\COREServer\backup by default. It has a file size of 8,388,608 bytes. Copy this clean extent file into the extent location determined during server installation—the same one from which the existing extent file was removed in step (3).
11. If the server is operating in partial logging mode, the default, execute the script RestoreWithPartialLogging.Bat in the COREServer\scripts

directory. If the server is operating in full logging mode, execute `RestoreHotBackup.Bat`.

12. The results are stored in a file named `RestoreWithPartialLogging.Out` or `RestoreHotBackup.Out` (depending on the script used in the previous step) within the `COREServer\logs` directory. Ensure that all statements in this file returned successful results.

If the recovery was successful, you are now ready for users to log in and resume normal operations. To ensure that future recoveries are possible should another disaster occur, please make a backup of the present state of your extent as soon as possible.



## 5 Managing User Accounts

Users with administration privileges can access the User/Group Manager and have full privileges in the CORE User Monitor through the *CORE Control Panel* > *Utilities* > *User/Group Tool* command (and *User Monitor* command) shown in Figure 5-1. These tools regulate user access to the system. In the event of a problem, the CORE User Monitor aids the administrator in determining which users are still logged on, and whether an account is still active.

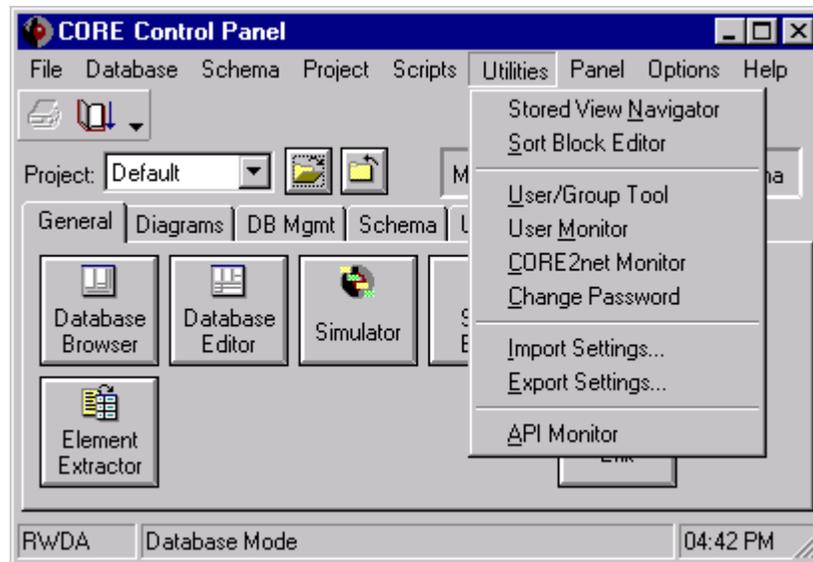


Figure 5-1 CORE Control Panel Utilities Menu

### *User/Group Manager*

The *User/Group Manager* (Figure 5-2) is used to create, delete, and set the attributes of user accounts in terms of access and permissions. (Refer to Chapters 4 and 24 of the *CORE Workstation User Reference Guide*.) The User/Group Manager functions the same as in the CORE Workstation version. It allows an administrator to set the user privileges and group permissions. However there is one difference to note in the CORE Enterprise version. It is possible for an administrator to delete a user using the User/Group Manager tool while that user

is logged in. Although removed from the CORE registry, the user can continue working in CORE until logging out. After logout, the user will not be able to log in again. If necessary, the administrator can delete the user from the registry and then proceed to stop the session using the CORE User Monitor tool. This will effectively terminate the user session.

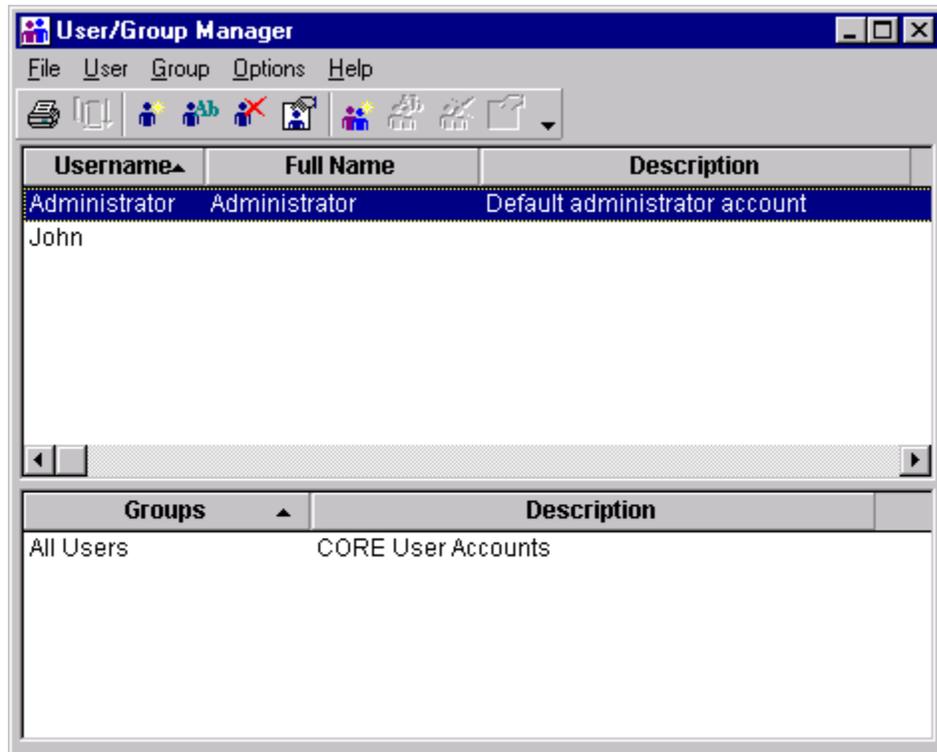


Figure 5-2 User/Group Manager Window

### ***CORE User Monitor***

The CORE User Monitor window displays logged-in users and what projects they have open (see Figure 5-3). All users can access the CORE User Monitor window and have the ability to send messages or request other users to close a project. The administrator can send users an instant message, request a user to close a project, request a user to logout, forcibly close a user out of a project, or forcibly close the user's session altogether. The User Monitor Tool consists of four areas: pull-down menus (File, Sessions, Project, and Options), User Monitor toolbar, Active Users pane, and Open Projects pane. The active user list contains the following items:

- User name,
- S/N: Serial number of the session,
- PID: the process identifier of the client application running on the NT server,
- IP address of the user's computer,

- Oldest CR: the oldest commit record i.e. notification of activity on the server.

The Administrator in case of problems can use these pieces of information. For example, a client that is no longer responding to the server will appear with “true” in the Oldest CR column. The IP address and/or the User Name can identify a session. The process identifier can be used to determine how much memory a particular client process is using on the server.

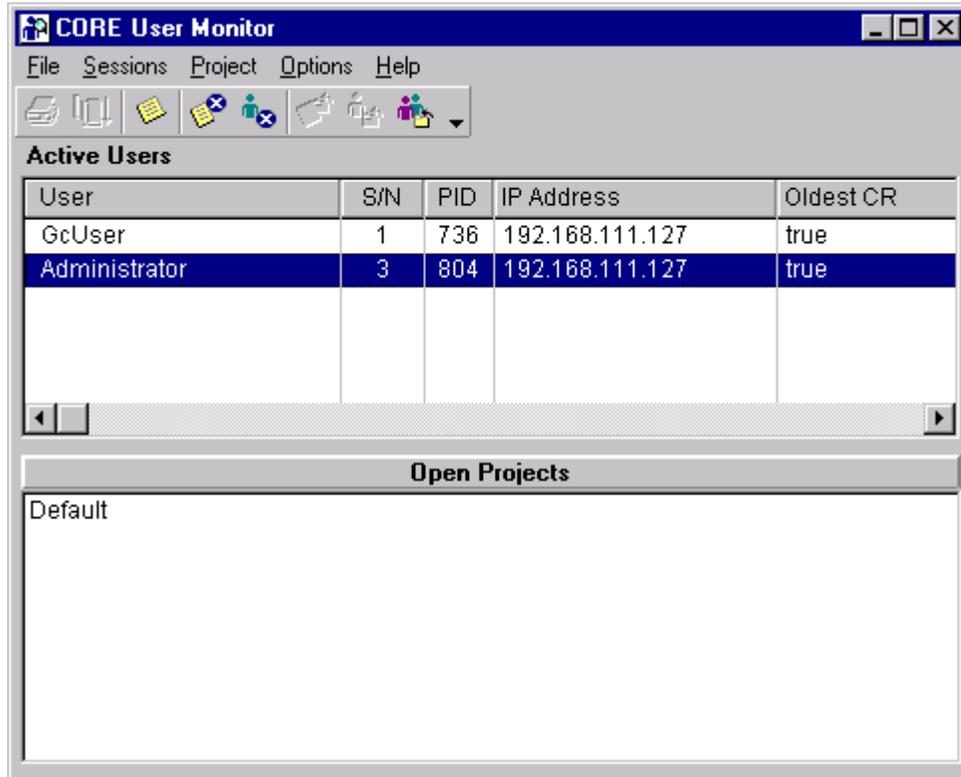
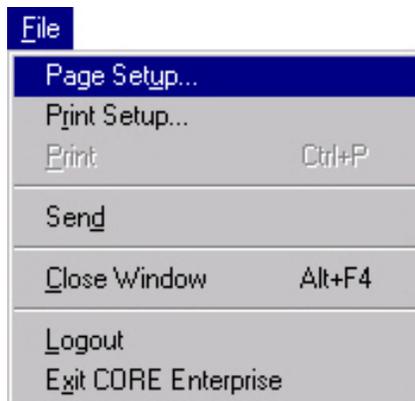


Figure 5-3 CORE User Monitor Window

## File Menu



The File pull-down menu commands are discussed in the *CORE Workstation User Reference Guide*.

## Sessions Menu

A session refers to the connection to the application server for a particular user. The Sessions menu illustrated in Figure 5-4 includes commands to regulate user activity including *Send Message*, *Request Logout*, *Force Logout*, *Stop Session*, *Logout All Sessions*, *Enable Logins*, and *CORE2net Monitor*.



**Figure 5-4 CORE User Monitor Sessions Pull-down Menu**

### Send Message

The Send Message command sends an instant message to a user. The message command can be used for a variety of purposes including providing server information or coordinating activities in projects.

### Request Logout

The Request Logout command sends a message to the selected user to logout. (The user may choose to ignore the request.)

### Force Logout

The Force Logout command logs a user out of CORE. The CORE Login screen appears for the user to exit CORE or log back in. This feature is only available to users with administrator privileges.

### Stop Session

The Stop Session command immediately ends a user's CORE session. This differs from the Force Logout command in that it not only logs the user out of CORE, but also forces the client application of the selected user(s) to quit. Occasionally, a session will stop responding to the system. These are called "hung" sessions. Such sessions will not respond to the Force Logout command, and the Stop Session command must be used to end the session. There may also be cases in which the session of an administrative, non-CORE user (i.e. GcUser) needs to be stopped, for example, if the administrator wants to suspend all logins during extended periods of administration. The Stop Session command should be

used to stop these sessions. This feature is only available to users with administrator privileges.

### **Enable Logins**

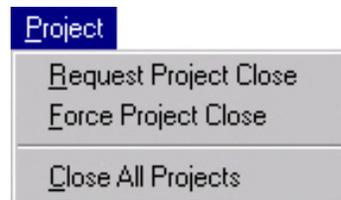
The Enable Logins command toggles to either allows authorized users to log in to CORE (when checked) or prevent any users from logging in to CORE (when unchecked). This command is used (Enable Logins – unchecked) during periods of extended administration such as modifying multiple schemas or performing bulk data imports to prevent users from logging in to CORE while such tasks are being performed. Once all tasks are complete, the Enable Logins – checked command is used to allow authorized users the ability to log back in to CORE. This feature is only available to users with administrator privileges.

### **CORE2net Monitor**

This command opens a window that allows a user to monitor and administer the CORE2net features. These features provide CORE database access via web browsers. This feature is only available to users with administrator privileges. See chapter 7 for more information on CORE2net.

## **Projects**

The Project menu shown in Figure 5-5 includes commands to regulate user activity in a specific project or all projects including Request Project Close, Force Project Close, and Close All Projects.



**Figure 5-5 CORE User Monitor Project Pull-down Menu**

There are several operations in CORE Enterprise that require that only one user be logged in to a project at any given time. These operations include switching to schema mode, erasing the database and erasing the database history. The following commands can be used to ensure that only one user is present in a project during these events. These commands do not end the user's session, but do closeout all windows for the specified project(s).

### **Request Project Close**

The Request Project Close command sends a message to a user asking them to close a particular project, (which the user can choose to ignore).

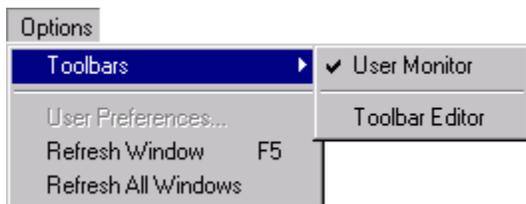
### Force Project Close

The Force Project Close command closes a user out of a project, but does not end their CORE session altogether. This feature is only available to users with administrator privileges.

### Close All Projects

The Close All Projects command closes all of the projects open for the selected user(s). If more than one user is selected in the Active Users list (by clicking and dragging with the left mouse button), a combined list of all of the projects those users have open appears in the Open Projects window. Selecting the Close All command will close all of those projects. This feature is only available to users with administrator privileges.

### Options Menu



The Options pull-down menu commands are discussed in the *CORE Workstation User Reference Guide*.



## 6 Operational Differences

In general, CORE Enterprise users can follow the basic *CORE Workstation User Reference Guide* except for a few differences noted in this addendum. The areas of change include *edit locks*, *accessing the Schema Extender*, *automatic view updates*, *saving an image*, and *deleting projects*.

### *Edit Locks*

Having multiple users in a system requires some control on who is changing data at a single point in time. If two people try to edit the same data at the same time, one change will happen and the other may not, or the users may not be basing their edits upon the most current state of the database. To solve this problem, CORE requires that you have an element edit locked in order to make changes to it. When you create an element, it is automatically edit locked to you until you release it. No one else can edit the attributes of that element until you release your edit lock.

Figure 6-1 highlights three areas: the *Edit Lock the Selected Elements* icon, the *Name*, *Number*, and *Description* area, and the *Status* area. When Edit Lock is not set, the areas are grayed-out – not editable.

Figure 6-2 shows the same three areas with Edit Lock set. The element “*Deficiencies*” in Figure 6-2 was *edit-locked* on 10/13/2000 by the user Administrator.

There are several different ways in which elements can be edit locked. The first way, mentioned above, occurs automatically when you create a new element. When you import a database into a project, all of the elements in the project are automatically edit locked to the user who imported them, since an import is similar to a batch creation process.

<b>Note</b>
All user locks are automatically released when the user logs out of CORE.

Figure 6-3 shows the Database Editor > Locks pull-down menu commands: *Toggle Edit Lock*, *Set Edit Lock*, *Release Edit Lock*, and *Terminate Edit Lock*.

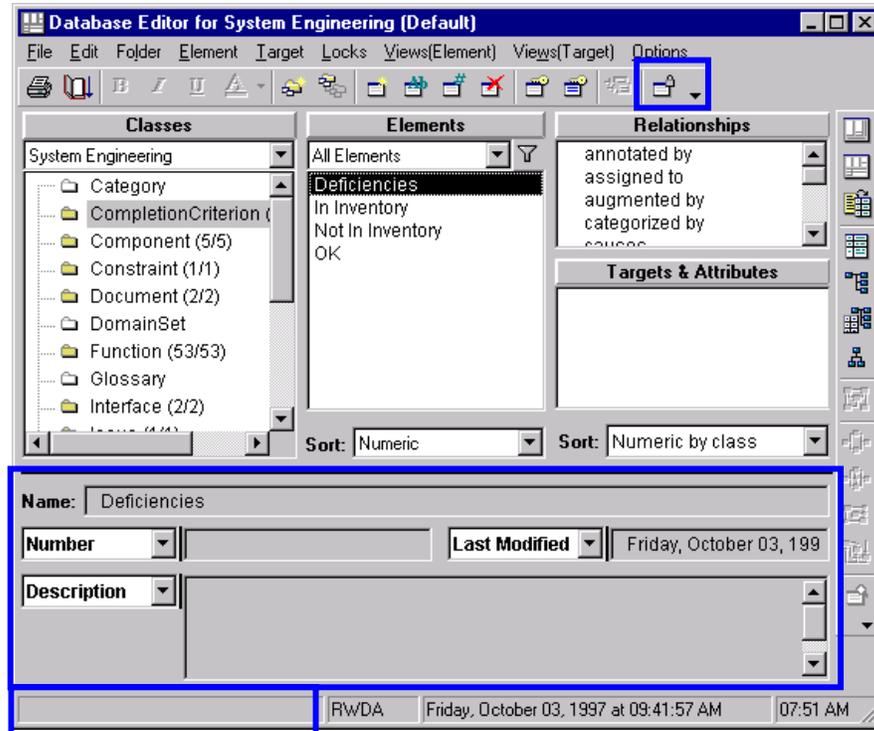


Figure 6-1 Edit Lock Status “Cleared” Window

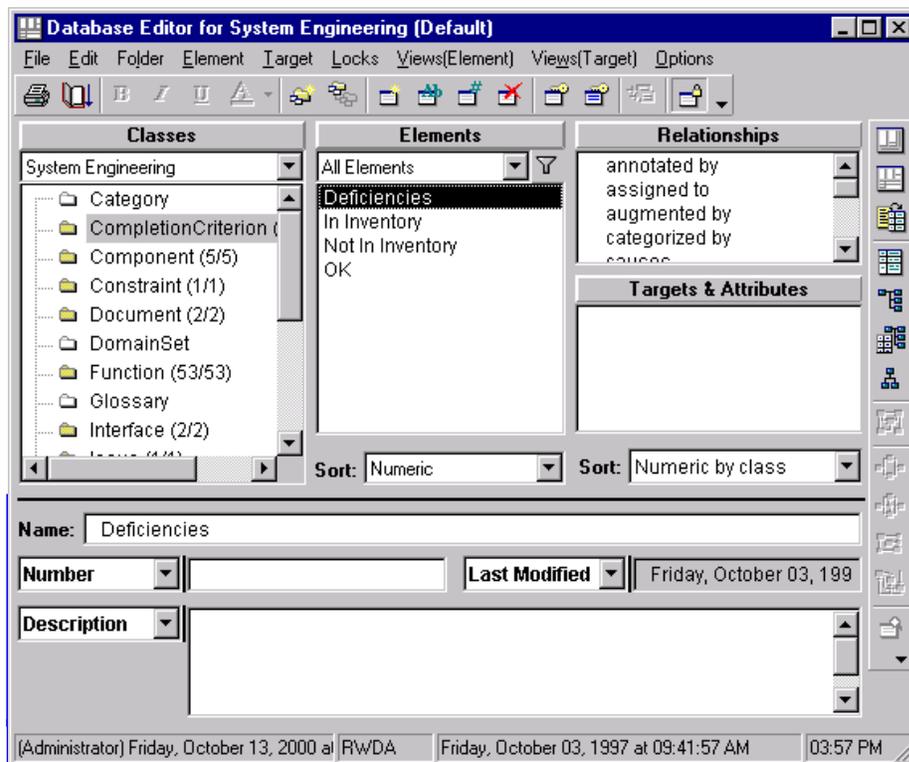


Figure 6-2 Edit Lock Status “Set” Window

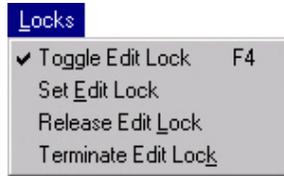


Figure 6-3 Locks Pull-down Menu

## Toggle Edit Lock (F4)

The command Toggle Edit Lock sets the edit lock if it is not already set, and releases the edit lock if it is set.

## Set Edit Lock

The command Set Edit Lock turns the edit lock on for the element selected, allowing you to edit the element (and preventing other users from doing so).

## Release Edit Lock

The command Release Edit Lock turns your edit lock off so that another user can lock and edit the element.

## Terminate Edit Lock

If you are logged into a CORE user account, which has administrative privileges, this command enables you to break an edit lock held by another user. This should be used with caution and only when necessary, as it may result in a loss data by the other user (at most, any changes to the field where the user was typing when you broke the lock). The CORE User Monitor tool allows you to forward a message to the user to notify them of the impending action.

Changes to an element, its attributes, or its structures (i.e. FFBDs) cannot be made without first locking the element. This includes renaming or deleting an element. However, neither the addition/removal of targets nor the editing of relationship attributes requires an edit lock.

Because of the necessity of locking/unlocking elements the *Toggle Edit Lock*, *Set Edit Lock*, *Release Edit Lock*, and *Terminate Edit Lock* commands have been added to many views in CORE. This applies to diagrams as well. For example, to open a diagram on an element and make any modifications to the diagram, any elements within the diagram that you wish to edit must be edit locked by you. Right clicking on an element in a diagram to open the shortcut menu and setting the edit lock on the element can accomplish this.

Multiple elements can be edit locked on a diagram by highlighting a selection of elements by selecting the first element, then holding the Shift key while selecting additional elements. Once all elements are selected, use the Locks pull-down menu to *Toggle Edit Lock*, *Set Edit Lock*, *Release Edit Lock*, or *Terminate Edit Lock*. See Figure 6-4.

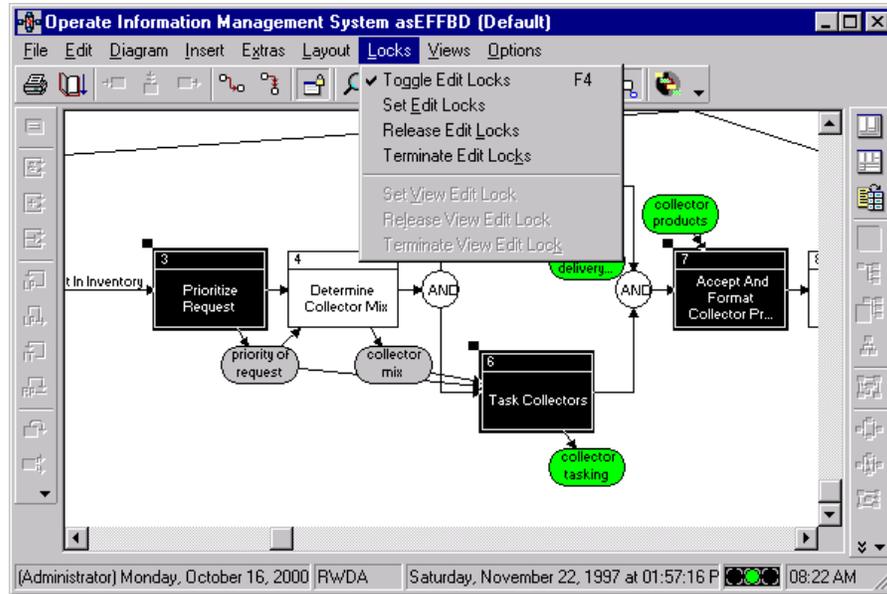


Figure 6-4 Multiple Element Select Window

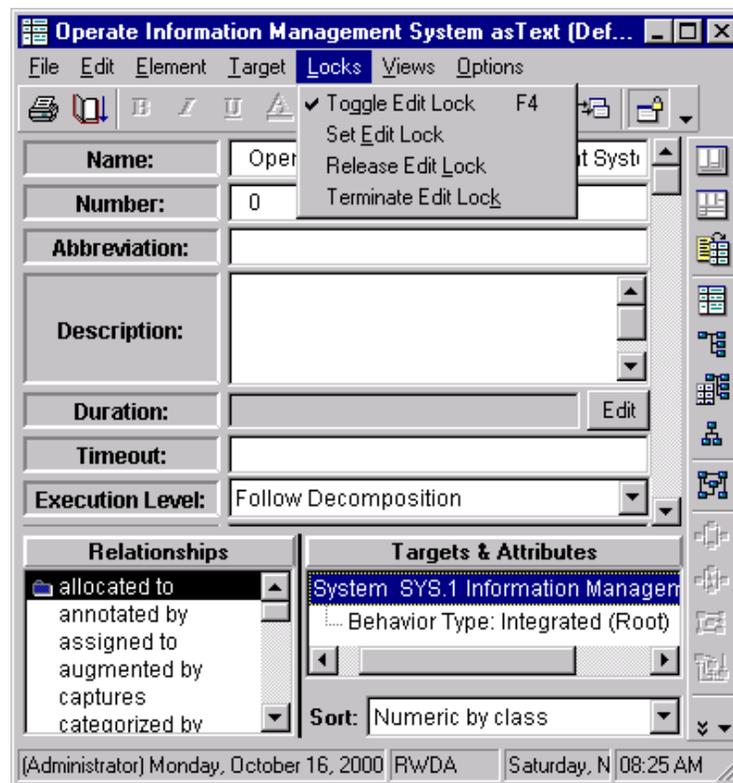


Figure 6-5 Text View Edit Lock Menu

Elements can be locked in a text view. The Edit lock menu on the text view (shown in Figure 6-5) contains the same commands as that of the element menu on the Database Browser and Editor (Figure 6-3).

## *Accessing the Schema Extender*

In CORE Enterprise, only one user (with schema privileges) can access the schema extender for a given project at a time. All other users must be logged out of the project. In order to see who is logged in to a project, a user can access the CORE User Monitor and view current user sessions and the projects they have open. Users are registered in the user monitor after they log in and open a project. They become unregistered when they close the project or exit the application.

## *View Updates*

View updates are an essential part of CORE. The views remain consistent with each change to the data and reflect the true state of the database. View updates are received from users as soon as a change is made, (e.g., modifying the number for an element will update an open text view of the element, update a diagram on which the element is displayed, etc.). Each client periodically (every few seconds) checks for pending updates and refreshes automatically as appropriate.

## *Saving an Image*

You may notice that CORE Enterprise does not have an option to save an image. That is because with every action that a user makes, a commit is sent immediately to the database. Therefore, even if an image crashes, all data is still intact. Because of this, CORE Enterprise also does not require a Recovery Log.

## *Managing Projects*

As in the CORE Workstation version, users must have project privileges to create a new project. This can be done from the Project Editor. Projects can also be deleted using the project editor. Of special note in CORE Enterprise, in order to delete a project from a system, no users may be logged into that project, including the user who is deleting the project.

## **Creating Projects**

Creating a project will happen much quicker on the server than on a client machine. Therefore, it is recommended that projects be created from a client running on the server (or a client machine with a very high bandwidth network connection to the server), especially if you are working concurrently with other users, since their processing speed will be affected.

## **Import Settings**

The Import Settings command allows you to load a settings file previously exported from CORE into your project. This allows the user to establish all of the desired settings (including sort block definitions, hierarchy definitions, and user preferences) and either use them in new projects or share them with other sites.



Figure 6-6 Import Settings Complete Window

## Export Settings

Remember that when you export settings, the following dialog appears (Figure 6-7) to choose the categories of settings to include in the file. One or more categories can be selected.



Figure 6-7 Export Settings Dialog Window

In order to import the settings file, CORE presents you with a standard dialog to select an *stg* (settings) file to open. All settings in the *stg* file are then integrated into the project.



Figure 6-8 Export Settings Complete Window

In CORE Enterprise, if you are importing a “settings” file that contains sort block definitions or hierarchy definitions, you must be logged in as Administrator, and be the only person logged in to the project. Otherwise, you will receive a message saying that you do not have sufficient privileges to import sort blocks or hierarchy definitions. However, the user preferences in the file will still be imported. If the file contains only user preferences, you can import it any time.

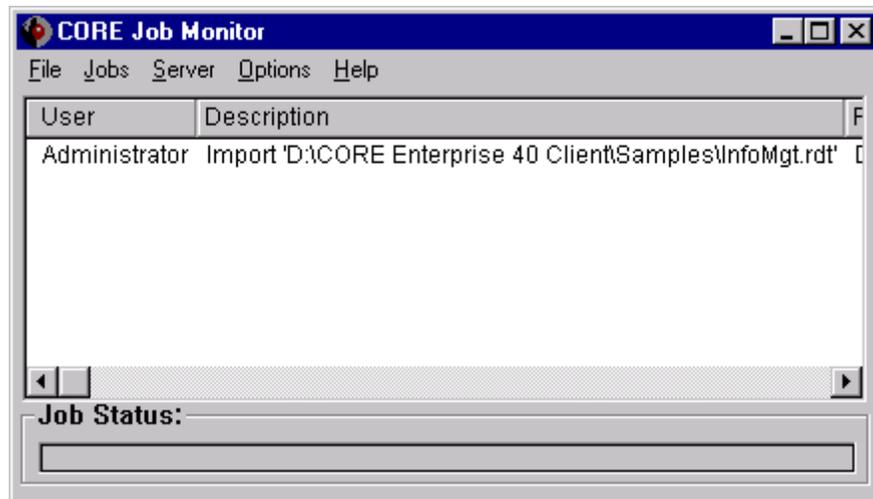
**Note**

Where appropriate, CORE will merge settings upon import (e.g., hierarchy definitions and sort block definitions). However, in most cases, the values in the exported settings file will override any existing settings upon import. Therefore, if you are sharing your settings with a team member, ensure that you export only those settings that are desired.

## Importing Databases

Under CORE Enterprise, database imports are automatically submitted to the server to be performed remotely. When a database file has been selected for import, a job will be submitted to the server. A notification message will be displayed when the job is complete.

## Job Monitor



**Figure 6-9 Job Monitor**

The Job Monitor window displays the list of import jobs at the Job Server. The Job Monitor is automatically opened within the Enterprise Client when a database import is started. The monitor can also be opened via the Utilities > Job Monitor command within the CORE Control Panel. When opened by a standard CORE user, the Job Monitor displays only the jobs owned by that user account. When opened by an administrator account, all jobs from all users are displayed. The Administrator account has full control over all jobs. The list can include jobs in one of three states:

1. **Waiting** – The job is waiting to be executed.
2. **Running** – The job is currently executing.
3. **Finished** – The job has finished execution.

The following describes the columns of the Job Monitor list:

- **User** – The account name of the user who submitted the job.

- **Description** – A prefix indicating the job type and the path to the file being imported.
- **Project** – The target project of the import.
- **Status** – The state of the job (Waiting, Running, or Finished).
- **Submitted** – The date and time at which the job was submitted.
- **Started** – The date and time at which the server started running the job.
- **Completed** – The date and time at which the job was completed.
- **Owner SN** – The session serial number of the process that submitted the job.
- **Operator SN** – The session serial number of the process running the job.

### Jobs Menu

The following commands are available on the Job Monitor's "Job" menu:

- **Review Conflict File** – Allows the user to view the conflict file resulting from conflicts encountered during the import job. As jobs are performed on the server, conflict files are created on the server if necessary. When this command is selected, the conflict file is copied to the directory in which the import file resides on the client machine. A copy of the conflict file will remain in the Enterprise Server's temp directory (C:\COREServer\temp by default) until the job is purged from the server or the server is restarted.
- **Purge Waiting Job** – Removes the selected job from the Job Server's waiting queue.
- **Purge Finished Job** – Removes the selected job from the Job Server's finished queue.
- **Purge Defunct Job** – Allows the user to remove jobs that finish abnormally.

### Server Menu

The following command is available on the Job Monitor's "Server" menu:

- **Start Job Server** – Allows an administrator account to start/stop the Job Server. The Job Server must be running to permit all CORE Enterprise database imports. The Job Server is automatically started after the CORE Enterprise Server is installed.



## 7 CORE2net

A separately licensed component of the CORE Enterprise Server, CORE2net functions as a Web server providing access to information and models contained in the CORE database. CORE2net users require only appropriate access permissions and an Internet browser. CORE2net is a “CORE viewer” that does not require any special software to be installed on the user’s computer.

### *Licensing the CORE2net Server*

Ensure that the CORE Enterprise Server has been properly installed and configured. See *Appendix B* (Windows NT) or *Appendix C* (Windows 2000) for more information on installing the CORE Enterprise Server, or see *Appendix F* if you are upgrading from a previous version.

### Generate License Request

Note
Only run the <i>License Request Editor</i> once. All CORE licenses including <i>CORELIC2.DAT</i> and <i>REGISTRY.DBX</i> files you receive from Vitech will be invalidated if you generate a subsequent license request on the same computer. If you have previously generated a request on the computer running the CORE Enterprise Server, send in the same request (again) along with the information specified by number 6 below.

1. Open *Start > Programs > CORE Enterprise 4.0 Server > Utilities > License Request*. In the *License Request Editor*,
2. Choose the *File > Generate* menu command.
3. Enter your name or customer name in the *User Information* dialog.
4. Enter the serial number found on the back of the CORE CD case and click on the *OK* button.
5. Choose the *File > Save As* menu command in the *License Request Editor* and specify a file location.
6. Send an email to [support@vtcorp.com](mailto:support@vtcorp.com) with the following information.
  - Manufacturer of the computer on which the NLM is installed.
  - Model of the computer on which the NLM is installed.

- Serial number of the computer on which the NLM is installed.
- The license request file generated above (as an attachment).

Vitech will reply with a CORELIC2.DAT file. Place this file in the *COREServer\HTTP\bin* installation directory (*C:\COREServer\HTTP\bin* by default).

## Starting the CORE2net Server

Once CORE2net has been licensed, the CORE2net Server must be started. This is done from the *CORE2net Monitor*, which is accessible via the *Utilities* menu on the *CORE Control Panel*. Access to the *CORE2net Monitor* is restricted to users with administration privileges.

**Note**

Because the CORE2net Server functions as a Web service, port 80 is used by default to communicate with client Web applications. Other Web services such as the *World Wide Web Publishing Service* installed with Windows 2000 Server also use port 80 by default. Before the CORE2net Server is started, ensure that no other Web service is running on the computer also running the CORE Enterprise Server.

If another Web service must run on the computer also running the CORE Enterprise Server, the default port number used by the CORE2net Server can be set via the *HTTP Port* field on the *Settings* tab of the *CORE2net Monitor*. If this setting is changed, the URL used by client applications to access the CORE2net Server must contain the specified port number (e.g. <http://192.16.11.10:5000> where 5000 is the new port number).

To start the server, select the *Start CORE2net Server* command on the *Server* menu in the *CORE2net Monitor* (See Figure 7-1).

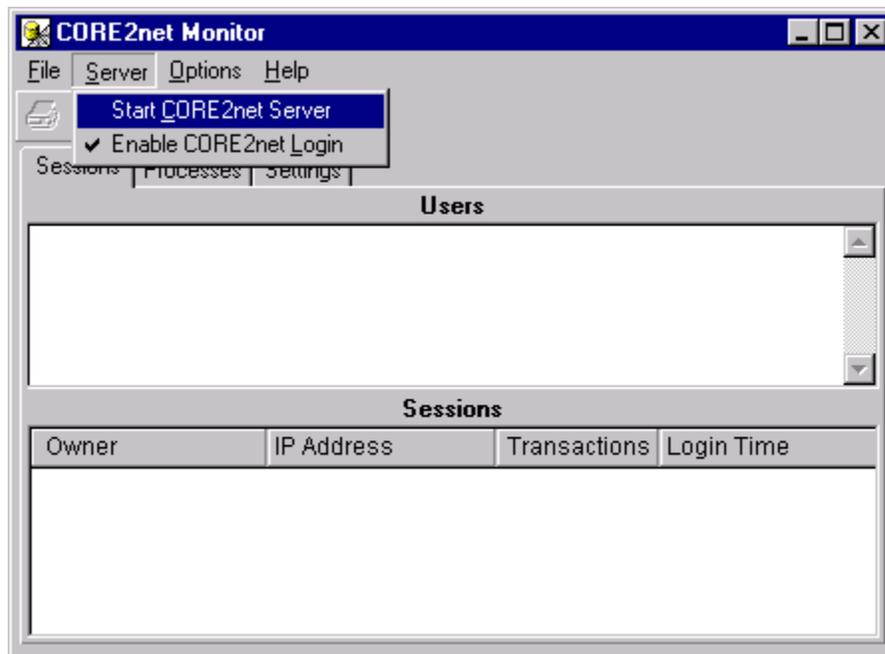


Figure 7-1 CORE2net Monitor

Verify that the CORE2net Server has successfully started by opening the *User Monitor*, which is accessible via the *Utilities* menu on the *CORE Control Panel*. The CORE2net Server may take several seconds to start. The *User Monitor* should display the HTTPCommServerUser account and the HTTPAppServerUser account within the *Active Users* list (see Figure 7-2).

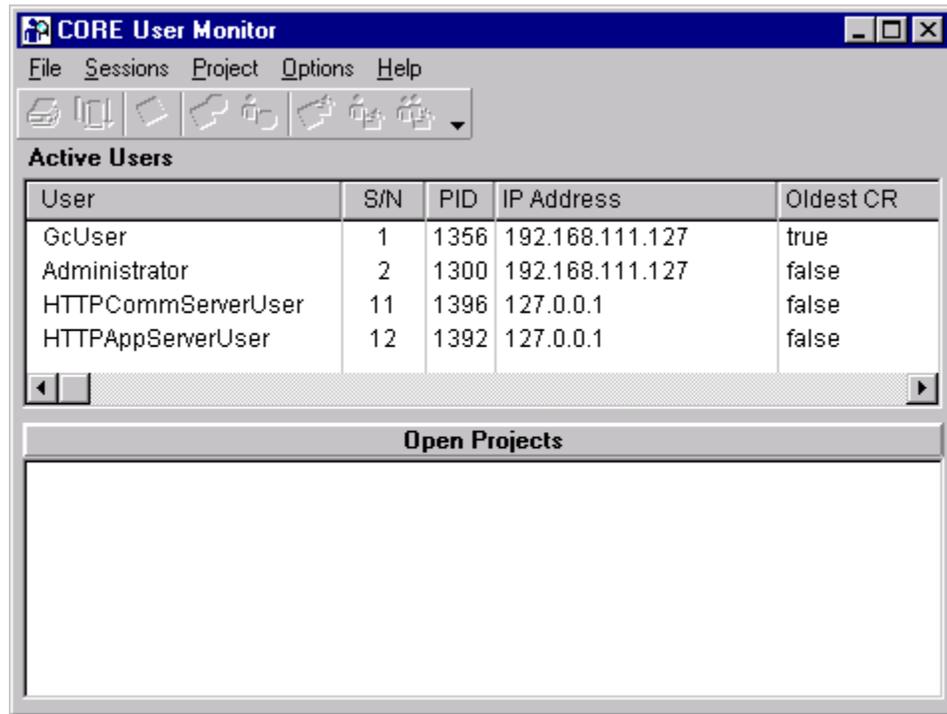


Figure 7-2 User Monitor

## *Give Users Web Access Privilege*

After the CORE2net Server has been started successfully, all users with web access privileges can login to CORE2net. To enable or disable a user's web access privilege, toggle the privilege within the *User Properties* settings accessible from the *User/Group Manager* (See Figure 7-3).



Figure 7-3 User Properties

## Using CORE2net

### Login

To access CORE2net, simply point either Microsoft Internet Explorer (version 4.0 or later) or Netscape Navigator (version 4.75 or later) to the computer running the CORE Enterprise Server. A user with the web access privilege enabled can then login using his/her existing CORE account name and password.

### Homepage

A successful CORE2net login results with the homepage, which contains a listing of the available projects. The project list is also available on the Projects menu, which is located at the top-left of the page below the CORE2net banner.

Selecting a project from either the Projects menu or the list on the homepage sets the selected project as the target of all subsequent queries until a different project is selected. The result of selecting a project is the list of queries that can be submitted against the selected project. The name of the currently selected project is displayed at the top-right corner of the page below the CORE2net banner.

## Queries

The Queries provide dynamic access to information in the CORE database. The Queries menu, which is located at the top-left corner of the page below the CORE2net banner, presents the list of available queries. Selecting a query from the Queries menu provides real-time access to the CORE Enterprise Server database.

Note
Once a CORE2net Query is viewed in a Web browser, the browser will locally cache the page(s) viewed. The browser will then display the locally cached page(s) for all subsequent requests to those pages. The browser will <i>not</i> automatically submit a new request to the CORE2net Server to retrieve the most recent information once a page has been locally cached. To retrieve the latest, updated information from the CORE Enterprise database, use the browser's <i>Refresh</i> command to refresh the currently active page.

## Logout

To logout of CORE2net, select the *Logout* link on the top-left corner of the CORE2net banner. It is important for users to logout because CORE2net limits the number of concurrent user sessions based on the CORE2net license. Logging out of CORE2net after the end of a session will decrement the concurrent users count allowing additional users to login. CORE2net will automatically logout inactive sessions, which exceed the number of minutes specified by the *Session Time Out* setting accessible via the *Settings* pane on the *CORE2net Monitor*.





## **A. Installation Preparation**

The following appendix will detail how to perform a server and client installation of CORE Enterprise. Readers using this appendix to perform server installations must have network and server administration experience. Common administration tasks are not described in detail.

The appendices are:

- Appendix A – Server Installation Preparation,
- Appendix B – Windows NT Install and Uninstall Procedures,
- Appendix C – Windows 2000 Install and Uninstall Procedures,
- Appendix D – Client Install and Uninstall Procedures,
- Appendix E – Disaster Prevention and Recovery, and
- Appendix F – Upgrading from Previous Versions.

### ***Server Installation Preparation***

#### **Server Installation Worksheet**

Vitech technical staff will assist you in the server installation of CORE Enterprise. Complete the following worksheet before your scheduled installation.

The following is a CORE Enterprise pre-installation checklist worksheet. This worksheet contains information that will help you identify what hardware and software need to be in place for CORE Enterprise installation. This worksheet needs to be completed with the help of a Systems Administrator and/or a Network Administrator. Please answer the questions and return them to Vitech at least three business days before the planned start of the installation.

**Table A-1 CORE 4.0 Enterprise Installation Worksheet**

<b>General</b>			
Who is the CORE point of contact that will be working with Vitech during the installation?			
Who is the technical point of contact that will be working with Vitech during the installation?			
<b>Network</b>			
What type of network (e.g., Ethernet, Token Ring, etc.)?			
What is the speed of the network backbone, network interface cards, switches, hubs, etc. (e.g., 100 Mbps)?			
What other applications will run on this CORE Enterprise server and how many users do they serve?			
<b>Server</b>			
What is the make of the server?			
What is the model of the server?			
How much RAM?			
<i>How many CPUs &amp; speed of each</i>			
Number of CPUs		CPU Speed	
<i>How many physical hard drives (list a RAID array as a single disk) and partitions (e.g., C:, D:, etc.)</i>			
Disk 0 Partitions			
Disk 1 Partitions			
Disk 2 Partitions			
Disk 3 Partitions			
Disk 4 Partitions			
<b>Partition information</b>			
C: Size	C: Free Space	C: Paging File Size	C: Format
D: Size	D: Free Space	D: Paging File Size	D: Format
<b>Operating system and server configuration</b>			
What operating system is installed on the server (including patches)?			
Do you have a backup mechanism for this server (if yes, what is it)?			
Is a CD drive accessible?			
Is this server on the corporate LAN or an isolated network?			
Is TCP/IP configured on this server?			
What is this server's IP address?			
Is this server listed by a Domain Name Server (if so, what is the symbolic IP name of this server)?			
If you are running Novell NetWare, are you running the Novix IP stack?			
Will clients connect to this Enterprise server remotely (if yes, by what method)?			
Is this server a Primary Domain Controller or Backup Domain Controller?			
Is the Schedule or Task Scheduler service running on this server?			
<b>CORE Questions</b>			
What licensing mechanism are you going to use (Network License Manager, node-locked, or floppy key)?			
How many total CORE Enterprise licenses are you planning to use?			
On which workstations do you intend to install CORE Enterprise client software?			

## CORE Users Worksheet

During the installation, we will show you how to use CORE to create a user and apply the appropriate permissions. In order for us to do this, you should compile a list of CORE user IDs (length of at least 3 characters) and passwords (length of at least 5 characters and not the same as the name). You will want to retain a copy of the original IDs and passwords in case you need to recreate accounts in the future or on other servers so that permissions can be restored easily. You should also plan a hierarchy of groups and users and know which access control entities should receive the following privileges: System Administration, Project Creation, and Web Access. For a definition of each of these privileges, consult the *CORE Workstation Users Manual* and Chapter 7 of this document. A sample user worksheet is provided.

**Table A-2 CORE 4.0 User Worksheet**

User ID	Password	Full Name	Description	Groups	Privileges		
					System Admin	Project Creation	Web Access

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## B. Windows NT

### *Installing CORE Enterprise Server*

Use this section as reference only. Vitech technical staff will assist you in the CORE Enterprise Server installation.

The following installation procedures must be performed at the machine on which CORE2net will be installed. Do **NOT** attempt to install using Windows terminal services (e.g. PCAnywhere, Windows 2000 Terminal Services, etc...).

#### **Launch CORE 4.0 Installer**

Insert the CORE CD into a CD drive to which the server has access. If the installer program does not launch automatically on the server, open the root directory of the CD in Windows Explorer and double-click SETUP.EXE.

Select *Install CORE Enterprise 4.0*. When prompted, select *CORE Enterprise Server*, and confirm by choosing *Yes*.

Note
The installer will prompt for the desired locations of four directories. If possible, the CORE repository location and the CORE transaction logs location should be on a physical hard disk drive that is not used for Windows virtual memory. <b><i>This is very important for performance.</i></b> If two physical hard drives can be freed from Windows virtual memory, then the CORE repository location, and the CORE transaction logs location should also be on separate physical drives from each other. <b><i>Do not install any CORE Enterprise Server components in HPFS partitions.</i></b>

#### **End-User License Agreement**

The installer will prompt to you to accept the terms of the license agreement. If you accept this agreement, select yes. If you do not accept this agreement, promptly return the CORE software and the accompanying items (including written materials and other containers) to the place where they were obtained.

## Specify Root Location Program Files

The installation process will prompt for the root location of the server program files. The default is **C:\COREServer**. It is recommended that these files be installed in the same partition as other application programs. You can install these files in the same partition as Windows and/or Windows swap space. The installer will create the following subdirectories in the specified location:

- backup
- bin
- data
- doc
- HTTP
- InstallAids
- logs (initially empty)
- scripts
- sys
- ualib

## Specify Location of CORE Repository

For best performance, choose a physical hard disk drive that Windows does not use for virtual memory. The default is **C:\CORERepository**.

## Specify Location of CORE Transaction Logs

For best performance, choose a physical hard disk drive that Windows does not use for virtual memory. For even better performance, choose a physical hard disk that is also separate from the CORE repository location selected above. The default is **C:\CORELogs**.

## Specify Where Hot Backups Will Be Stored

See *Chapter 4, Backup and Recovery*, for details of this feature. The specified directory should have sufficient free space to hold five repository backups (a backup of an empty repository is over 13 MB). The default is **C:\COREBackups**.

## Specify NetLDI Port Number

This is the TCP/IP port number on which the CORE Enterprise Server listens for client requests.

Note
You must specify the same number during the installation of each client that will access this server. This port number must not be used by any other TCP/IP services running on the server. The default is <b>10075</b> . A line reflecting the specified value will automatically be added to the bottom of the SERVICES file. This file is located by default at C:\WINNT\SYSTEM32\DRIVERS\ETC\SERVICES. You should search for other

SERVICES files on the server, which might be used in different configurations, and manually add the same line to each one. The Windows registry value HKEY\_LOCAL\_MACHINE\System\CurrentControlSet\Services\Tcpip\Parameters\DataBasePath points to the SERVICES file currently in use.

## Specify Database Update Ports

These values are the UDP port numbers on which the CORE Enterprise Server will send database updates to the CORE Enterprise Clients.

### Note

The default broadcast port number is 32051, and the default backchannel port number is 32052. These two values must be unique. Additionally, each of these values must be different from the update port settings used within any other CORE Enterprise Server configuration on your network. Two lines reflecting the specified values will automatically be added to the bottom of the system's SERVICES file. This file is located by default at C:\WINNT\SYSTEM32\DRIVERS\ETC\SERVICES. You should search for other SERVICES files on the server, which might be used in different configurations, and manually add the same lines to each one. The Windows registry value HKEY\_LOCAL\_MACHINE\System\CurrentControlSet\Services\Tcpip\Parameters\DataBasePath points to the SERVICES file currently in use.

## Finish Running CORE Installer

Click the *Install* button to transfer all required files from the CD and install them on the server. At the end of this process, click the *Finish* button to close the installer.

### Note

The installer will automatically make the following changes to system environment variables:

- A new variable GEMSTONE will point to the root CORE Enterprise Server program files directory.
- A new variable CORERepository will point to the location of the CORE repository specified during the installation.
- A new variable COREBackups will point to the location specified during installation for hot backups.
- A new variable CORELogs will point to the location specified during the installation for the transaction logs.

### Note

The installer will automatically add information to the Windows registry in the following locations:

- HKEY\_LOCAL\_MACHINE \ SOFTWARE \ GemStone
- HKEY\_LOCAL\_MACHINE \ SOFTWARE \ Vitech Corporation \ CORE2net Application Server
- HKEY\_LOCAL\_MACHINE \ SOFTWARE \ Vitech Corporation \ CORE2net Communication Server

### Note

The installer will automatically create shortcuts on the Start menu for all database maintenance scripts (.BAT files) in the scripts directory. See Chapter 3, Administration Tools for the proper usage of these scripts.

## Reboot

At the end of the installer routine, it prompts you whether to reboot the server. Choose *Yes* or reboot the server yourself before continuing with the server configuration below. (Make sure you log back in to the same account with administrative privileges).

## Customize SYSTEM.CONF

The installer will place a SYSTEM.CONF file in the data subdirectory created above (e.g., C:\COREServer\data). The following parameters at the end of this file should reference the CORE repository and transaction log locations specified above:

- DBF\_EXTENT\_NAMES
- STN\_TRAN\_LOG\_DIRECTORIES

Note
If you need to modify this file (or are instructed to do so by Vitech), use a text editor such as the Windows Notepad, not a word processor such as Microsoft Word.

The SYSTEM.CONF file also contains the following tuning parameters. Great care should be taken in modifying them, as they significantly affect the operation and performance of the server. Vitech must provide optimal settings for these parameters based on your server's responsibilities, available RAM, and maximum number of concurrent CORE clients.

- GEM\_PRIVATE\_PAGE\_CACHE\_KB
- GEM\_TEMPOBJ\_CACHE\_SIZE
- SHR\_PAGE\_CACHE\_SIZE\_KB
- STN\_PRIVATE\_PAGE\_CACHE\_KB

## Verify PATH Environment Variable

1. Open *Start > Settings > Control Panel > System > Environment*.
2. Verify that the installer appended %GEMSTONE%\bin to the PATH variable.
3. Issue one of the following commands at a command prompt (e.g., in a DOS box) to verify that the system properly resolves the variable to the COREServer directory location:
  - path
  - echo %GEMSTONE%

---

## Configure COREAdmin Account

### Create COREAdmin Account

The COREAdmin account can be either a local account on the server machine or a domain account. This account is only used by the CORE Enterprise Server itself, not by the CORE Enterprise users, so either is fine, but, to avoid confusion, do not create both a local account and a domain account. If you perform these steps on a Windows NT Server, you will create a domain account. Otherwise, you will create an account that can only be used on the local machine.

1. Open *Start > Programs > Administrative Tools > User Manager*. Select the *User > New User* menu command.
2. Enter the username and password as follows:  
Username: COREAdmin  
Password: enterprise01 (*required for installation*)
3. Turn off the *User Must Change Password at Next Logon* option and turn on *Password Never Expires*
4. Click *ADD* to create the COREAdmin account
5. In the *User Properties* dialog, click the *Profile* button.
6. In the *User Environment Profile* dialog, fill in the *Home Directory Local Path* as follows:  
C:\COREServer\logs  
(where C: is the drive selected for installation of the CORE Enterprise Server program files). Click the *OK* button in both dialogs to apply the change.
7. Click *Close* to dismiss the *New User* dialog.
8. Select the *Policies > User Rights* menu command.
9. Turn on the Show Advanced User Rights option.
10. Select *Log on as a service* from the drop-down list of rights. Click the *Add* button.
11. In the *Add Users and Groups* dialog, select from the *List Names From* drop-down list either the name of the local machine if you created a local account or the domain name if you created a domain account.
12. Click the *Show Users* button.
13. Select COREAdmin in the list, click *Add*, and then click *OK*.
14. Click *OK* to dismiss *User Rights Policy* dialog.
15. Close the User Manager.

Note
------

If, after installation, you change the password of the COREAdmin account, you will have to manually change the password used by the COREStone and netldi51 services.
--

## Set Directory Permissions

Give the COREAdmin account full control of the created directories (COREServer, CORERepository, CORELogs, and COREBackups), as well as the WinNT directory, and their contents.

The FAT file system does not support directory and file security, so the COREAdmin account already has full control of any directories that reside in FAT partitions. Only perform the following steps for CORE Enterprise Server directories that reside in NTFS partitions.

1. Open *Start > Programs > Windows NT Explorer*.
2. Select each of the specified directories in turn and perform the following steps.
3. Open *File > Properties > Security > Permissions > Add*.  
(If there is no *Security* tab on the *Properties* dialog, then the directory is on a FAT partition, and you do not need to set its permissions.)
4. In the *Add Users and Groups* dialog, select from the *List Names From* drop-down list either the name of the local machine if you created a local account or the domain name if you created a domain account.
5. Click the *Show Users* button, select COREAdmin and click *Add*.
6. In the *Type of Access* drop-down list, select *Full Control*. Click the *OK* button.
7. Enable both *Replace Permissions on Subdirectories* and *Replace Permissions on Existing Files*.
8. Click the *OK* buttons in both the *Directory Permissions* dialog and the *Properties* dialog.  
If prompted, click *Yes* to replace the security information.

## Finalize Server Installation

### Create CORE Enterprise Server Services

Next, you must create the CORE Enterprise Server services themselves. To accomplish this in Windows Explorer, select the COREServer\InstallAids directory (C:\COREServer\InstallAids by default), and double-click on the following two command files to execute them. You can also execute them at a command prompt. (The commands in these files reference the password file in the same directory and automatically add information to the Windows registry.)

- CreateNetLDI.Bat
- CreateStone.Bat

Note
To verify the successful creation of the CORE Enterprise Server services, open <i>Start &gt; Settings &gt; Control Panel &gt; Services</i> .

## Start Task Scheduler

To schedule the automatic, periodic execution of database maintenance scripts, start the Task Scheduler service using *Start > Settings > Control Panel > Services*. Set the Task Scheduler service to start automatically. Then execute the following command in the InstallAids directory as above.

➤ Schedule.Bat

Note
You can verify the successful scheduling of the database maintenance scripts by opening <i>Start &gt; Settings &gt; Control Panel &gt; Scheduled Tasks</i> . You should see 24 scheduled tasks.

## Start CORE Enterprise Server Services

Start the *COREStone* and *NetLDI* services using *Start > Programs > CORE Enterprise 4.0 Server > Start NetLDI* and *Start CORE Stone*. Clients will then be able to log in and begin work.

Note
You can verify the successful startup of the CORE Enterprise Server services by opening <i>Start &gt; Settings &gt; Control Panel &gt; Services</i> .

Note
If either of the services cannot to start due to a login, try the corrective measures outlined in the <i>Troubleshooting</i> section near the end of <i>Appendix B</i> .

## Set Time Zone

Set the new repository to the correct time zone. By default, the time zone is Eastern Time (US). To set the time zone:

1. Open *C:\COREServer\scripts\TimeZone.Script* (where C: is the drive selected for installation of the CORE Enterprise Server program files) in a text editor such as the Windows Notepad.
2. Modify the parameters at the bottom according to the instructions in the file to reflect the server's local time zone.
3. Then locate *TimeZone.Bat* in the same directory and double-click on it.
4. Check the output in *COREServer\logs\TimeZone.Out* to ensure that the script executed without error and that the change was successfully committed. (The *TimeZone.Bat* script must be re-executed when restoring backup data into a clean repository. See *Chapter 4, Backup and Recovery* for details.)

## Install Service Packs and Add-Ins

If Vitech has supplied you with any CORE Enterprise Server service packs or add-ins, read their documentation carefully and install them at this time.

## Network License Manager Installation

Before installing the *CORE Network License Manager*, review the README.TXT file located in the corresponding directory on the CORE CD. This file contains the latest information, which may not be documented elsewhere.

If you are already running *Network License Manager 2.0* (application version) or *4.3* (service version) on the *CORE Enterprise Server* machine, if you want to run the *NLM* on a separate machine, or if you will be using node-locked or floppy-key licenses rather than network licenses, then skip this section.

### Log on

Log in to Windows NT as a user with administrative privileges.

### Launch CORE Installer

Insert the CORE CD into a CD drive to which the server has access. If the installer program does not launch automatically on the server, open the root directory of the CD in Windows Explorer and double-click SETUP.EXE.

1. Select *Install CORE Network License Manager*.
2. When prompted, select either *NLM 4.3 (Service Version)* or *NLM 2.0 (Non-Service Version)*, and confirm by choosing *Yes*.

Note
The advantage of installing <i>NLM 2.0</i> , which runs as an application, is that it provides a user interface whereby the operator can view the available license tokens and the licenses in use and can reclaim tokens. However, a user must remain logged in at all times for <i>NLM 2.0</i> to run. The same administrative functions can be performed on <i>NLM 4.3</i> via the <i>NetTerm</i> utility, and, in addition, <i>NLM 4.3</i> runs as a service even when no user is logged in. Therefore, <i>NLM 4.3</i> is recommended.

### Specify Installation Directory and Transfer Files

The recommended (default) directory is: *C:\Program Files\Vitech Corporation\CORE NLM 43* for the service version and *C:\Program Files\Vitech Corporation\CORE NLM 20* for the application version. After you specify a directory, the installer will transfer files and finish.

Note
If you installed <i>NLM 4.3</i> , you can verify that the <i>Network License Manager 4.3</i> service was created ( <i>Network License Manager 4.3.3</i> ) by opening <i>Start &gt; Settings &gt; Control Panel &gt; Services</i> . If the service is not listed, execute the following commands at a command prompt.
<ul style="list-style-type: none"><li>• <code>cd C:\Program Files\Vitech Corporation\CORE NLM 43</code> (where "<i>C:\Program Files\Vitech Corporation\CORE NLM 43</i>" the path selected during installation)</li><li>• <code>nmsvc43/install</code></li></ul>



Close and reopen the *Services* control panel, and if the *Network License Manager 4.3* service still does not exist, contact Vitech Corporation technical support.

## Generate License Request

1. Open *Start > Programs > CORE NLM 4.3 > Utilities > License Request*. In the License Request Editor,
2. Choose the *File > Generate* menu command.
3. Enter your name or customer name in the *User Information* dialog.
4. Enter the serial number found on the back of the CORE CD case and click on the *OK* button.
5. Choose the *File > Save As* menu command in the *License Request Editor* and specify a file location.
6. Send an email to [support@vtcorp.com](mailto:support@vtcorp.com) with the following information.
  - Manufacturer of the computer on which the NLM is installed.
  - Model of the computer on which the NLM is installed.
  - Serial number of the computer on which the NLM is installed.
  - The license request file generated above (as an attachment).

Vitech will reply with a *REGISTRY.DBX* file. Place this file in the *CORE Network License Manager* installation directory (e.g., *C:\Program Files\Vitech Corporation\CORE NLM 43*).

**Note**  
Only run the *License Request Editor* once. All CORE licenses including the *REGISTRY.DBX* file you receive from Vitech will be invalidated if you generate a subsequent license request on the same computer.

## Start Network License Manager

### CORE NLM 4.3

1. Open *Start > Settings > Control Panel > Services*
2. Start the *Network License Manager 4.3* service.

**Note**  
If the service fails to start, ensure that the *REGISTRY.DBX* file from Vitech Corporation was properly installed in the *CORE NLM 43* directory as specified above.

3. Open *Start > Programs > CORE NLM 4.3 > NetTerm*. A new icon will appear in the “system tray” at the end of your Windows task bar.
4. Double-click on this icon to display the *NetTerm* console.
5. Ensure the upper window of the *NetTerm* console lists available tokens.

**Note**  
If the *NetTerm* console is empty, ensure it is accessing the correct *Network License Manager* by choosing the *Options > Network* menu command. In the *Network Settings* dialog, the *NLM Address* field should contain the IP address of the server running the *Network License Manager* (either a dotted decimal address or a symbolic name). Test the validity of the address using the “ping” command at a command prompt. The *NLM Port* should be *32000*. If you require assistance, first consult your network administrator.

**Note**

If the previous remedy does not cause available tokens to be listed in the *NetTerm* console, try installing and running *Network License Manager 2.0*, copying the same *REGISTRY.DBX* file into its installation directory. If the *Network License Manager* console lists the available tokens from the registry file then you have a *NetTerm* problem. If the *Network License Manager* console is empty, then there is a problem with your *REGISTRY.DBX* file, and you should contact Vitech Corporation.

## CORE NLM 2.0

1. Open *Start > Programs > CORE NLM 2.0 > Network License Manager*.
2. Ensure that available tokens are listed in the upper window of the *NLM* console.

### Note

If *Network License Manager 2.0* fails to start, ensure that the *REGISTRY.DBX* file from Vitech Corporation was properly installed in the *CORE NLM 20* directory as specified above.

### Note

If the *NLM* console is empty, then there is a problem with your *REGISTRY.DBX* file, and you should contact Vitech Corporation.

## Troubleshooting

If either of the CORE Enterprise Server services cannot start due to a login failure or if users attempting to log in to CORE Enterprise encounter an error specifying that the server is “unable to spawn a gem”, attempt the following corrective measures.

1. Verify that only a single COREAdmin account exists rather than one local account and one domain-level account. If there are two COREAdmin accounts, ensure that the COREStone and netldi51 services log in to the correct account.
2. Use *Start > Settings > Control Panel > Services*. Select each CORE Enterprise Server service in turn and click the *Startup* button.
3. In the *Service* dialog, click the “...” button next to the *This Account* field.
4. In the *Add User* dialog, before double-clicking on the COREAdmin account, select from the *List Names From* drop-down list either the name of the local machine if you want to use the local account or the domain name if you want to use the domain account.
5. Verify that the local path of the COREAdmin account has been properly set as described above.
6. Verify that the COREAdmin account has been given the right to log on as a service as described above, and, under Windows 2000, has been made a standard user.
7. Verify that a netldi51 line has been appended to the SERVICES file, as described above, on both the client and the server.

8. Verify that the COREAdmin account has been given full control of all the created CORE Enterprise Server directories as well as the WinNT directory, as described above.
9. Verify that the COREAdmin account has not been locked out due to previous login attempts with an invalid password.
10. If you are installing CORE Enterprise Server on a primary domain controller, synchronize the domain and reboot the server machine.
11. If you continue to experience login failures by the CORE Enterprise Server services, switch their passwords to the domain Administrator password (but leave COREAdmin as the login account).

Visit <http://www.vtcorp.com> for more information, or contact Vitech technical support by email at [support@vtcorp.com](mailto:support@vtcorp.com) or by phone at 703-883-2270.

## Uninstalling CORE Enterprise 4.0 Server

Note
<p><i>Failure</i> to follow steps as written <i>will cause software to remain</i> on the system requiring another install before complete removal can occur.</p>

To remove a CORE Enterprise Server installation, follow these steps:

1. You may wish to back up and archive the final state of the *extent0.dbf* file in the *CORERepository* directory.
2. Stop the *COREStone* and *NetLDI51* services using the menu commands for those purposes. Ensure that all CORE Enterprise clients and the CORE2net server are logged out and shut down before stopping the services. See *chapter 7* for more information on CORE2net.
3. Remove the services. At a command prompt, execute the following two command lines:  

```
stone delete COREStone  
netldi delete
```
4. At a command prompt, view the database maintenance script execution schedule using the “at” command. Remove *CORE Enterprise Server* scripts from the schedule using “at <id> /delete”, where <id> is a task number obtained by using the “at” command alone. You can remove all tasks from the schedule with “at /delete”. If no tasks remain in the schedule after removing the *CORE Enterprise Server* scripts, you can stop the *Schedule* service in the Windows Services control panel.
5. Remove the program files. Go to *Start > Settings > Control Panel > Add/Remove Programs* and select *CORE Enterprise 4.0 Server*.
6. All installed files should be automatically removed. However, some data files and log files created after installation may have to be removed manually, along with the directories they were in.
7. Go to *Start > Settings > Control Panel > System > Environment*. Remove “%GEMSTONE%\bin” from the PATH environment variable.

8. Remove the *COREAdmin* user account.
9. Reboot the server.



## C. Windows 2000

### *Installing CORE Enterprise Server*

Use this section as reference only. Vitech technical staff will assist you in the CORE Enterprise Server installation.

The following installation procedures must be performed at the machine on which CORE2net will be installed. Do **NOT** attempt to install using Windows terminal services (e.g. PCAnywhere, Windows 2000 Terminal Services, etc...).

#### **Launch CORE 4.0 Installer**

Insert the CORE CD into a CD drive to which the server has access. If the installer program does not launch automatically on the server, open the root directory of the CD in Windows Explorer and double-click SETUP.EXE.

Select *Install CORE Enterprise 4.0*. When prompted, select *CORE Enterprise Server*, and confirm by choosing *Yes*.

Note
The installer will prompt for the desired locations of four directories. If possible, the CORE repository location and the CORE transaction logs location should be on a physical hard disk drive that is not used for Windows virtual memory. <b><i>This is very important for performance.</i></b> If two physical hard drives can be freed from Windows virtual memory, then the CORE repository location, and the CORE transaction logs location should also be on separate physical drives from each other. <b><i>Do not install any CORE Enterprise Server components in HPFS partitions.</i></b>

#### **End-User License Agreement**

The installer will prompt to you to accept the terms of the license agreement. If you accept this agreement, select yes. If you do not accept this agreement, promptly return the CORE software and the accompanying items (including written materials and other containers) to the place where they were obtained.

## Specify Root Location of Program Files

The installation process will prompt for the root location of the server program files. The default is **C:\COREServer**. It is recommended that these files be installed in the same partition as other application programs. You can install these files in the same partition as Windows and/or Windows swap space. The installer will create the following subdirectories in the specified location:

- backup
- bin
- data
- doc
- HTTP
- InstallAids
- logs (initially empty)
- scripts
- sys
- ualib

## Specify Location of CORE Repository

For best performance, choose a physical hard disk drive that Windows does not use for virtual memory. The default is **C:\CORERepository**.

## Specify Location of CORE Transaction Logs

For best performance, choose a physical hard disk drive that Windows does not use for virtual memory. For even better performance, choose a physical hard disk that is also separate from the CORE repository location selected above. The default is **C:\CORELogs**.

## Specify Where Hot Backups Will Be Stored

See *Chapter 4, Backup and Recovery*, for details of this feature. The specified directory should have sufficient free space to hold five repository backups (a backup of an empty repository is over 13 MB). The default is **C:\COREBackups**.

## Specify NetLDI Port Number

This is the TCP/IP port number on which the CORE Enterprise Server listens for client requests.

Note
You must specify the same number during the installation of each client that will access this server. This port number must not be used by any other TCP/IP services running on the server. The default is <b>10075</b> . A line reflecting the specified value will automatically be added to the bottom of the SERVICES file. This file is located by default at <b>C:\WINNT\SYSTEM32\DRIVERS\ETC\SERVICES</b> . You should search for other

SERVICES files on the server, which might be used in different configurations, and manually add the same line to each one. The Windows registry value HKEY\_LOCAL\_MACHINE\System\CurrentControlSet\Services\Tcpip\Parameters\DataBasePath points to the SERVICES file currently in use.

## Specify Database Update Ports

These values are the UDP port numbers on which the CORE Enterprise Server will send database updates to the CORE Enterprise Clients.

### Note

The default broadcast port number is 32051, and the default backchannel port number is 32052. These two values must be unique. Additionally, each of these values must be different from the update port settings used within any other CORE Enterprise Server configuration on your network. Two lines reflecting the specified values will automatically be added to the bottom of the system's SERVICES file. This file is located by default at C:\WINNT\SYSTEM32\DRIVERS\ETC\SERVICES. You should search for other SERVICES files on the server, which might be used in different configurations, and manually add the same lines to each one. The Windows registry value HKEY\_LOCAL\_MACHINE\System\CurrentControlSet\Services\Tcpip\Parameters\DataBasePath points to the SERVICES file currently in use.

## Finish Running CORE Installer

Click the *Install* button to transfer all required files from the CD and install them on the server. At the end of this process, click the *Finish* button to close the installer.

### Note

The installer will automatically make the following changes to system environment variables:

- A new variable GEMSTONE will point to the root CORE Enterprise Server program files directory.
- A new variable CORERepository will point to the location of the CORE repository specified during the installation.
- A new variable COREBackups will point to the location specified during installation for hot backups.
- A new variable CORELogs will point to the location specified during the installation for the transaction logs.

### Note

The installer will automatically add information to the Windows registry in the following location:

- HKEY\_LOCAL\_MACHINE \ SOFTWARE \ GemStone
- HKEY\_LOCAL\_MACHINE \ SOFTWARE \ Vitech Corporation \ CORE2net Application Server
- HKEY\_LOCAL\_MACHINE \ SOFTWARE \ Vitech Corporation \ CORE2net Communication Server

### Note

The installer will automatically create shortcuts on the Start menu for all database maintenance scripts (.BAT files) in the scripts directory. See Chapter 3, Administration Tools for the proper usage of these scripts.

## Reboot

At the end of the installer routine, it prompts you whether to reboot the server. Choose *Yes* or reboot the server yourself before continuing with the server configuration below. (Make sure you log back in to the same account with administrative privileges).

## Customize SYSTEM.CONF

The installer will place a SYSTEM.CONF file in the data subdirectory created above (e.g., C:\COREServer\data). The following parameters at the end of this file should reference the CORE repository and transaction log locations specified above:

- DBF\_EXTENT\_NAMES
- STN\_TRAN\_LOG\_DIRECTORIES

Note
If you need to modify this file (or are instructed to do so by Vitech), use a text editor such as the Windows Notepad, not a word processor such as Microsoft Word.

The SYSTEM.CONF file also contains the following tuning parameters. Great care should be taken in modifying them, as they significantly affect the operation and performance of the server. Vitech must provide optimal settings for these parameters based on your server's responsibilities, available RAM, and maximum number of concurrent CORE clients.

- GEM\_PRIVATE\_PAGE\_CACHE\_KB
- GEM\_TEMPOBJ\_CACHE\_SIZE
- SHR\_PAGE\_CACHE\_SIZE\_KB
- STN\_PRIVATE\_PAGE\_CACHE\_KB

## Verify PATH Environment Variable

1. Open *Start > Settings > Control Panel > System > Advanced > Environment Variables* on Windows 2000.
2. Verify that the installer appended %GEMSTONE%\bin to the PATH variable.
3. Issue one of the following commands at a command prompt (e.g., in a DOS box) to verify that the system properly resolves the variable to the COREServer directory location:
  - path
  - echo %GEMSTONE%

## Configure COREAdmin Account

### Create COREAdmin account

The COREAdmin account can be either a local account on the server machine or a domain account. This account is only used by the CORE Enterprise Server itself, not by the CORE Enterprise users, so either is fine, but, to avoid confusion, do not create both a local account and a domain account. If you perform these steps on a Windows 2000 Server, you will create a domain account. Otherwise, you will create an account that can only be used on the local machine.

1. Open *Start > Settings > Control Panel > Administrative Tools > Active Directory Users & Computers*.
2. Select *Users*.
3. Select the *Action > New > User* menu command.
4. Enter the username and password as follows:  
Username: COREAdmin  
Password: enterprise01 (*required for installation*)
5. Ensure the *User must change password at next logon* option is *off* and *Password never expires* option is *on*.
6. Click the *Next* button to confirm your settings and then the *Finish* button to create the user.
7. Select the *COREAdmin* account and select the *Action > Properties* command to view its properties.
8. In the *Properties* dialog, select the *Profile* tab. Fill in the *Local path* as follows:  
C:\COREServer\logs  
(where C: is the drive selected for installation of the CORE Enterprise Server program files).
9. Select the *Member of* tab of the *Properties* dialog and confirm the COREAdmin account is a member of *Domain Users*.
10. Click the *OK* button to dismiss the *Properties* dialog and then close the *Active Directory Users and Computers* window.
11. From the Control Panel, open *Administrative Tools > Local Security Policy > Local Policies > User Rights Assignment*.
12. Select *Log on as a service* and then choose the *Action > Security* menu command. Click the *Add* button.
13. In the *Select Users or Groups* dialog, select from the *Look in* drop-down list either the name of the local machine if you created a local account or the domain name if you created a domain account. Select *COREAdmin* in the list, click *Add*, and click *OK* to apply the new right.

14. Click the *OK* button in the *Local Security Policy Setting* dialog and close the *Local Security Settings* window.

**Note**

If, after installation, you change the password of the COREAdmin account, you will have to manually change the password used by the COREStone and netldi51 services.

## Set Directory Permissions

Give the COREAdmin account full control of the created directories (COREServer, CORERepository, CORELogs, and COREBackups), as well as the WinNT directory, and their contents.

The FAT file system does not support directory and file security, so the COREAdmin account already has full control of any directories that reside in FAT partitions. Only perform the following steps for CORE Enterprise Server directories that reside in NTFS partitions.

1. Open *Start > Programs > Accessories > Windows Explorer*.
2. Select each specified directory in turn and perform the following steps.
3. Open *File > Properties > Security > Advanced > Permissions > Add*. (If there is no *Security* tab on the *Properties* dialog, then the directory is on a FAT partition, and you do not need to set its permissions.)
4. In the *Select Computer, User, or Group* dialog, select from the *Look in* drop-down list either the name of the local machine if you created a local account or the domain name if you created a domain account.
5. Select *COREAdmin*, and click the *OK* button.
6. Select *This folder, subfolders and files* from the *Apply onto* list.
7. Enable all the check boxes in the *Permissions* list, and click the *OK* buttons in the *Permission Entry* dialog and *Access Control Settings* dialog.

## Finalize Server Installation

### Create CORE Enterprise Server Services

Next, you must create the CORE Enterprise Server services themselves. To accomplish this in Windows Explorer, select the COREServer\InstallAids directory (C:\COREServer\InstallAids by default), and double-click on the following two command files to execute them. You can also execute them at a command prompt. (The commands in these files reference the password file in the same directory and automatically add information to the Windows registry.)

- CreateNetLDI.Bat
- CreateStone.Bat

**Note**

To verify the successful creation of the CORE Enterprise Server services, open *Start > Settings > Control Panel > Administrative Tools > Services*.

## Start Task Scheduler

To schedule the automatic, periodic execution of database maintenance scripts, start the Task Scheduler service using *Start > Settings > Control Panel > Administrative Tools > Services*. Set the Task Scheduler service to start automatically. Then execute the following command in the InstallAids directory as above.

➤ Schedule.Bat

Note
You can verify the successful scheduling of the database maintenance scripts by opening <i>Start &gt; Settings &gt; Control Panel &gt; Scheduled Tasks</i> . You should see 24 scheduled tasks.

## Start CORE Enterprise Server Services

Start the *COREStone* and *NetLDI* services using *Start > Programs > CORE Enterprise 4.0 Server > Start NetLDI* and *Start CORE Stone*. Clients will then be able to log in and begin work.

Note
You can verify the successful startup of the CORE Enterprise Server services by opening <i>Start &gt; Settings &gt; Control Panel &gt; Administrative Tools &gt; Services</i> .

Note
If either of the services cannot to start due to a login, try the corrective measures outlined in the <i>Troubleshooting</i> section near the end of <i>Appendix B</i> .

## Set Time Zone

Set the new repository to the correct time zone. By default, the time zone is Eastern Time (US). To set the time zone:

1. Open *C:\COREServer\scripts\TimeZone.Script* (where C: is the drive selected for installation of the CORE Enterprise Server program files) in a text editor such as the Windows Notepad.
2. Modify the parameters at the bottom according to the instructions in the file to reflect the server's local time zone.
3. Then locate *TimeZone.Bat* in the same directory and double-click on it.
4. Check the output in *COREServer\logs\TimeZone.Out* to ensure that the script executed without error and that the change was successfully committed. (The *TimeZone.Bat* script must be re-executed when restoring backup data into a clean repository. See *Chapter 4, Backup and Recovery* for details.)

## Install Service Packs and Add-Ins

If Vitech has supplied you with any CORE Enterprise Server service packs or add-ins, read their documentation carefully and install them at this time.

## Network License Manager Installation

Before installing the *CORE Network License Manager*, review the README.TXT file located in the corresponding directory on the CORE CD. This file contains the latest information, which may not be documented elsewhere.

If you are already running *Network License Manager 2.0* (application version) or *4.3* (service version) on the *CORE Enterprise Server* machine, if you want to run the *NLM* on a separate machine, or if you will be using node-locked or floppy-key licenses rather than network licenses, then skip this section.

### Log on.

Log in to Windows 2000 as a user with administrative privileges.

### Launch CORE Installer

Insert the CORE CD into a CD drive to which the server has access. If the installer program does not launch automatically on the server, open the root directory of the CD in Windows Explorer and double-click SETUP.EXE.

1. Select Install CORE Network License Manager.
2. When prompted, select either NLM 4.3 (Service Version) or NLM 2.0 (Non-Service Version), and confirm by choosing Yes.

Note
The advantage of installing <i>NLM 2.0</i> , which runs as an application, is that it provides a user interface whereby the operator can view the available license tokens and the licenses in use and can reclaim tokens. However, a user must remain logged in at all times for <i>NLM 2.0</i> to run. The same administrative functions can be performed on <i>NLM 4.3</i> via the <i>NetTerm</i> utility, and, in addition, <i>NLM 4.3</i> runs as a service even when no user is logged in. Therefore, <i>NLM 4.3</i> is recommended.

### Specify Installation Directory and Transfer Files

The recommended (default) directory is: *C:\Program Files\Vitech Corporation\CORE NLM 43* for the service version and *C:\Program Files\Vitech Corporation\CORE NLM 20* for the application version. After you specify a directory, the installer will transfer files and finish.

Note
If you installed <i>NLM 4.3</i> , you can verify that the <i>Network License Manager 4.3</i> service was created ( <i>Network License Manager 4.3.3</i> ) by opening <i>Start &gt; Settings &gt; Control Panel &gt; Administrative Tools &gt; Services</i> . If the service is not listed, execute the following commands at a command prompt.
<ul style="list-style-type: none"><li>• cd C:\Program Files\Vitech Corporation\CORE NLM 43 (where "C:\Program Files\Vitech Corporation\CORE NLM 43" the path selected during installation)</li><li>• <i>nlmsvc43/install</i></li></ul>

Close and reopen the *Services* control panel, and if the Network License Manager 4.3 service still does not exist, contact Vitech Corporation technical support.

## Generate License Request

1. Open *Start > Programs > CORE NLM 4.3 > Utilities > License Request* in the *License Request Editor*.
2. Choose the *File > Generate Menu* command.
3. Enter your name or customer name in the User Information dialog.
4. Enter the serial number found on the back of the CORE CD case and click on the OK button.
5. Choose the *File > Save As* menu command in the License Request Editor and specify a file location.
6. Send an email to support@vtcorp.com with the following information.
  - Manufacturer of the computer on which the NLM is installed.
  - Model of the computer on which the NLM is installed.
  - Serial number of the computer on which the NLM is installed.
  - The license request file generated above (as an attachment).

Vitech will reply with a REGISTRY.DBX file. Place this file in the *CORE Network License Manager* installation directory (e.g., *C:\Program Files\Vitech Corporation\CORE NLM 43*).

<b>Note</b>
Only run the <i>License Request Editor</i> once. All CORE licenses including the <i>REGISTRY.DBX</i> file you receive from Vitech will be invalidated if you generate a subsequent license request on the same computer.

## Start Network License Manager

### CORE NLM 4.3

1. Open *Start > Settings > Control Panel > Administrative Tools > Services*.
2. Start the *Network License Manager 4.3* service.

<b>Note</b>
If the service fails to start, ensure that the <i>REGISTRY.DBX</i> file from Vitech Corporation was properly installed in the <i>CORE NLM 43</i> directory as specified above.

3. Open *Start > Programs > CORE NLM 4.3 > NetTerm*. A new icon will appear in the “system tray” at the end of your Windows task bar.
4. Double-click on this icon to display the *NetTerm* console.
5. Ensure that available tokens are listed in the upper window of the *NetTerm* console.

<b>Note</b>
-------------

If the *NetTerm* console is empty, ensure it is accessing the correct *Network License Manager* by choosing the *Options > Network* menu command. In the *Network Settings* dialog, the *NLM Address* field should contain the IP address of the server running the *Network License Manager* (either a dotted decimal address or a symbolic name). Test the validity of the address using the “ping” command at a command prompt. The *NLM Port* should be 32000. If you require assistance, first consult your network administrator.

**Note**

If the previous remedy does not cause available tokens to be listed in the *NetTerm* console, try installing and running *Network License Manager 2.0*, copying the same *REGISTRY.DBX* file into its installation directory. If the *Network License Manager* console lists the available tokens from the registry file then you have a *NetTerm* problem. If the *Network License Manager* console is empty, then there is a problem with your *REGISTRY.DBX* file, and you should contact Vitech Corporation.

### CORE NLM 2.0

1. Open *Start > Programs > CORE NLM 2.0 > Network License Manager*.
2. Ensure that available tokens are listed in the upper window of the NLM console.

**Note**

If *Network License Manager 2.0* fails to start, ensure that the *REGISTRY.DBX* file from Vitech Corporation was properly installed in the *CORE NLM 20* directory as specified above.

**Note**

If the *NLM* console is empty, then there is a problem with your *REGISTRY.DBX* file, and you should contact Vitech Corporation.

## Troubleshooting

If either of the CORE Enterprise Server services cannot start due to a login failure or if users attempting to log in to CORE Enterprise encounter an error specifying that the server is “unable to spawn a gem”, attempt the following corrective measures.

1. Verify that only a single COREAdmin account exists rather than one local account and one domain-level account. If there are two COREAdmin accounts, ensure that the COREStone and netldi51 services log in to the correct account.
2. Use *Start > Settings > Control Panel > Administrative Tools > Services*.
3. Select each CORE Enterprise Server service in turn and then open *Action > Properties > Log On*.
4. Before double-clicking on the COREAdmin account, select from the *Look in* drop-down list either the name of the local machine if you want to use the local account or the domain name if you want to use the domain account.

5. Verify that the local path of the COREAdmin account has been properly set as described above.
6. Verify that the COREAdmin account has been given the right to log on as a service as described above, and, under Windows 2000, has been made a standard user.
7. Verify that a netldi51 line has been appended to the SERVICES file, as described above, on both the client and the server.
8. Verify that the COREAdmin account has been given full control of all the created CORE Enterprise Server directories as well as the WinNT directory, as described above.
9. Verify that the COREAdmin account has not been locked out due to previous login attempts with an invalid password.
10. If you are installing CORE Enterprise Server on a primary domain controller, synchronize the domain and reboot the server machine.
11. If you continue to experience login failures by the CORE Enterprise Server services, switch their passwords to the domain Administrator password (but leave COREAdmin as the login account).

Visit <http://www.vtcorp.com> for more information, or contact Vitech technical support by email at [support@vtcorp.com](mailto:support@vtcorp.com) or by phone at 703-883-2270.

## Uninstalling CORE Enterprise 4.0 Server

Note
<i>Failure</i> to follow steps as written <u>will cause software to remain</u> on the system requiring another install before complete removal can occur.

To remove a CORE Enterprise Server installation, follow these steps:

1. You may wish to back up and archive the final state of the *extent0.dbf* file in the *CORERepository* directory.
2. Stop the *COREStone* and *NetLDI51* services using the menu commands for those purposes. Ensure that all CORE Enterprise clients and the CORE2net server are logged out and shut down before stopping the services. See *chapter 7* for more information on CORE2net.
3. Remove the services. At a command prompt, execute the following two command lines:  
*stone delete COREStone*  
*netldi delete*
4. At a command prompt, view the database maintenance script execution schedule using the “at” command. Remove *CORE Enterprise Server* scripts from the schedule using “at <id> /delete”, where <id> is a task number obtained by using the “at” command alone. You can remove all tasks from the schedule with “at /delete”. If no tasks remain in the

schedule after removing the *CORE Enterprise Server* scripts, you can stop the *Schedule* service in the Windows Services control panel.

5. Remove the program files. Go to *Start > Settings > Control Panel > Add/Remove Programs* and select *CORE Enterprise 4.0 Server*.
6. All installed files should be automatically removed. However, some data files and log files created after installation may have to be removed manually, along with the directories they were in.
7. Go to *Start > Settings > Control Panel > System > Advanced > Environment Variables*. Remove “%GEMSTONE%\bin” from the PATH environment variable.
8. Remove the *COREAdmin* user account.
9. Reboot the server.

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## D. Client Installation

Before installing *CORE Enterprise 4.0 Client*, review the *README.TXT* file located in the corresponding directory on the CORE CD. This file contains the latest information, which may not be documented elsewhere.

### *Preparation*

#### **Client Hardware and Operating Systems Requirements:**

- Clients can run Windows 95, 98, NT, 2000, or Me.
- Each client should have at least 32 MB RAM. More will be required when accessing large amounts of data, especially under Windows 2000, which impose greater resource requirements.
- Each client should be connected to the server via a LAN and be able to ping the server by name using TCP/IP.

#### **Installing CORE Enterprise Client**

Insert the first CORE installation diskette or CD into your drive and run *SETUP.EXE* from it. You will be guided through the installation process. No previous CORE installation is required to install *CORE Enterprise*. The install program will ask for the directory (default is *C:\Program Files\Vitech Corporation\CORE Enterprise 40 Client*) in which *CORE Enterprise* should be installed. **DO NOT** install *CORE Enterprise* into the same directory as any existing CORE installation.

1. The installer will prompt to you to accept the terms of the license agreement. If you accept this agreement, select yes. If you do not accept this agreement, promptly return the CORE software and the accompanying items (including written materials and other containers) to the place where they were obtained.
2. Next, the installer will prompt you for your name, company, and serial number. Your CORE serial number is marked on the back of the CORE CD case.

3. Next, you will be prompted to provide the path where CORE Enterprise will be installed on the client machine. The default is **C:\Program Files\Vitech Corporation\CORE Enterprise 4.0 Client**.
4. Next, you will be asked for these two items:
  - a) *CORE Enterprise Server* - this is the host name or IP address of the machine that will run the CORE Enterprise Server.
  - b) *NetLDI Port* - this is the listening port on the CORE Enterprise Server.
5. Next, you will be asked if the network license manager (NLM) will be used for licensing. If you answer yes, you will then be prompted for three pieces of information.
  - a) NLM Server - this is the host name or IP address of the NLM server.
  - b) NLM Port - this is the listening port on the NLM server.
  - c) NLM Reply Port - this is the port on the client machine.

It is recommended that you use the default values provided for the *Port* and the *ReplyPort*. If you have any questions concerning any of these values, please contact your network or systems administrator.

The installation program will create a new program group with the title “*CORE Enterprise 4.0*”. It contains a shortcut labeled “*CORE Enterprise 4.0*”. To run *CORE Enterprise Client* using the configured server, simply choose this item from the *Start* menu.

## ***Uninstalling CORE Enterprise 4.0 Client***

To remove CORE Enterprise Client from your client machine

1. Select *Add/Remove Programs* from the Windows Control Panel.
2. Select *CORE Enterprise 4.0 Client* from the list of applications available to uninstall
3. Click the *Remove* button. This will remove all installed *CORE Enterprise 4.0 Client* files from your machine.

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## E. Disaster Prevention & Recovery

There is no recovery log in *CORE Enterprise* as there is in *CORE Workstation*. All changes are immediately written to the server, so a crash on a client should not result in any loss of data, with the possible exception of the change in progress when the crash occurred.

A CORE administrator with access to the server and to file backup tools should be assigned to regularly run the Hot Backup script on the server, following the instructions in *Chapter 4, Backup and Recovery*. Hot backup files should be archived to tape. In the event of repository corruption or a hard disk failure on the server, this will enable recovery to the state at the most recent hot backup.

For additional protection, the CORE administrator can enable full transaction logging on the server as per the instructions in the following section. This will enable recovery beyond the last hot backup to the very point where the failure occurred (so long as the transaction logs were not destroyed). However, the cost of full transaction logging is reduced performance, and as repository corruption has never been observed, it is recommended that full transaction logging be left off.

### *Turning-On Full Logging in CORE Enterprise Server*

1. Stop the CORE Stone using *Start > Programs > CORE Enterprise 4.0 Server > Stop CORE Stone*.
2. Using Notepad, edit the SYSTEM.CONF file located in the COREServer\Data directory.
  - Open the file.
  - Go to the end of the file using <Ctrl>+<End>.
  - Find the last instance of STN\_TRAN\_FULL\_LOGGING = FALSE;
  - Change FALSE to TRUE
  - Save the file.
  - Exit Notepad.

3. Restart the CORE Stone using *Start > Programs > CORE Enterprise 4.0 Server > Start CORE Stone*.

## ***Turning-Off Full Logging in CORE Enterprise Server***

1. Perform a hot backup of the database using *Start > Programs > CORE Enterprise 4.0 Server > Hot Backup*. Verify that the operation completed successfully by looking at *HotBackup.out* in the logs directory. See *Chapter 4, Backup and Recovery*.
2. Stop the COREStone using *Start > Programs > CORE Enterprise 4.0 Server > Stop CORE Stone*.
3. Using Notepad, edit the *SYSTEM.CONF* file located in the *COREServer\Data* directory.
  - Open the file.
  - Go to the end of the file using <Ctrl>+<End>.
  - Find the last instance of *STN\_TRAN\_FULL\_LOGGING = TRUE*;
  - Change TRUE to FALSE
  - Save the file.
  - Exit Notepad.
4. Rename *CORERepository\extent0.dbf* to *FullLogging.dbf*. Save the file until this procedure is complete and you have confirmed that the *CORE Enterprise Server* has been returned to operational status.
5. Copy *COREServer\Backup\extent0.dbf* to the *CORERepository* directory.
6. Locate the hot backup file created by step 1 in the *COREBackups* directory. Its name is derived from the current date (in yymmdd format). Rename it to *extent0.dbf*.
7. Run the script to restore data by double clicking on *RestoreWithPartialLogging.bat* file located in the *COREServer\scripts* directory. Verify that the operation completed successfully by examining *RestoreWithPartialLogging.out* in the *COREServer\logs* directory. All statements should have returned successful results.



## F. Upgrading from Previous Versions

Please read all the instructions in this section before beginning the upgrade process. Details on how to perform each task may be found in the CORE Workstation User Reference Guide. When exporting files, be sure to use the default names or names that identify the projects from which they were exported.

### *Upgrading from Enterprise 3.1 to 4.0*

- Be sure to establish a time after which no further changes may be made to your CORE Enterprise 3.1 repository.
- When it is certain that no users will be making further changes to the CORE Enterprise 3.1 repository, the CORE administrator should perform a full database export from every project in the repository.

Note
It is important to perform the exports from the Administrator account to ensure that all elements and attribute values are exported.

- If schema customizations have been made to any projects in the CORE Enterprise 3.1 repository, the CORE administrator should also export the schemas from those projects.
- If custom hierarchy diagram definitions or custom sort block definitions have been added to any projects in the CORE Enterprise repository, the CORE administrator should also export them from those projects using the Export Settings command.
- To migrate your CORE users, user settings, and groups from your CORE Enterprise 3.1 repository to your 4.0 repository, the CORE administrator should also open the User Group Tool and export users and groups. The User Group Tool will prompt you for a directory in which to store a series of files, one for each user and group.
- Archive a hot backup of the final state of your CORE Enterprise 3.1 repository, should you wish to reinstall it for any reason. You can find instructions for this process in the *Chapter 4, Backup and Recovery*.

**Note**

Transaction logs generated by the CORE Enterprise 3.1 server are not compatible with the CORE Enterprise 4.0 server. If any 3.1 logs exist in the CORELogs directory, the CORE Enterprise 4.0 server will simply overwrite the existing logs as necessary. To avoid confusion, it is recommended that the existing 3.1 transaction logs be archived and removed from the CORELogs directory before upgrading the Enterprise Server software.

- Unschedule the CORE Enterprise 3.1 automated maintenance scripts. At a command prompt, view the maintenance script execution schedule using the “*at | more*” command. Remove *CORE Enterprise Server* scripts from the schedule using “*at <id> /delete*”, where *<id>* is a task number obtained by using the “*at | more*” command. If all the tasks in the schedule belong to CORE Enterprise, you can remove all tasks from the schedule with “*at /delete*”.
- Run the CORE Enterprise 4.0 Server installer from the CORE 4.0 CD. The installer will automatically upgrade the existing CORE Enterprise 3.1 Server file configuration. During the upgrade process, the installer will prompt for the following information:
  - Database Update Ports – These values are the UDP port numbers on which the CORE Enterprise Server will send database updates to the CORE Enterprise Clients.

**Note**

These two values must be unique. Additionally, each of these values must be different from the update port settings used within any other CORE Enterprise Server configuration on your network.

- Install – Select the *Install* button to allow the installer to upgrade the CORE Enterprise server file configuration.

**Note**

During the upgrade process the following will occur:

- The installer will attempt to stop the netldi51 and COREStone services if necessary. If the installer is not able to stop the services, it will not be able to upgrade successfully. In this case, verify that all CORE Enterprise clients are logged out of the server, and manually stop the services from the services section in the Windows control panel.
- The installer will backup the existing extent0.dbf file to extent0.dbf.bak.
  - Reboot – Select *yes* to reboot the server.
- After the server has rebooted, verify that the netldi51 and COREStone services have been successfully started. If either of the services cannot start due to a login error, try the corrective measures outlined in the *Troubleshooting* section near the end of *Appendix B*.
- Be sure to upgrade all CORE Enterprise clients that use the server from version 3.1 to version 4.0. A CORE Enterprise 3.1 client will not be able to use the CORE Enterprise 4.0 server.
- Once the CORE Enterprise 4.0 server is installed and operational, the CORE administrator should log in with a CORE Enterprise 4.0 client and

import the users and groups previously exported from CORE Enterprise 3.1. Open the User Group Tool and import the users and groups, choosing the directory where the ACF files were previously stored.

- In the new CORE Enterprise 4.0 repository, the CORE administrator should create an empty project with the same name as each of the projects previously exported from CORE Enterprise 3.1.
- Into each new project, the CORE administrator should import all the appropriate files: schema first, if applicable, then database and settings (hierarchy diagram and sort block definitions), if applicable.

<b>Note</b>
Database imports are significantly slower under CORE Enterprise than under CORE Workstation. For best results, perform the imports via a CORE Enterprise Client installed on the same machine as a server, and perform the imports at an off-peak time.

## Upgrading from Enterprise 3.0 to 4.0

- Be sure to establish a time after which no further changes may be made to your CORE Enterprise 3.0 repository.
- When it is certain that no users will be making further changes to the CORE Enterprise 3.0 repository, the CORE administrator should perform a full database export from every project in the repository.

<b>Note</b>
It is important to perform the exports from the Administrator account to ensure that all elements and attribute values are exported.

- If schema customizations have been made to any projects in the CORE Enterprise 3.0 repository, the CORE administrator should also export the schemas from those projects.
- If custom hierarchy diagram definitions or custom sort block definitions have been added to any projects in the CORE Enterprise repository, the CORE administrator should also export them from those projects using the Export Settings command.
- To migrate your CORE users, user settings, and groups from your CORE Enterprise 3.0 repository to your 4.0 repository, the CORE administrator should also open the User Group Tool and export users and groups. The User Group Tool will prompt you for a directory in which to store a series of files, one for each user and group.
- Archive a hot backup of the final state of your CORE Enterprise 3.0 repository, should you wish to reinstall it for any reason. You can find instructions for this process in the *Chapter 4, Backup and Recovery*.
- Unschedule the CORE Enterprise 3.1 automated maintenance scripts. At a command prompt, view the maintenance script execution schedule using the “*at | more*” command. Remove *CORE Enterprise Server* scripts from

the schedule using “*at <id> /delete*”, where *<id>* is a task number obtained by using the “*at | more*” command. If all the tasks in the schedule belong to CORE Enterprise, you can remove all tasks from the schedule with “*at /delete*”.

- Run the CORE Enterprise 4.0 Server installer from the CORE 4.0 CD. The installer will automatically upgrade the existing CORE Enterprise 3.0 Server file configuration. During the upgrade process, the installer will prompt for the following information:
  - Location of the CORE 4.0 repository – If the existing CORE 3.0 Repository location is specified, the installer will backup the existing extent0.dbf file to extent0.dbf.bak. For best performance, choose a physical hard disk drive that Windows does not use for virtual memory. The default is **C:\CORERepository**.
  - Location of the CORE 4.0 transaction logs – For best performance, choose a physical hard disk drive that Windows does not use for virtual memory. For even better performance, choose a physical hard disk that is also separate from the CORE repository location selected above. The default is **C:\CORELogs**.

Note
Transaction logs generated by the CORE Enterprise 3.0 server are not compatible with the CORE Enterprise 4.0 server. If the existing 3.0 CORELogs location is specified, the CORE Enterprise 4.0 server will simply overwrite any existing logs as necessary. To avoid confusion, it is recommended that either a different location be specified or the existing 3.0 transaction logs be archived and removed after the upgrade process has been successfully completed.

- Database Update Ports – These values are the UDP port numbers on which the CORE Enterprise Server will send database updates to the CORE Enterprise Clients.

Note
These two values must be unique. Additionally, each of these values must be different from the update port settings used within any other CORE Enterprise Server configuration on your network.

- Install – Select the *Install* button to allow the installer to upgrade the CORE Enterprise server file configuration.

Note
During the upgrade process, the installer will attempt to stop the netldi51 and COREStone services if necessary. If the installer is not able to stop the services, it will not be able to upgrade successfully. In this case, verify that all CORE Enterprise clients are logged out of the server, and manually stop the services from the services section in the Windows control panel.

- Reboot – Select *yes* to reboot the server.
- After the server has rebooted, verify that the netldi51 and COREStone services have been successfully started. If either of the services cannot start due to a login error, try the corrective measures outlined in the *Troubleshooting* section near the end of *Appendix B*.

- Be sure to upgrade all CORE Enterprise clients that use the server from version 3.0 to version 4.0. A CORE Enterprise 3.0 client will not be able to use the CORE Enterprise 4.0 server.
- Once the CORE Enterprise 4.0 server is installed and operational, the CORE administrator should log in with a CORE Enterprise 4.0 client and import the users and groups previously exported from CORE Enterprise 3.0. Open the User Group Tool and import the users and groups, choosing the directory where the ACF files were previously stored.
- In the new CORE Enterprise 4.0 repository, the CORE administrator should create an empty project with the same name as each of the projects previously exported from CORE Enterprise 3.0.
- Into each new project, the CORE administrator should import all the appropriate files: schema first, if applicable, then database and settings (hierarchy diagram and sort block definitions), if applicable.

Note
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Database imports are significantly slower under CORE Enterprise than under CORE Workstation. For best results, perform the imports via a CORE Enterprise Client installed on the same machine as a server, and perform the imports at an off-peak time.
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## *Upgrading from Enterprise 2.1 to 4.0*

- Be sure to establish a time after which no further changes may be made to your CORE Enterprise 2.1 repository.
- When it is certain that no users will be making further changes to the CORE Enterprise 2.1 repository, the CORE administrator should perform a full database export from every project in the repository.

Note
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It is important to perform the exports from the Administrator account to ensure that all elements and attribute values are exported.
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- If schema customizations have been made to any projects in the CORE Enterprise 2.1 repository, the CORE administrator should also export the schemas from those projects.
- If custom hierarchy diagram definitions or custom sort block definitions have been added to any projects in the CORE Enterprise repository, the CORE administrator should also export them from those projects using the Export Settings command.
- To migrate your CORE users, user settings, and groups from your CORE Enterprise 2.1 repository to your 4.0 repository, the CORE administrator should also open the User Group Tool and export users and groups. The User Group Tool will prompt you for a directory in which to store a series of files, one for each user and group.

- Archive a hot backup of the final state of your CORE Enterprise 2.1 repository, should you wish to reinstall it for any reason. You can find instructions for this process in the *Chapter 4, Backup and Recovery*.
- Uninstall the CORE Enterprise 2.1 server. Instructions for this process are the same as the instructions in this appendix for uninstalling CORE Enterprise 4.0 server.
- Install CORE Enterprise 4.0 server according to the instructions in the *Appendix B (Windows NT)* or *Appendix C (Windows 2000)*.
- Be sure to upgrade all CORE Enterprise clients that use the server from version 2.1 to version 4.0. A CORE Enterprise 2.1 client will not be able to use the CORE Enterprise 4.0 server.
- Once the CORE Enterprise 4.0 server is installed and operational, the CORE administrator should log in with a CORE Enterprise 4.0 client and import the users and groups previously exported from CORE Enterprise 2.1. Open the User Group Tool and import the users and groups, choosing the directory where the ACF files were previously stored.
- In the new CORE Enterprise 4.0 repository, the CORE administrator should create an empty project with the same name as each of the projects previously exported from CORE Enterprise 2.1.
- Into each new project, the CORE administrator should import all the appropriate files: schema first, if applicable, then database and settings (hierarchy diagram and sort block definitions), if applicable.

Note
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Database imports are significantly slower under CORE Enterprise than under CORE Workstation. For best results, perform the imports via a CORE Enterprise Client installed on the same machine as a server, and perform the imports at an off-peak time.
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