TeamConnection frequently asked questions: how to do routine operating system tasks

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This technical report contains a collection of hints and tips for TeamConnection users and family administrators that must cope with the heterogeneous operating systems environments supported by TeamConnection.

This document focuses on several system-related tasks that are different across the diverse platforms available to developers using TeamConnection. Some sample tasks are:

- How to start and stop the ObjectStore database
- How to query for the free space of a file system

ITIRC KEYWORDS

- TeamConnection

- OEM platforms

- Operating systems

- AIX

- HP-UX

- Solaris

- OS/2

- ObjectStore

- Windows NT

- Windows 95

- Windows 3.1

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INTRODUCTION

This document contains a collection of tips and hints on how to do several tasks that differ across the diverse operating system platforms in which the TeamConnection (TC) product runs.

This document separates tasks into those performed by family administrators and system administrators, and those performed by general users of TeamConnection. Each task is grouped, where appropriate, into "UNIX" (that is, AIX, HP-UX and Solaris) and "Intel" (that is, OS/2, Windows NT, Windows 95 and Windows 3.1) sections, since there are typically significant differences in how tasks are performed for each group.

Finally, there are subsections where differences exist between specific operating systems in a group. For example, the administrative tool in AIX is SMIT and the corresponding tool for HP-UX is SAM.

SUPPORTED PLATFORMS

The operating systems that have both server and client code are:

    AIX Version 4
    HP-UX Version 10
    Solaris Version 2 (see note)
    OS/2 Warp
    Windows NT

The operating systems that have only client code are:

    Windows 95
    Windows 3.1

The only database supported by TeamConnection is:

    ObjectStore 4.x (currently 4.02)

NOTES ON THE TERMINOLOGY USED IN THIS DOCUMENT

- When this document was prepared, the port to the Solaris platform was in progress.

- Some tasks are UNIX specific due to the multi-user characteristics of this class of operating system.

- The names of the operating systems will be used without the version numbers, when there

is no need to specify it. For example, the term "AIX" means in this document "AIX Version 4".

- The term UNIX will be used as a generic term for all the different UNIX versions when there is no need to specify one of them.

- The term Windows will be used as a generic term for all the different Windows versions when there is no need to specify one of them.

- The term Intel will be used as a generic term for the non-UNIX operating systems that run under Intel processors (OS/2 and Windows) when there is no need to specify one of them.

SUGGESTION FOR INTEL USERS

We strongly recommend installing a package of UNIX-like commands for your Intel platform.

These packages are generally inexpensive and provide between 30 and 100 useful tools that are common to UNIX operating systems. These tools will allow you to perform most of the UNIX commands described in this document on your Intel operating system.

You may try to find such packages from the Internet by using search engines such as "http://www.yahoo.com/" and using keywords such as "OS/2 utilities" or "Windows NT utilities".

ABOUT THIS AND PREVIOUS TECHNICAL REPORTS

This document, as well as other recently released technical reports related to TeamConnection, contains some information that was previously available in other "unofficial" documents. We have endeavored to better organize the information and improve its read-ability so that you will find it more useful.

This technical report is based on the technical report TR 29.2180 **How to do routine tasks in the OEM Platforms for CMVC**.

ACKNOWLEDGEMENTS

Many of the questions and answers that are compiled in this technical report were obtained from the TEAMC and CMVC forums in the IBMPC conferencing disk and from the CMVC6000 forum in the IBMUNIX conferencing disk.

We want to thank the main participants in these electronic forums for their support!

Also, we want to thank Dodde Stark for editing this technical report.

END USER TASKS

This section describes some common tasks and useful information for TeamConnection client users.

WHERE IS THE TEAMCONNECTION CODE LOCATED?

The default location for the TeamConnection code is:

AIX   `/usr/teamc`

HP-UX   `/opt/teamc`

Solaris   `/opt/teamc`

OS/2   `c:\teamc`

Windows 3.1 `c:\ProgramF\TeamConn`

Windows 95 and NT `c:\Program Files\TeamConnection`

HOW TO FIND OUT THE VERSION OF TEAMCONNECTION?

GUI - all platforms

The version of the TeamConnection GUI for all platforms can be found from the Help pulldown, option "Product Information".

UNIX - Client/Server

The version of the TeamConnection server and client for UNIX can be found as follows:

1. Find out the directory where the daemon (teamcd) or the client (teamc) is installed:

   - For AIX or Solaris, enter:

     `which teamcd`

   - For HP-UX, enter:

     `whence teamcd`

2. Change to the directory shown in the step above.

3. Find out the 'what' strings and search for 'teamc':

- For the server, do the following:

```
what teamcd | grep teamc
```

- For the client, do the following:

```
what teamc | grep teamc
```

Intel - Client/Server

The client and code for Intel has the same "what" strings and if you have access to a similar "what" and "grep". command, then you can find out the version of the TeamConnection executables.

For OS/2 and Windows NT, TeamConnection provides a version of the "what" command: `tcwhat`.

- Locate the TeamConnection "bin" directory on the path:

```
echo %PATH%
```

or

```
PATH
```

- Change to the directory shown above.

- Find the 'what' strings and manually search for 'teamc':

```
tcwhat teamcd | more
```

HOW TO FIND OUT THE VERSION OF THE OPERATING SYSTEM?

UNIX - operating system version

You can use the command "uname -a".

The output will be similar to:

```
AIX                     1         4

operating-system-name   release   version
```

AIX level version

For AIX, you can then find the level (that is, version.release.level) using the "oslevel" command.

X-Windows server version

The X-Windows server is the program the manages the graphical display on your system and communicates with the TeamConnection GUI for UNIX. The X-Windows server needs to be running when you run the following command that displays the release number, among other data:

```
xrdb -symbols
```

Intel - operating system version

You can use the command "ver".

WHERE ARE THE CUSTOMIZATION FILES FOR THE TEAMCONNECTION GUI?

UNIX - Customization files

There are two customization files for the GUI:

- Teamcgui

  This is the X Resource File where the user can specify the font size, the colors for the windows, etc.

  If this file does not exist, then the GUI will NOT create it in the $HOME directory; instead, the GUI will rely on the system-wide Teamcgui resource file which is located in /usr/lib/X11/$LANG/app-defaults/Teamcgui.

  The user could copy the sample /usr/teamc/samples/Teamcgui into the $HOME directory and customize it.

  For advanced users: to guarantee that your new Teamcgui changes are loaded, do the following:

  1. Exit teamcgui
  2. xrdb -remove
  3. xrdb -load Teamcgui

- teamc20.ini

  This is the file that contains the tasks shown in the TeamConnection GUI Tasks window and contains values used by functions in the GUI.

  This file is created if it does not exist (such as when using the GUI for the first time) and resides in the $HOME directory for the user account.

Note: It is strongly recommended that the users should not attempt to edit this file.

Intel - Customization files

In OS/2 and Windows, the teamc20.ini file is stored where the operating system code is stored, such as C:\OS2 or C:\WINDOWS. These files are updated through the settings page of the teamcgui. It is strongly recommended that the users should not attempt to edit this file.

IS THERE A SAMPLE PROFILE FOR THE TEAMCONNECTION END USER?

UNIX - Sample profiles

The following sample profile can be used as the basis for the profile of a UNIX user account that will use TeamConnection (end-user). The user will have to read the entire profile and delete the comment character of those lines that are appropriate for the operating system to be used.

```
/usr/teamc/samples/profile.user
```

Intel - Profile information

Since Intel operating systems are single user systems, the TeamConnection installation script addresses all environmental configuration needs.

UNIX: HOW TO SEE THE CONTENTS OF FILES THAT ARE ACTIVE?

To see the up-to-date contents of the files that are active, such as nohup.out and the audit/database logs, do the following:

1. Enter the following command:

   ```
   tail  -f   filename
   ```

2. Observe that the output is scrolling when the file is being updated.

3. If it is no longer scrolling, then the file is not being updated anymore.

4. Press Ctrl+C to exit from the tail command.

UNIX: HOW TO LINK FILES AND DIRECTORIES USING SYMBOLIC LINKS?

To establish a symbolic link between a 'real' file/directory and a 'shadow' file/directory do:

```
ln -s real-entity   shadow-entity
```

Use the following command in order to see the real file/directory of a linked file/directory:

```
ls -l
```

HOW MUCH SPACE IS STILL AVAILABLE ON DISK?

UNIX - Space in a file system

To show, in kilobytes, the space left in the file system, use:

AIX   df -k

           Without "-k" the default is 512 byte blocks.

HP-UX   bdf

Solaris   df -k

Intel - Space on each drive

To show the space available on any logical disk drive, use:

```
dir /w [DRIVE-LETTER]
```

or

```
chkdsk [DRIVE-LETTER]
```

HOW TO FIND OUT ALL THE PROCESSES THAT ARE RUNNING?

UNIX - processes

To see the processes related to TeamConnection that are running, do the following:

- To find out how many TeamConnection family server daemons are running on the entire system:

```
ps -ef | grep  teamcd
```

- To find out all of the processes running in a family account:

  ```
  ps -fu FAMILY_ACCOUNT
  ```

Note: In TeamConnection, there are four different processes that are typically running: teamcd, teamagnt, teamproc and teamcgui. You will also intermittently see teamc and any miscellaneous tools being run in the family account.

Intel - Processes

OS/2 and Windows NT - process status

```
pstat | more
```

Windows 3.1 and Windows 95

You can use the Task Manager to find out which processes are running.

HOW TO TEST THE CONNECTIVITY OF A HOST?

Sometimes it is important to test the connectivity of a host in order to proper diagnose a problem.

Using the ping command

The "ping" command is the first tool that the user should use to diagnose possible network problems.

The TCP/IP "ping" command can be used to test if a given host specified by a host name or host IP address is registered as a valid host and actively connected to the network.

If the host name or IP address is not registered as a valid identifier, then the ping command will fail.

If the host is active but not connected to the network then the "ping" command will not be able to receive the expected message.

For example:

1. At a prompt, type "ping testfam".

   If you receive information that is similar to the following, you can successfully connect to your TeamConnection family:

```
PING testfam.company.com: 56 data bytes
64 bytes from 1.23.457.78: icmp_seg:0. time=0. ms
64 bytes from 1.23.456.78: icmp_seg:1. time=0. ms
64 bytes from 1.23.456.78: icmp_seg:2. time=0. ms
```

2. Press Ctrl+C to end the command.

3. If you receive the message "unknown host testfam", you cannot connect to the family. Verify that the data in the hosts and services files is correct, and then try the command again.

   If you still do not get the correct response, contact your TCP/IP administrator to solve the problem.

Using the host command (or equivalent)

In AIX and in OS/2 there is a command called "host" which gets the IP address given a host name or vice versa. This command uses the local /etc/hosts file first, and if the host name or the IP address is not found there, then the network name server is contacted next.

In some networks, there could be a mismatch between the host name and the IP address. Do the following to verify that the hosts file is specified correctly:

1. Type "host family_name", where family_name is the name of your TeamConnection family.

   The information returned should match the number and name specified in your hosts file. For example, the system response might be as follows:

   ```
   testfam.company.com = 9.12.345.67
   ```

2. Type "host ip_address", where ip_address is the IP address of your machine.

   The information returned should match the number and name specified in your hosts file. For example, the system response might be as follows:

   ```
   testfam.company.com = 9.12.345.67
   ```

   If you do not receive the expected response, contact your TCP/IP administrator to solve the problem.

   In some networks the second step gives a different host name and this will cause problems with TeamConnection.

In other platforms we provide the "tchost" or "tchostw" command which provides the basic functionality of the "host" command provided in AIX and OS/2.

Using the nslookup command

The TCP/IP "nslookup" command skips the local hosts file and queries directly the network name server, thus its name: Name Server Look Up. It provides the host name and IP address of the name server, followed by the target host name and IP address.

ADMINISTRATIVE TASKS

This section describes some common tasks that the administrator user of TeamConnection is likely to do with the operating system, in general.

WHICH ARE THE MAIN ADMINISTRATION TOOLS?

UNIX - Administrative GUI tools

AIX   The main tool is "smit" for GUI or "smitty" for a character-based interface. for command line interface.

HP-UX   The main tool is "sam" for GUI. This tool is very hard to use when using the command line.

Solaris   The main tool is "admintool" for GUI.

Intel - Administrative Tools

OS/2

The vast majority of administrative actions can be found by opening the System Icon. However, TeamConnection has its own folder and an icon for an Administration Tool, "tcadmin", that is used for administration tasks related to TeamConnection.

Windows NT and Windows 95

Generally performed administrative tasks are split between several icons. Here are the most commonly used for TeamConnection administration:

In Windows NT 4 and Windows 95

The system administration facilities in Windows 95 are in the "Start" -> "Control Panel" program selection.

In Windows NT 3.51:

- "Main Icon"->"System Icon"
- "Main Icon"->"Services Icon"
- "Administration Tools Icon"->"Event Viewer Icon"

- "TeamConnection"->"TeamConnection Administration"

Windows 3.1

The limited system administration facilities are in:

- "Main Icon"->"System Icon"

IS THERE A SAMPLE PROFILE FOR A TEAMCONNECTION FAMILY?

UNIX - Family profile

The following sample profile can be used as the basis for the profile of a UNIX user account that will serve as a TeamConnection family:

`/usr/teamc/install/profile.family`

The TeamConnection family administrator will have to read the entire profile and revome the comment character of those lines that are appropriate for the operating system in question.

Intel - Profile information

Since Intel operating systems are single user systems, the TeamConnection installation script addresses all environmental configuration needs.

WHERE ARE THE ERROR MESSAGES FROM THE TC DAEMON AND DATABASE?

UNIX - syslog

Errors encountered by TeamConnection are recorded in the system log file (syslog) when the syslog daemon (syslogd) is activated. If syslogd is not active, then the error messages are sent to the console of the TeamConnection server workstation; however, these messages eventually will scroll off the screen.

Because multiple families may be supported by a single TeamConnection server, the messages logged in syslog may pertain to multiple families.

It is important to activate the syslog daemon so that TeamConnection errors and database errors can be logged for subsequent problem resolution. To activate the syslog daemon do the following:

1. Login as root.

2. Use the touch command to create the syslog file if it does not exist already in the appropriate directory:

   AIX   `touch /var/spool/syslog`

   HP-UX   `touch /var/adm/syslog/syslog.log`

   Solaris   `touch /var/adm/messages`

3. When creating the syslog file, set the file permissions according to the directions for the operating system.

   - AIX:

     ```
     chmod 666          /var/spool/syslog
     chown root:system  /var/spool/syslog
     ```

   - HP-UX:

     ```
     chmod 666          /usr/adm/syslog/syslog.log
     chown root:system  /usr/adm/syslog/syslog.log
     ```

   - Solaris:

     ```
     chmod 666          /var/adm/messages
     chown root:system  /var/adm/messages
     ```

   Notes:

   a. If you do not want to use "chmod 666", you can use any of the following:

     ```
     chmod a=rw   /var/adm/syslog
         or
     chmod ugo=rw /var/adm/syslog
     ```

   b. The command "chown root:system" is a short way to do the following:

     ```
     chown root   /var/spool/syslog
     chgrp system /var/spool/syslog
     ```

4. Edit the /etc/syslog.conf file and add the following line:

   Note: You must use a tab character to separate the values.

   AIX   `*.warning /var/spool/syslog`

   HP-UX   `*.warning /var/adm/syslog/syslog.log`

   Solaris   `*.warning /var/adm/messages`

5. Stop and restart syslogd after modifying syslog.conf and creating the log file.

a. AIX:

```
stopsrc  -s syslogd
startsrc -s syslogd
```

b. HP-UX:

```
kill -HUP  cat /var/run/syslog.pid
```

c. Solaris

```
ps -ef | grep syslog
# Find the process id for syslogd
kill -9 <process-id-syslogd>
        ******************* => use the process id
/usr/sbin/syslogd
```

6. Verify that the syslog daemon is running:

```
ps -ef | grep syslog
```

   You should see an entry for syslogd.

7. Verify that the syslog daemon is able to write into the syslog file. The following test case can help you to determine if the syslog has been configured properly:

   a. Login with a TeamConnection family id.

   b. Use 'su root' and give a wrong password. This action will fail and will add a warning message at the bottom of the syslog.

   c. To quickly view the last 10 lines of the syslog, do:

```
tail <syslog-file-name>
     ****************** => use the appropriate name
```

   d. If the syslog is properly set and running, then a message similar to this one will be added to the syslog:

```
Apr 19 hostname su: BAD SU from userid to root at /dev/pts/3
 or
May  1 oem-hp03 syslog: su : - ttyp1 cmhp3ora-root
```

8. If you want to cleanup the syslog, you can use the following command:

```
cp /dev/null <syslog-file-name>
             **************** => use the appropriate name
```

9. Monitor the syslog file at regular intervals so that any required maintenance or problem resolution can be performed.

<u>**Intel - syslog**</u>

The syslog facility is not a native application for OS/2 and Windows, TeamConnection provides an application specific syslog.

The syslog file resides in the sample location where the TeamConnection Family Server (teamcd.exe) resides, and it is called "syslog.log".

WHERE ARE THE HOST AND SERVICES FILES?

The "hosts" file is used to indicate the IP address of a host and aliases for that host. The "services" file is used to indicate the port number of the service (TeamConnection family).

UNIX   `/etc/hosts` and `/etc/services`

It is recommended that the system administration utilities should be used to update these files, such as smit in AIX and sam in HP-UX.

OS/2   They are located in the directory described in the environment variable "SET ETC"

Windows 3.1 They are located in the appropriate directory that differ in each TCP/IP product. In IBM TCP/IP for DOS, the directory is TCPDOS\ETC.

Windows 95 They are located where the operating system is located, such as C:\WINDOWS. The "hosts" file by default does not exist, but it can be constructed from the sample "Host.sam" which, by default, resides in C:\WINDOWS.

Windows NT They are located in the subdirectory SYSTEM32\DRIVERS\ETC, where the operating system is located. The default is C:\WINNT.

HOW TO CHANGE THE OWNER/GROUP OF A FILE?

<u>**UNIX - chown**</u>

AIX 4   chown user:group file

HP-UX   chown user:group file

Solaris   chown user; chgrp group

Notes:

 1. Using the command 'ls -l' will show both the owner and the group.

 2. The command "chown user:group" is a short way to do the following:

```
chown user   file
chgrp group  file
```

Intel - file ownership

Intel operating systems do not have the concept of ownership for ordinary files. Windows 95 and NT do maintain separate configuration files for each user login, but this is not a general purpose feature.

HOW TO EXPORT DIRECTORIES TO BE MOUNTED BY OTHER HOSTS?

This section assumes that you are using TCP/IP and the NFS daemon to export your filesystems. For Intel platforms and AIX there is support for IBM OS/2 Warp Server and other traditional Intel "net use" facilities.

UNIX - exporting directories

AIX - /etc/exports

You can use the smit tool to specify the directories to be exported; this information is stored in /etc/exports:

 1. Login as root.

 2. Enter `smit` (GUI) or `smitty` (ASCII)

 3. Select "Communications Applications and Services"

 4. Select "NFS"

 5. Select "Network File System"

 6. Select "Add a Directory to exports lists"

AIX also allows client access to IBM OS/2 Warp Server drivers through "net use", starting with AIX 4.1.4.

HP-UX

You can use the sam tool to specify the directories to be exported; this information is stored in /etc/exports:

1. Login as root.

2. At the command prompt, enter `sam`.

3. Double click on the Networking and Communications icon.

4. Double click on the Networked File Systems icon.

5. Double click on the Exported Local Filesystems icon.

6. From the menu bar, select Actions. Then select Add Exported File System.

7. In the Local Directory Name field, enter the absolute path name of the directory to export. Also select other options on the same screen as appropriate for your system.

8. Then click on the OK box. This will export your directory to the specified machines immediately.

Solaris

The Solaris admintool does NOT provide a convenient method of updating /etc/dfs, so we have provided the manual process below:

1. Login as root.

2. Change directory to /etc/dfs.

3. Edit the file dfstab which is a file containing commands for sharing resources across a network. Append a share command to the end of this file. Use the man command to find out more information about the share command. Add a share command in the dfstab file. For example:

```
share -F nfs -o rw=host -d "teamc client" /export/home/dir
```

4. Save and exit the file.

5. For the export to take effect immediately, execute the same share command on the command line.

Intel - Exporting directories or drives

OS/2

IBM TCP/IP provides an NFS daemon. Since this is a separate product from the operating system we will only cover this facility briefly.

1. Add export directories by updating the "exports" file in the directory pointed to by the ETC environment variable.

2. Restart TCP/IP with the "tcpstart" command.

3. Verify the new export with the "showexp SYSTEM_NAME" command.

Note: We have found the "showexp" command to be unique to OS/2. It is very useful for checking NFS exports in a heterogeneous environment.

Windows NT, Windows 95 and Windows 3.1

The operating system does NOT support an NFS daemon (the process that manages an NFS export) in the operating system.

The NFS server for this platform is provided by third-party vendors. Follow the instructions provided by the vendor.

HOW TO MOUNT DIRECTORIES EXPORTED BY A REMOTE HOST?

UNIX - mount command

The best way to mount directories that are exported by a remote host is to use the system administration tool. If you have mounted directories as part of your normal system configuration, you can use the system administration tool and have the operating system mount the directories during bootup and initialization. Note that if your network is experiencing problems, your system may hang or take a long time to complete the bootup process.

Mounting directories using manual commands

1. Login as root.

2. Enter the following command:
```
mount  carcps21:/home/build          /home/build
          |           |                   |
        host     remote directory    local directory
                 to be mounted
```

AIX mount

AIX supports administering mounts through smit.

AIX also supports "net use" for drives exported by OS/2 Warp Server.

Intel - mount command

OS/2:

OS/2 mount syntax:
```
mount  carcps21:c&colon\home\build                    x:
         |     |          |                    |
       host  remote     remote directory    local drive
             drive if   to be mounted
             an Intel
             Server
```

Windows NT, Windows 95 and Windows 3.1

The operating system does NOT support an NFS client (the process that mounts an exported file system from a remote host) in the operating system.

The NFS client for this platform is provided by third-party vendors. Follow the instructions provided by the vendor.

USING CD-ROMS

CD-ROM is the only medium IBM provides for installing the complete TeamConnection package. The use of CD-ROM is well documented in the TeamConnection Administration Guide.

AIX - CD-ROMS

Before you can use a CD-ROM in AIX, you have to mount the CD-ROM. Once the CD-ROM is mounted, then you can access it.

Mounting a CD-ROM in AIX

1. Insert the CD-ROM into the CD-ROM drive.

2. Log in as user root or do "su - root" to login as root and use the profile.

3. Create a directory for the CD-ROM /cdrom by entering `mkdir /cdrom`.

4. Enter `smit` to add a CD-ROM file system.

5. Select "System Storage Management (Physical & Logical Storage)"

6. Select "File Systems"

7. Select "Add / Change / Show / Delete File Systems."

8. Select "CDROM File Systems"

9. Select "Add a CDROM File System"

10. Select a "Device name", such as "cd0".

    The CD-ROM file system device names must be unique. You may need to delete a previously defined CD-ROM file system if there is a conflict.

11. Type "/cdrom" for "Mount Point".

12. Select "OK" (or press enter if using the smit ASCII interface).

13. Return to the previous smit level, "System Storage Management (Physical & Logical Storage)"

14. Select "File Systems".

15. Select "Mount a File System".

16. Select "/dev/cd0" for "File System name".

17. Select "/cdrom" for "Directory over which to mount".

18. Select "cdrfs" for "Type of file system".

19. Select "yes" for "Mount as a READ-ONLY system.".

20. Select "OK" (or press enter if using the smit ASCII interface).

21. Exit smit.

Now you are ready to install the appropriate TeamConnection components.

AIX - Installing TeamConnection from a CD-ROM using tar files

To install the TeamConnection code from tar files using the CD-ROM in AIX, do the following:

1. You must have added and mounted a CD-ROM.

2. Log in with root authority.

3. Change the directory to /cdrom.

4. Run the installation script by typing:

   ```
   ./tcinst.ksh
   ```

   Note: The tcinst.ksh script can be copied to a directory not on the CD-ROM, then edited to customize your installation.

5. Follow the instructions in the installation script to install the TeamConnection components.

6. After the installation is complete, type the following commands to unmount the CD-ROM:

   ```
   cd ..
   umount /cdrom
   ```

7. Eject the CD.

HP-UX - Using CD-ROMs

Before you can use a CD-ROM in HP-UX, you have to mount the CD-ROM. Once the CD-ROM is mounted, then you can access it.

HP-UX - Mounting a CD-ROM

Do the following to add and mount a CD-ROM file system:

1. Insert the installation CD into the CD-ROM drive.

2. Log in as user ROOT or type su - root.

3. Issue the mount command to determine if the CD-ROM file system is mounted and operational.

   Verify that /CDROM is listed; if, not, then do the following:

   a. To create a directory for the CD-ROM, type mkdir /CDROM.

   b. Type: sam &

   c. Select Disks and File Systems.

   d. Select Disk Devices.

e. Select the entry CDFS (for CD-ROM File System), then from the menu bar select "Actions" and choose the option "View more information".

f. Click on the Show Device Files. Do not select raw devices such as /dev/rdsk/c0t2d0.

g. Write down the value for Device File, such as /dev/dsk/c0t2d0

h. Close the View More Information window.

i. Close the Disks and File Systems window.

j. Exit sam.

k. To mount the CD-ROM device file identified above, type:

```
mount  /dev/dsk/c0t2d0  /CDROM
```

l. Issue the mount command again and verify that /CDROM is listed.

HP-UX - Installing TeamConnection code from CD-ROM

To install the TeamConnection code from tar files from CD-ROM in HP-UX, do the following:

1. You must have added and mounted a CD-ROM.

2. Log in with root authority.

3. Change the directory to /CDROM.

4. Run the installation script by typing "./TCCDUTIL.KSH;1" (in uppercase and inside double quotes).

   This shell script will map the file names to lowercase and remove the ISO 9660 file name extensions in the temporary directory /tmp/tccdrom; then it will invoke the actual installation shell script (tcinst.ksh).

   Note: The tcinst.ksh script can be copied to a directory not on the CD-ROM, then edited to customize your installation.

   In HP-UX, the files on a CD are always shown in uppercase.

5. Follow the instructions in the installation script to install the TeamConnection components.

6. After the installation is complete, type the following commands:

```
cd ..
umount /CDROM
```

7. Eject the CD.

8. To cleanup the temporary directory "/tmp/tccdrom", type the following commands:

```
cd /
rm -fr /tmp/tccdrom
```

Solaris - Using CD-ROMs

There is no need to mount the CD-ROM if Volume Management is running. Once you insert the CD-ROM into the drive, the operating system mounts it for you.

If Volume Management is not running, do the following to mount the CD-ROM:

1. Login as root.

2. Start the Volume Management daemon by executing the following command:

   `/etc/init.d/volmgt start`

3. Execute `ps -ef | grep vold`. You should see the process "/usr/sbin/vold" started.

Solaris - Installing TeamConnection code from CD-ROM

To install the TeamConnection code from tar files from CD-ROM in Solaris, do the following:

1. Insert the CD-ROM into the CD-ROM drive. The Solaris volume management automatically mounts the CD-ROM as /cdrom/teamc_20 (or similar)

2. Log in as root and type the following commands:

   ```
   cd /cdrom/teamc_20
   ./tcinst.ksh
   ```

   Note: The tcinst.ksh script can be copied to a directory not on the CD-ROM, then edited to customize your installation.

3. Follow the instructions in the installation script to install the appropriate TeamConnection component.

4. After the installation is completed, type the following command:

   ```
   cd
   eject cdrom
   ```


Intel - CD-ROMs

In Intel operating systems, the CD-ROM drive is recognized by the operating system during boot and is treated as a read-only drive.

HOW TO SHUTDOWN AND REBOOT THE MACHINES?

UNIX - shutdown

Miscellaneous notes before shutdown

In order to efficiently shutdown a system, it is recommended that you follow these suggestions before you actually shutdown the system:

1. It is recommended to shutdown your system from a local session that does not use a windowing system (otherwise, the shutdown time will be longer because the windowing system has to be shutdown too).

2. If possible, unmount all the mounted NFS file systems.

Miscellaneous notes after reboot

After the system has been rebooted, it is suggested that you should manually remount the necessary NFS file systems and if desired, start specific processes that may not be started automatically after reboot, such as the database server.

Sometimes it is not convenient to automatically mount NFS file systems. For example, Host A and Host B are being rebooted at the same time. If Host B NFS mounts directories from Host A, Host B will hang during bootup until Host A is completely initialized and has its nfsd and mountd daemons running. Then Host B can NFS mount directories from Host A and complete its bootup.

It is also convenient to startup processes only when they are needed, such as databases. This is advantageous when you know that the system is heavily used and when there is no need for some databases to be running all the time.

In order to facilitate these tasks, you can, as root, create a shell script that will mount the necessary NFS file systems and start the desired processes. In our site we have the convention that this shell script is located in the root directory, it has file permissions for execute, it is named after the hostname and it has a suffix of ".mounts"; for example, in the host "oem-hp01", the shell script is called "/oem-hp01.mounts" and its contents is:

AIX - shutdown

1. Login as root.

2. Enter the following command to shutdown and reboot (quick restart):

   ```
   shutdown -Fr
   ```

```
┌─ Add it and copy it into the other TR ──────────────────────────┐
│                                                                  │
└──────────────────────────────────────────────────────────────────┘
```

Figure 1. Sample shell script to manually mount NFS file systems

HP-UX - shutdown

1. Login as root.

2. Enter the following command to shutdown and reboot:

   `shutdown -r`

Solaris - shutdown

1. Login as root.

2. Enter the following command to shutdown and reboot:

   `shutdown -i6`

Intel - How to shutdown and reboot

OS/2 - setboot

The OS/2 "setboot /b" command will cause OS/2 to shutdown and reboot.

You can also manually specify Shut Down from the desktop menu (point to the desktop and click right button).

Windows NT

- You can manually select "Start" then "Shut Down" and then specify the desired level for shutdown and reboot.

- You can use the utility "reboot" from the Windows NT Resource Kit.

Windows 95

You can manually select "Start" then "Shut Down" and then specify the desired level for shutdown and reboot.

Windows 3.1

You need to manually exit Windows and then reboot by doing a Ctrl-Alt-Del or power off then power on the system

UNIX: HOW TO IDENTIFY AND KILL SEMAPHORES AND FREE SHARED MEMORY?

To cleanup the semaphores and shared memory used by one TeamConnection family, you can do one of the following:

- Use the TeamConnection utility /usr/teamc/bin/stopteamc which also stops the TeamConnection daemons.

- Perform the following manual procedure:

    1. Login as root.

    2. Enter the following command to show the semaphores:

       ```
       ipcs -s
       ```

    3. Enter the following command to kill a semaphore:

       ```
       ipcrm -s xxx
       ```

       Where xxx is the semaphore id identified in the previous step.

    4. Enter the following command to show the shared memory:

       ```
       ipcs -m
       ```

    5. Enter the following command to kill the shared memory:

       ```
       ipcrm -m xxx
       ```

       Where xxx is the shared memory id identified in the previous step.

TOPICS RELATED TO PRINTERS

HP-UX: How to setup a printer?

You can set up local or remote printer access using "sam".

 1. At the command line prompt, enter 'sam'.

 2. Select the 'Printers and Plotter' icon.

 3. Select the 'Printers and Plotter' icon again.

4. From the 'Actions' pull down, select local, remote or network based printer access.

5. Complete and/or answer the screens that appear.

Please also refer to your system documentation for further information on local, remote or network printer setup.

AIX: How to setup printer access?

You can use the "smit" or "smitty" tool to set up local or remote printer access. The steps below show how to set up remote printer access. Please refer to system documentation for local set up.

1. Type 'smitty' at a command line prompt.

2. At the System Management screen select 'Print Spooling'.

3. At the Print Spooling screen select 'Add a Print Queue'.

4. At the Add a Print Queue screen select 'remote'.

5. At the Type of Remote Printing screen select 'Standard Processing'.

6. At this final screen, you will be asked to enter the following information:

   - Name of QUEUE to a add
   - HOSTNAME of remote server
   - Name of QUEUE on remote server
   - TYPE of print spooler

7. Press enter and the new print queue will be added.

8. Exit smitty and verify the setup by attempting to print a small ascii text file using the lp command.

Please also refer to your system documentation for further information on printer setup.

Solaris: How to setup printer access?

There are 2 options:

- You can set up local or remote printer access using the "admintool" in Solaris.

   1. At the command line prompt, enter 'admintool'.

   2. Select 'Browse', then 'printer' from the pull down menu.

   3. On the 'Admintool: Printers' pull down menu, select 'Edit', then 'add' and then one of the following:

      – 'Access to Printer' for remote printer set up, or

      – 'Local Printer' for local printer setup.

   4. Complete the information on the screen and select 'OK'.

Please also refer to your system documentation for further information.

- You can use the line commands below to setup a printer.

   1. Ensure that the client is allowed to print on the host.

   2. Do the following:

```
lpsystem -t bsd server_name
lpadmin -p new_name -s hostname!printer_name
lpadmin -p new_name -T unkonwn  # unless PS (PostScript)
lpadmin -p new_name -I simple   # unless above is PS
```

   3. Change directory to /etc/lp/fd

   4. Do the following:

```
sh
for f in download dpost postio postior postprint postreverse
do
lpfilter -f $f -F $f.fd
done
```

   5. Do the following:

```
accept new_name
enable new_name
```

MISCELLANEOUS TOPICS, BY PLATFORM

Solaris: How to fix problems with the /etc/vfstab file?

If this file is corrupted, such as wrong parameters were used, then the system could hang when trying to mount or to perform fchk.

To solve this problem, boot from the Solaris install disk. When the GUI is shown, mount the /etc file system; you must use the device name, such as:

```
mount /dev/dsk/c0t1d0s0 /mnt
```

Then you can correct the invalid entry.

DATABASE TASKS

This section describes some common tasks that the administrator user of TeamConnection is likely to do with the database system.

ENVIRONMENT VARIABLES NEEDED BY THE USER ROOT

UNIX - database environment

In UNIX, the ObjectStore database is started by root. The default installation process enables the operating system to start ObjectStore during startup. However, you need to make sure the root environment is set correctly.

AIX - root environment

Log in as root and type the following statements in .profile:

```
OS_ROOTDIR=/usr/lpp/ODI/OS4.0/cset
export OS_ROOTDIR
PATH=$PATH:$OS_ROOTDIR/bin:$OS_ROOTDIR/lib
export PATH
LIBPATH=$OS_ROOTDIR/lib
export LIBPATH
```


HP-UX - root environment

Log in as root and type the following statements in .profile:

```
LANG=C
export LANG
OS_ROOTDIR=/usr/local/ODI/OS4.0
export OS_ROOTDIR
PATH=$PATH:$OS_ROOTDIR/bin:$OS_ROOTDIR/lib
export PATH
SHLIB_PATH=$OS_ROOTDIR/lib
export SHLIB_PATH
```


Solaris - root environment

Log in as root and type the following statements in .profile:

```
OS_ROOTDIR=/opt/ODI/OS4.0/sunpro
export OS_ROOTDIR
PATH=$PATH:$OS_ROOTDIR/bin:$OS_ROOTDIR/lib
export PATH
SHLIB_PATH=$OS_ROOTDIR/lib
export SHLIB_PATH
LD_LIBRARY_PATH=$OS_ROOTDIR/lib
export LD_LIBRARY_PATH
```

Intel - database environment

For OS/2 and Windows NT, the environment settings needed by the database are set by the installation program.

WHERE IS THE OBJECTSTORE CODE LOCATED?

The default location for the ObjectStore code is:

AIX   `/usr/lpp/ODI/OS4.0`

HP-UX   `/usr/local/ODI/OS4.0`

Solaris `/opt/ODI/OS4.0`

OS/2   `c:\teamc`

Windows 3.1 `c:\ProgramF\TeamConn`

Windows 95 and NT `"c:\Program Files\TeamConnection"`

HOW TO FIND OUT THE VERSION OF OBJECTSTORE?

To display the version of ObjectStore that is in use on the machine, type:

`osversion`

`FAT name: osversio`

HOW TO FIND OUT IF THE OBJECTSTORE SERVER IS RUNNING AND ACTIVE?

UNIX - ObjectStore server process status

To verify if the ObjectStore server is active (osserver), do the following:

1. From a prompt, type:

   ```
   ps -ef | grep ' os'
   ```

2. Verify that there is a process for osserver.

   If you have a family already created, then it might be possible that you see the process oscmgr4 (for the ObjectStore cache manager).

Intel - ObjectStore server process status

The ObjectStore server only runs on the OS/2 and Windows NT Intel operating systems.

OS/2 - ObjectStore processes

Unless you have "grep" for OS/2 you need to use the following:

```
pstat | more
```

Windows NT - ObjectStore processes

1. Open Main Icon
2. Open Control Panel Icon
3. Open Services Icon
4. Scroll down to ObjectStore processes, then note if the status is "started" or "stopped".

How to determine if the ObjectStore server is running in a host?

To find out if the ObjectStore server is running on the specified host do:

```
ossvrping [-v] [hostName]
```

```
Where -v indicates that you want more information (Verbose mode).
```

```
FAT name: ossvrpin
```

UNIX - HOW TO START THE OBJECTSTORE?

UNIX - How to start the ObjectStore server?

You must have the proper ObjectStore environment variables defined in the .profile for root:

1. Login as root.

2. Enter the following command:

```
osserver
```

UNIX - How to start the ObjectStore cache manager?

There is no need to explicitly start the ObjectStore cache manager, because it is started when the first TeamConnection daemon is activated.

INTEL - HOW TO START OBJECTSTORE?

The ObjectStore server only runs in OS/2 and Windows NT.

OS/2 - Starting ObjectStore

1. Open "ObjectStore for OS/2" Icon
2. Select "ObjectStore Server" Icon

or, use the "osserver" command.

Note: The default installation copies the "ObjectStore Server" icon to the "Startup" folder.

Windows NT - Starting ObjectStore

1. Open Control Panel Icon
2. Open Services Icon
3. Select and make active the ObjectStore processes

or, use "net start osserver"

Note: The default installation configures NT to autostart ObjectStore

HOW TO RESTART THE OBJECTSTORE SERVER AFTER A CRASH?

It is recommended that after a crash of the ObjectStore server, it should be started and force the cleanup of the Server log file. Use with caution, though:

```
osserver -i
```

UNIX - HOW TO STOP OBJECTSTORE?

UNIX - How to stop the ObjectStore server?

You must have the proper ObjectStore environment variables defined in the .profile for root:

 1. Login as root.

 2. Enter the following command to shutdown the server:

    ```
    ossvrshtd [-f] hostName
    ```

    ```
    Where -f is to force an immediate shutdown.
    ```

    ```
    FAT name: ossvrsht
    ```

UNIX - How to stop the ObjectStore cache manager?

You must have the proper ObjectStore environment variables defined in the .profile for root:

 1. Login as root.

 2. Enter the following command to shutdown the cache manager:

    ```
    oscmshtd
    ```

INTEL - HOW TO STOP OBJECTSTORE?

The ObjectStore server only runs in OS/2 and Windows NT.

OS/2 - Stopping ObjectStore

 1. Open "ObjectStore Server" window
 2. Enter <Ctrl>-C to stop server process
 3. Type "exit" to close window

or,

 1. Press Ctrl-Esc to show the window list, then select the entry for the ObjectStore server
    (osserver). Then with the right button, select the option to close it.

<u>Windows NT - Stopping ObjectStore</u>

1. Open Control Panel Icon
2. Open Services Icon
3. Select and make inactive the ObjectStore processes

or, use "net stop osserver"

HOW TO DISPLAY INFORMATION ABOUT THE OBJECTSTORE SERVER/CLIENT?

The following utility displays settings for ObjectStore:

- Server parameters
- Server use meters
- Information for each client connected to the Server running on the specified host.

```
ossvrstat hostName [-meters] [-clients]
[-parameters] [-rusage]

Where some options are:
  -meters     Displays performance meters
  -clients    Displays the state of each client connect to the server
  -parameters Displays server parameter values
  -rusage     UNIX only: displays server process information

FAT name: ossvrsta
```

For more information, see the section "Maintaining the TeamConnection database", found in chapter 15 "Maintaining your TeamConnection environment", from the manual "TeamConnection Administrator's Guide".

HOW TO BACKUP AN OBJECTSTORE DATABASE?

You can use the following utility to perform an online backup of the database:

```
osbackup
```

For more information, see the section "Maintaining the TeamConnection database", found in chapter 15 "Maintaining your TeamConnection environment", from the manual "TeamConnection Administrator's Guide".

Note: If the TeamConnection family is not running, you can use the "oscp" command to copy the family database to another directory. This can be part of a complete family backup using the oscp and cp commands.

HOW TO RESTORE A BACKED UP OBJECTSTORE DATABASE?

You can use the following utility to restore a database that was backed up by using osbackup:

`osrestore`

`FAT name: osrestor`

For more information, see the section "Maintaining the TeamConnection database", found in chapter 15 "Maintaining your TeamConnection environment", from the manual "TeamConnection Administrator's Guide".

HOW TO COPY AN OBJECTSTORE DATABASE?

You can use the following utility to create a copy of a database:

`oscp`

For more information, see the section "Maintaining the TeamConnection database", found in chapter 15 "Maintaining your TeamConnection environment", from the manual "TeamConnection Administrator's Guide".

HOW TO VERIFY THE VALIDITY OF THE POINTERS IN AN OBJECTSTORE DATABASE?

You can use the following utility to validate that the pointers within a database are valid:

`osverifydb [options] pathName`

`FAT name: osverify`

For more information, see the section "Maintaining the TeamConnection database", chapter 15 "Maintaining your TeamConnection environment", from the manual "TeamConnection Administrator's Guide".

APPENDIX A. BIBLIOGRAPHY

TEAMCONNECTION 2

For more information on how to use TeamConnection, you can consult the following manuals and publications:

```
SC34-4551  TeamConnection, Administrator's Guide
SC34-4552  Getting Started with the TeamConnection Clients
SC34-4499  TeamConnection, User's Guide
SC34-4501  TeamConnection, Commands Reference
SC34-4500  TeamConnection, Quick Commands Reference
```

TEAMCONNECTION 1, USEFUL TO TEAMCONNECTION 2 USERS

A few publications that have not been updated for TeamConnection 2.0 are still useful.

```
SG24-4648  Introduction to the IBM Application Development Team Suite
83H9677    Staying on Track with TeamConnection Processes (Poster)
```

RELATED TECHNICAL REPORTS

The following technical reports describe in detail useful hints on using TeamConnection:

```
29.2147  SCLM Guide to TeamConnection Terminology
29.2196  Using REXX command files with TeamConnection MVS Build Scripts
29.2231  TeamConnection Interoperability with MVS and SCLM
29.2235  Using REXX command files with TeamConnection MVS Build Scripts
         for PL/I programs
29.2253  Comparison between CMVC 2.3 and TeamConnection 2
29.2254  Migrating from CMVC 2.3 to TeamConnection 2
29.2266  TeamConnection frequently asked questions: National Language
         Support (NLS) and Double-Byte Character Sets (DBCS)
```

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