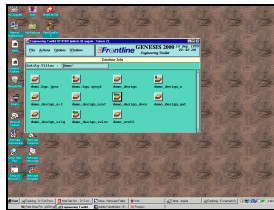




GENESIS 2000



SOFTWARE INSTALLATION

Software Version 8.0

Document 0201.0701

Published July 2001

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Chapter 1 *Overview*

Introduction

This manual will be your guide to installing the Genesis 2000 systems. You will be taken through a step-by-step procedure that will describe what operations you need to perform and what the installation is doing.

The bulk of the installation is performed automatically by a script which prompts the user for input and confirmation. Make sure you look at the platform specific notes for any information regarding the operating system platform you are using.

This book is all you need in order to perform the complete installation, at the end of which you will be able to run the application.

Any questions regarding carrying out the site preparation procedures, should be cleared with the local Frontline representative.

Intended Readers

This Manual is intended for the System Administrator. Knowledge of the UNIX operating system is required.

Scope

Software Installation (Doc.0201) is a part of the System Administrator book-set (02). After installation you can perform further customization and system management using System Management (Doc.0203) and Scripts (Doc.0204). They cover some of the subjects you will be interested in after the system is up and running.

Organization of this Manual

Chapter 1 - contains a general overview of this manual, including the book's scope and structure.

Chapter 2 - contains information that will help you before you start the installation, such as where to get the media, what are the system requirements, and a discussion on where to install the software.

Chapter 3 - describes how to retrieve/download files and install or upgrade Genesis 2000 or portions of, both using Pro Installer and FTP.

Chapter 4 - file structure of the installed data from the root directory down.

Chapter 5 - describes the job database structure and how it can be configured as a distributed or centralized database.

Chapter 6 - describes the configuration/setup of Windows NT to accommodate the system.

Chapter 7 - explains what needs to be done in order to support multi-platform environments.

Chapter 8 - describes how to enable scripting on Windows NT.

Chapter 9 - describes the installation procedure and general system administration of the Cyberlink package. The Cyberlink package is used to allow access to database elements using Java enabled Internet browsers such as Netscape.

Appendix A Common Examples - provides a few examples that are not documented in the manual.

Appendix B Frequently Asked Questions - provides questions and answers that are useful in troubleshooting. The appendix is sectioned by subject.

Appendix C Error Messages- provides a description of some of the error messages that may appear.

Appendix D System Administrator Notes - provides instructions for the system administrator.

Chapter 2 *Installation Prerequisites*

This chapter describes the requirements for installation of Genesis 2000 on UNIX and Windows NT 4.0 platforms.

For All Platforms

Required 300MB, or more, swap space on disk.

Note Solaris is supported only under the Sparc architecture and not on Intel architecture, because of binary incompatibility with other platforms. For the same reason, Windows NT is not supported on the Alpha platform.

UNIX Platform Requirements

- UNIX workstation with at least 128MB RAM memory, and with more than 100MB of disk space for system programs, 3-button mouse (standard with system) running under:
 - HP-UX 9.05 and up
 - Sun OS
 - Solaris with more than 300MB of swap space
 - AIX
- Free 9- or 25-pin serial port* on Server station to be used for the dongle.
- Dongle (DS1412 in beige color) with button to be installed on serial port of the Server station

If unsuccessful in installing the dongle, see [“Dongle Troubleshooting”](#) on page 69.

NT 4.0 Platforms

This chapter describes the requirements for installation of Genesis 2000 on the Windows NT 4.0 platform.

The graphic interface is identical under UNIX and Windows NT 4.0. However, automation (scripts) developed on UNIX systems must be ported to Windows NT. (Most will run with minor modifications.)

Hardware

Genesis 2000 will operate on a Pentium PC with Microsoft Windows NT4.0 with minimal recommended specifications as follows:

- Processor - Pentium Intel-compatible 200 MHZ

- RAM memory - 128MB DIMM
- Video RAM - 4MB
- 19" Screen Monitor
- NTFS file system
- Network adapter with TCP/IP transport protocol installed and running
- At least 300MB of swap space
- 3-button mouse highly recommended although not essential.
- Network Adapter
- Free parallel port* on Server station to be used for the dongle.
- Dongle (DS1410 in black color) with button to be installed on parallel port of the Server station

See [“Frequently Asked Questions” on page 62](#) for further information.

If unsuccessful in installing the dongle, see [“Dongle Troubleshooting” on page 69](#).

Laptops

Genesis 2000 will run on laptops under Windows NT 4.0.

Alpha Stations

Genesis 2000 is **not** supported on Alpha stations under Windows NT 4.0.

Operating System

Windows NT 4.0 using TCP/IP networking and with disk formatted in NTFS.

Note Genesis 2000 will not run under Windows 95 or any other version of Windows.

Uninstallation of Software

The Frontline Pro Installer does not currently support an Uninstall function for the software and must be performed manually, as follows:

- Type: `$GENESIS_DIR/e70/nt/nc_rtsu.exe -stop_svcs`
- Delete the following directories: `$GENESIS_DIR /bin` and `/usr`
- Delete variables prefixed with `vuv` and `GENESIS` from the environment
- You may remove XVision using the Add/Remove Software

Printing

To configure Microsoft Windows printing from Genesis, set the following hook:

```
$GENESIS_DIR/sys/hooks/lp_prog
```

as listed below, replacing `myserver` and `myprinter` with the server name and printer name respectively.

```
# Avoid slashes in filename
if (! $?TMPDIR) then
```

```

    set TMPDIR = $TMP
endif
cd $TMPDIR

set file = pr.$$

# Add ^M to end of line - required for some printers
# sed 's/$//g' < $2 > $file
mv $2 $file

@ i = 0
while ($i < $1)
    # This command does not work in some installations
    # $WINDIR\system32\print /d:\\\myserver\myprinter $file
    echo 'print /d:\\\myserver\myprinter ' $TMPDIR\$file > lp_tmp$$bat
    lp_tmp$$bat
    rm lp_tmp$$bat
    @ i++
end
\rm $file

```

Note The Print command works only with Microsoft print servers.

Another alternative is to replace the Print command with something like:

```
/usr/local/bin/cat $file > lpt1
```

The script creates a batch file and then runs it because, for some reason on some installations, c-shell refuses to run the print command.

The command for TCP/IP printing is `lpr`. For information on installing TCP/IP printing see the Windows NT help, under the topic LPR.

The following script could be used for TCP/IP printing on Windows NT, where `myserver` and `myprinter` are replaced by the server name and printer name respectively.

```

@ i = 0
while ($i < $1)
    lpr -S myserver -P myprinter -d $2
    @ i++
end

```

Where to Install

Before you begin the installation you must decide on which host to run the installation. The host you choose will be the Genesis server where the server daemons will run. The server daemon is in charge of the following operations:

- License management
- Locks management

Concurrent access of system resources is implemented using semaphores.

- Inter process communication

You must also decide where the root directory of the software will be.

Make sure you have enough disk space available for the software and that all clients that will run the application will have NFS access to this directory (or CIFS for Windows NT).

Chapter 3 *Installation / Upgrade Procedure*

This chapter describes the procedure required to prepare for and perform an installation of the Genesis 2000 software or part of. This applies to both the upgrade of an existing system to a new version and to the complete installation of a new system.

The Pro Installer installation process supports the installation of Frontline Products and Frontline Beans.

Frontline Products

Frontline Products include software and documentation created and distributed by Frontline PCB Solutions under strict R&D standards of configuration control and rigorous testing.

Frontline Beans

Frontline Beans are small packages of automation and working examples created by Frontline Technical Support, VARs and advanced system users. As self-training aids, they are useful tools for understanding the products.

Note For instructions on loading other products, such as Literature and Documentation that are available on the CD-ROM, see the insert in the CD-ROM cover.

Retrieval Methods

Retrieval of the installation files can be performed:

1. From CDROM.
(if CD-ROM version is not the latest, then use the automatic FTP download in the Pro Installer to retrieve the latest version files from the Frontline site, **ftp.frontline-pcb.com**.)
2. Using FTP to download into a temporary directory on the local disk, followed by installation from the temporary directory into the final locations.

After deciding on method 1 or 2, the actual installation process is the same.

CD-ROM Mounting Instructions

UNIX

1. Insert the CD.
2. Find the system on which your workstation runs from the list below and type the command (as a superuser):

Note Make sure an empty directory `/cdrom` exists.

AIX	<code>/usr/sbin/mount -rv cdrfs /dev/cd0 /cdrom</code>
HPUX 9.x	<code>/etc/mount -t cdrfs /dev/dsk/c201dxs0 /cdrom</code> (x = SCSI id: 0-7) HP-UX 9.x systems may show difficulties in reading the CD-ROM file names. If file names such as 'file.doc' appear as 'FILE.DOC;1', then the patch <code>PHKL_6075</code> is required. The patch is available from HP representatives. The patch must be installed prior to mounting this CD-ROM.
HPUX 10.x	<code>/usr/sbin/mount \</code> <code>-F cdrfs -o ro,cdcase /dev/dsk/cytxd0 /cdrom</code> (x = SCSI id: 0-7) (y=SCSI controller id)
SUN (Solaris 1.x)	<code>/etc/mount -o ro -t hsfs /dev/sr0 /cdrom</code> (SCSI id 6 is recommended)
SUN (Solaris 2.x)	<code>/sbin/mount -rF hsfs /dev/dsk/c0txd0s2 /cdrom</code> (x = SCSI id: 0-7)

- Proceed according to the instructions in [“Pro Installer - CD-ROM”](#) on page 13.

Windows NT4.0

1. Insert the CD.
2. Proceed according to the instructions in [“Pro Installer - CD-ROM”](#) on page 13.

Pro Installer - CD-ROM

Brief Outline of Procedure

Installing from a CDROM is the simplest:

- Check that the source is set to 'CDROM'.
- Check that the CDROM Path is set correctly (typically `/cdrom`).
- Select to install a Product or a Bean.
- Click on 'List...' to view all available products.
- Type in the Name, Version and O.S. fields or click on the field button and select from a list of choices.
- Obtain information on the product by clicking the 'Info...' button.
- Click on '**Load Installation Plug-in**' to load the specific installation procedure for the product/bean. This will fill the area on the right with parameters and activation buttons for the particular product/bean.
- Type in the destination directory or click on the '**Destination:**' button to browse and select the directory to install the product/bean.

- Set the mode to **Standard**.
- Click **Start** and follow the instructions given on the screen.

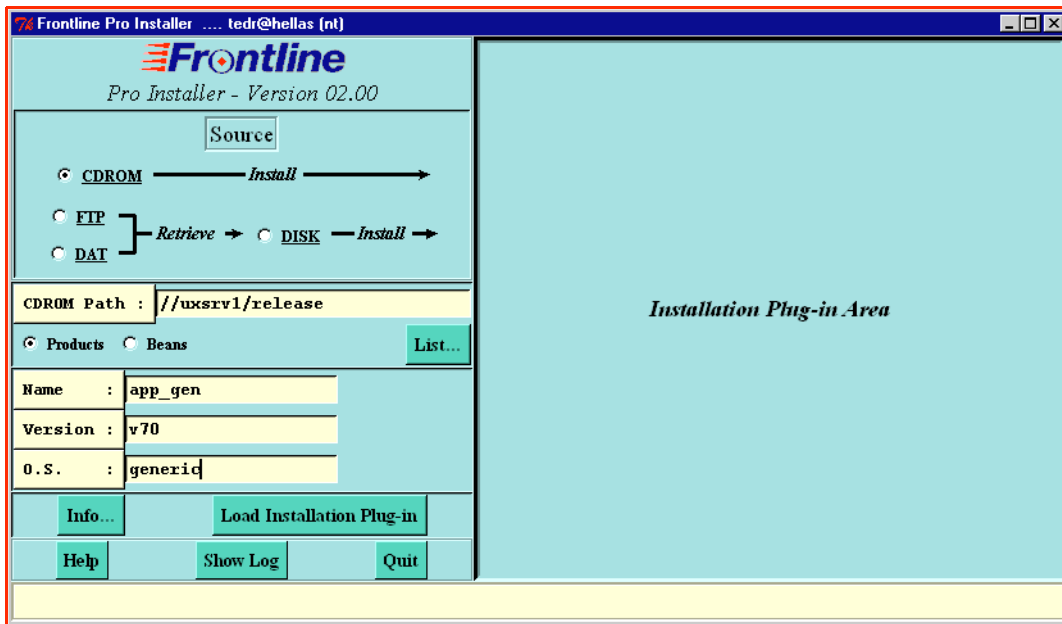
CD-ROM Detailed Procedure

Step 1. On the CD-ROM run:

For Windows NT4.0: `install.bat`

For UNIX: `install.csh`

After a short period, the Frontline Pro Installer window appears.



The following pages describe the Pro Installer window and its options:

Note When clicking on a button that requires linking to a local or remote site, a few seconds may elapse before you see any action. During a wait for an action, information on the process appears in the **Information Bar** at the bottom with a Stop button on the right. This button will terminate the transfer process when clicked.

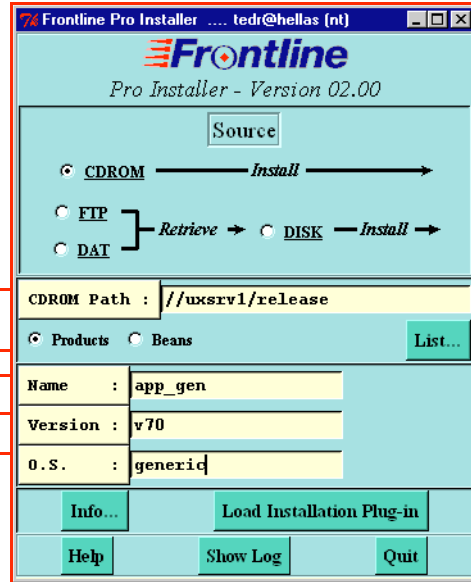


Information Bar

CD-ROM option is chosen.

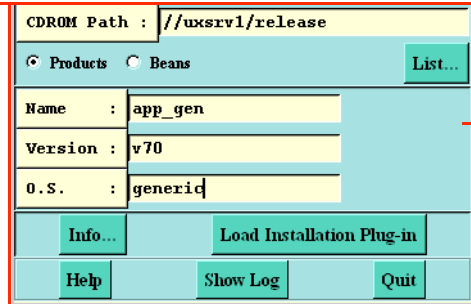
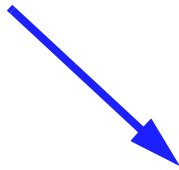
Click on **CDROM Path** to select the path of your CD-ROM drive [typically: /cdrom (Unix) or E: (NT4.0)]

- Select **Products** or **Beans**.
- Click **List** to display popup with list of Products or Beans.
- Click **Name**.
- Select the Product (or Bean) to install from the popup that appears.
- Click **Version**
- Select the version of the product/bean from the popup that appears.
- Click **O.S.**
- Select the operating system from the popup that appears.

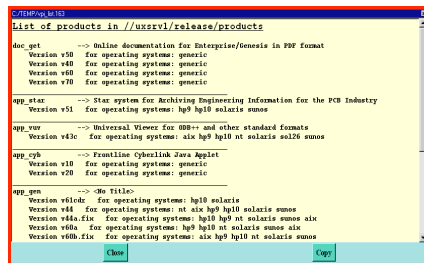


For products that are not operating system specific, use **generic** as O.S..

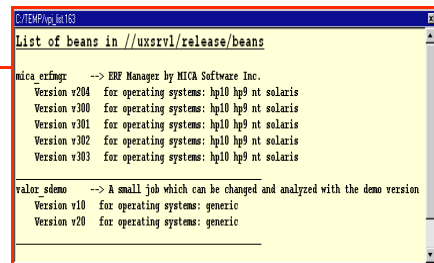
- Click **List** to display a current list of Products or Beans, depending on your preselection.



List of Products



List of Beans



For list of Products/Beans, see further on.

- Click **Info** to display a popup with a description of product/bean.
- Click **Help** to display a popup with a description of the installation procedure.
- Click **Show Log** to display a popup with a record of each action you took in this session.

CDROM Path : //uxsrv1/release

Products Beans List...

Name : app_gen

Version : v70

O.S. : generic

Info... Load Installation Plug-in

Help Show Log Quit

- Click **Quit** to exit the Pro Installer.

The following figures demonstrate the installation of **app_gen** (Genesis 2000) and is true for **app_gen** only. The figures for other Products/Beans may differ slightly.

CDROM Path : //uxsrv1/release

Products Beans List...

Name : app_gen

Version : v70

O.S. : generic

Info... Load Installation Plug-in

Help Show Log Quit

- Click **Load Installation Plug-in** to display the installation panel in the right side of this window.
- Respond to:
Is this a Server or a Client Installation?
 (typically this would be **Server** for a full installation of Genesis 2000)
 See “Where to Install” on page 10.

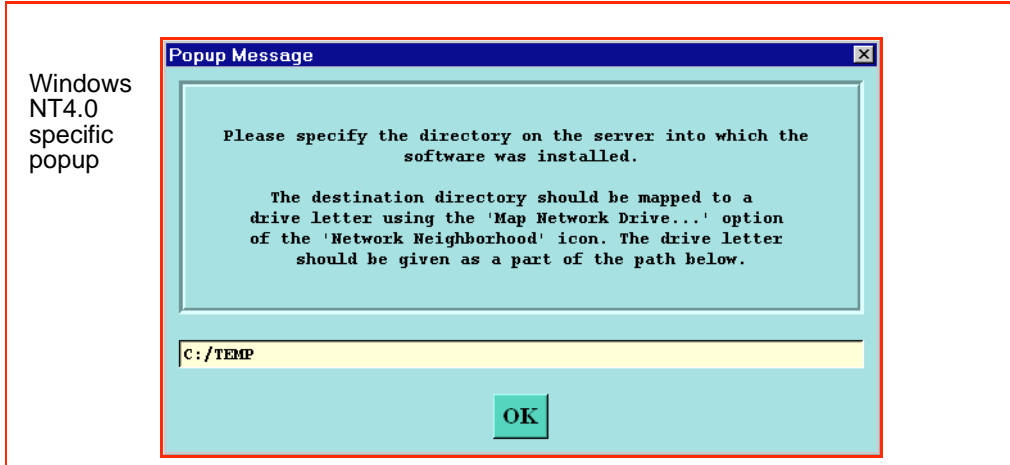
Popup Message

Is this a Server or a Client installation ?

Server
Client

If you selected **Client** (for an installation of certain products or beans) the following prompt appears.

- Type the directory where the software was installed on the server. This directory must be shared between server and client.



Installation

The Load Installation Plug-in panel appears with the Standard option activated, as the default.

The following figures demonstrate the installation of **app_gen** (Genesis 2000) and is true for **app_gen** only. The figures for other products/beans may differ slightly:

Standard Installation

- Type the directory into which to install the product/bean or click **Destination** to select the path to install.
- Select **Standard** if you wish to do a complete installation.
- Select **Custom** (see below) if you wish to be selective and install only certain modules.
- Click on the **i** button for each stage to display a popup describing the steps taken by that stage.
- After selecting **Standard** click on **Start** to initiate the installation.

Follow the instructions that appear on the screen.

Mode	Standard	Custom
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	Copy product files	Not done
<input type="checkbox"/>	Set file permissions	Not done
<input type="checkbox"/>	Update startup files	Not done
<input type="checkbox"/>	Update license	Not done
<input type="checkbox"/>	Set users/groups	Not done
<input type="checkbox"/>	Set logical databases	Not done
<input type="checkbox"/>	Check installation	Not done
<input type="checkbox"/>	Install SCO XVision7	Not done

Status of stage

- You may also click on a single Product/Bean button to install only that product/bean (whether Standard or Custom). After you click, Working appears in the Status box.

The Information Bar displays the status of the download process.

As each stage is completed, its status box will indicate **Done**.

Custom Installation

- Type the directory into which to install the software
or

- Click **Destination** to select the path to install.

- Select **Custom**

- Tick on the check boxes of the stages you wish to install.

- Click on **Start** to initiate the installation.

- Follow the instructions that appear on the screen.

*Genesis Application
Installation Plug-in*

Destination :

Mode : Standard Custom

<input checked="" type="checkbox"/>	Copy product files	Not done
<input checked="" type="checkbox"/>	Set file permissions	Not done
<input type="checkbox"/>	Update startup files	Not done
<input checked="" type="checkbox"/>	Update license	Not done
<input checked="" type="checkbox"/>	Set users/groups	Not done
<input type="checkbox"/>	Set logical databases	Not done
<input type="checkbox"/>	Check installation	Not done
<input type="checkbox"/>	Install SCO XVision7	Not done

Notes

- Each stage in the Installation Plug-In panel has an **i** information button that displays an explanation of the action.
- Selecting Custom mode allows choosing a subset of the stages by individually ticking their checkboxes. Custom mode also is more ‘forgiving’ on certain errors and is intended for more experienced users.

Popup Message

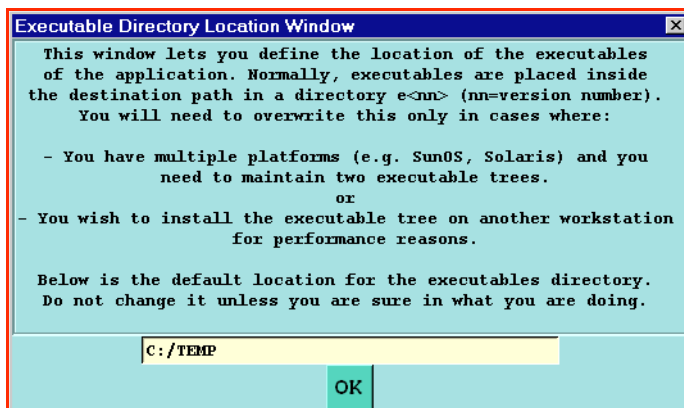
Some files need to be retrieved from FTP.
Please Check and Confirm:

Files On FTP Versus Local Files:

File Name	Name Match	File Size	Sum Match	Should Copy
app_get.ins	no	113567	no	yes
app_get.doc	no	5358	no	yes
app_get.sum	no	53	no	yes
app_get.tgz.p00	no	2000000	no	yes
app_get.tgz.p01	no	2000000	no	yes
app_get.tgz.p02	no	2000000	no	yes
app_get.tgz.p03	no	2000000	no	yes
app_get.tgz.p04	no	2000000	no	yes
app_get.tgz.p05	no	2000000	no	yes
app_get.tgz.p06	no	2000000	no	yes
app_get.tgz.p07	no	2000000	no	yes

Pro Installer checks your current directory and compares the existing files and the files you requested and indicates which files need to be downloaded via FTP.

At the end, the following window appears:



Text as it appears in window above:

This window lets you define the location of the executables of the application. Normally, executables are placed inside the destination path in a directory e<nn> (nn=version number). You will need to overwrite this only in cases where:

- You have multiple platforms (e.g. SunOS, Solaris) and you need to maintain two executable trees.

or

- You wish to install the executable tree on another workstation for performance reasons.

Below is the default location for the executable directory. Do not change it unless you are sure in what you are doing.

FTP Retrieval/Install

This mode of installation is useful for installing the most updated versions of Products/Beans from Frontline's FTP site or a mirror site. This process involves two steps:

1. Retrieval

In this step you simply load the product/bean from the FTP server into a free area on your local disk which serves as a repository.

Note The local disk area into which the data is retrieved is **not** the final destination. It is an intermediate buffer which simulates the structure of the Products/Beans directories on the CDROM. Please keep this directory separate from any application.

The retrieval process uses sophisticated checksums to verify whether the data already exists in the local disk directory or it has to be retrieved.

2. Installation

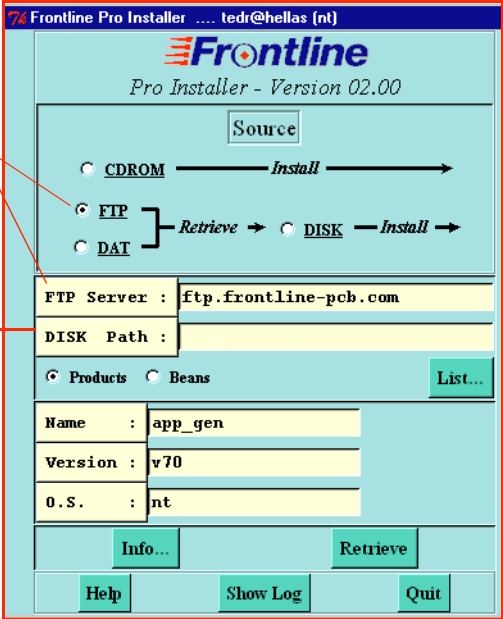
Installation from disk is very similar to the installation from CDROM process described above. The only exception is the additional verification performed on the data for the selected product, *i.e.* it was fully retrieved and can be successfully installed.

Retrieval

- Run the Pro Installer, and click on the FTP button checkbox:

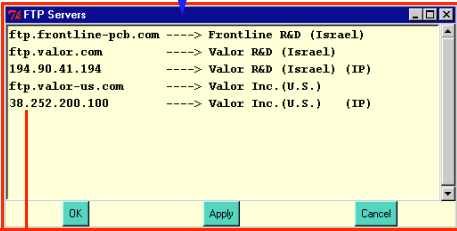
Click the **FTP** checkbox.

- Click the **FTP Server** button to connect via network to display the available FTP sites (as below).

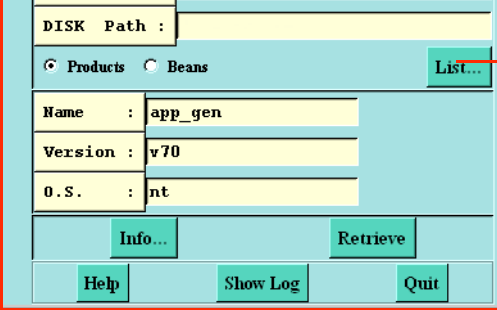


- Select the **Disk Path** where to place the retrieved files in the temporary directory.

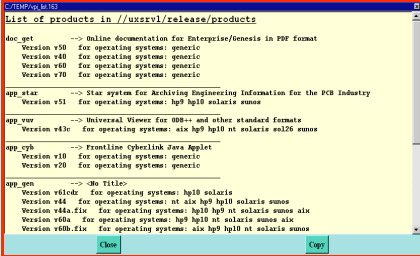
- Select the server from which to download and click OK or Apply.



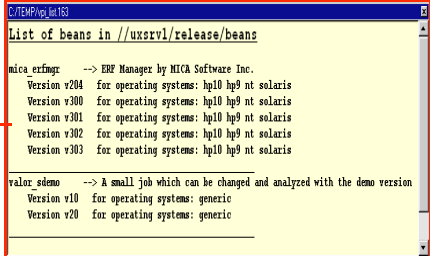
- Click **List** to display a current list of Products or Beans, depending on your pre-selection.



List of Products



List of Beans



- Select Products or Beans
 - Click **Name**.
- If Products, you get the popup below:

Products Beans LIST...

Name :	app_gen
Version :	v70
O.S. :	nt

Info... Retrieve

Help Show Log Quit

List of Names

```

app_cyb    --> Frontline Cyberlink Java Applet
app_gen    --> Genesis System for Manufacturing Simulation and Preproduction
app_vuv    --> Valor Universal Viewer for ODB++ and other standard formats
doc_get    --> OnLine documentation for Enterprise/Genesis in PDF format
  
```

OK Apply Cancel

Select the product you wish to download and click OK or Apply.
The product name will appear in the Name field.

- Click **Version**.
- To display the version list:

List of Versions

```

v44
v44a.fix
v60a
v60b.fix
v60d.fix
v70
v70z4.fix
  
```

OK Apply Cancel

Products Beans LIST...

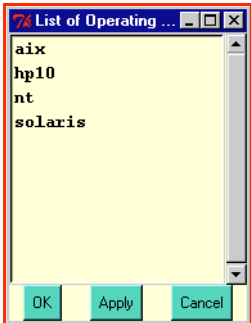
Name :	app_gen
Version :	v70
O.S. :	nt

Info... Retrieve

Help Show Log Quit

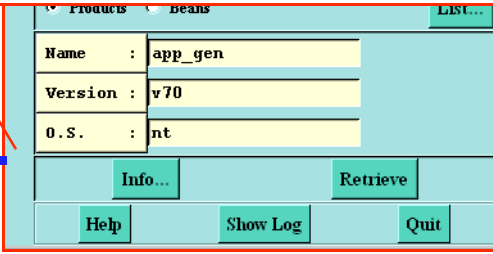
- Select the version you wish to download and click OK or Apply.
The version will appear in the Version field.

- Click **O.S.** to display operating system list:



- Select the operating system for your platform and click OK or Apply.

- Click the **Retrieve** button to start FTP download of the selected product/bean.



Installation

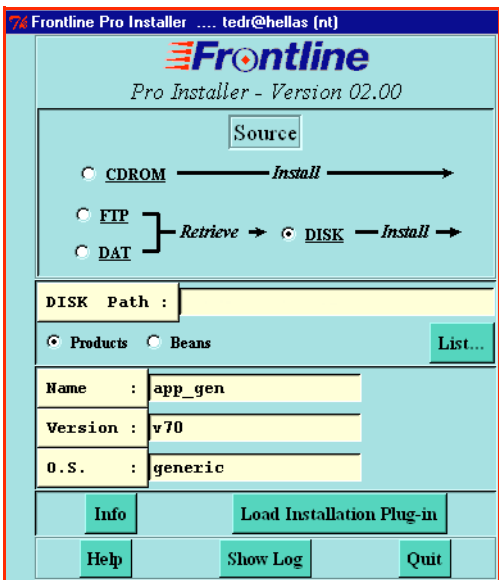
After FTP retrieval into a temporary directory of your choice, you can start installation:

- Click the Disk checkbox

The Load Installation Plug-in button appears.

- Click the **Load Installation Plug-in** button to display the Installation Plug-in panel on the right of the window.

Follow the installation procedure described for CD-ROM under [“Installation” on page 17.](#)



Installation on Platform With No FTP

To install on a system that has no FTP connection, but does have some other means of file transfer, such as a DAT tape drive, you can copy the required files from another system and do an installation from disk via the Pro Installer.

You may wish to install only a certain product/bean for a certain O.S.

Proceed as follows:

1. Find the installation files from one of the following sources:
 - A local system that has FTP and has already downloaded the installation files.
 - Use a local system that has FTP to download the installation files (can be done with the Pro Installer).
2. Tar up the products/beans in the same directory structure after FTP download via Pro Installer
3. Create the required directory structure on your disk. (one way of doing this would be to do an FTP retrieval using the Pro Installer for the required products/beans).

Note The product/bean structure is defined in Product/Bean Structure on the CDROM in the file `install.hlp` (or see below). Add the directory 'products' and/or 'beans' as the parent directory and tar all this up on DAT.
4. Take the DAT to the non-FTP station with the following instructions:
 - Untar the DAT to a temporary directory
 - Run the Pro Installer and select Install from DISK
 - Type in the path of the temporary directory where the DAT was untarred
 - Proceed as if running from CD-ROM.

Product/Bean Structure on the CDROM

Products/beans are organized in the following directory structure:



The sum file `<name>.sum` consists of one line describing the size and checksum of the `<name>.tgz` file.

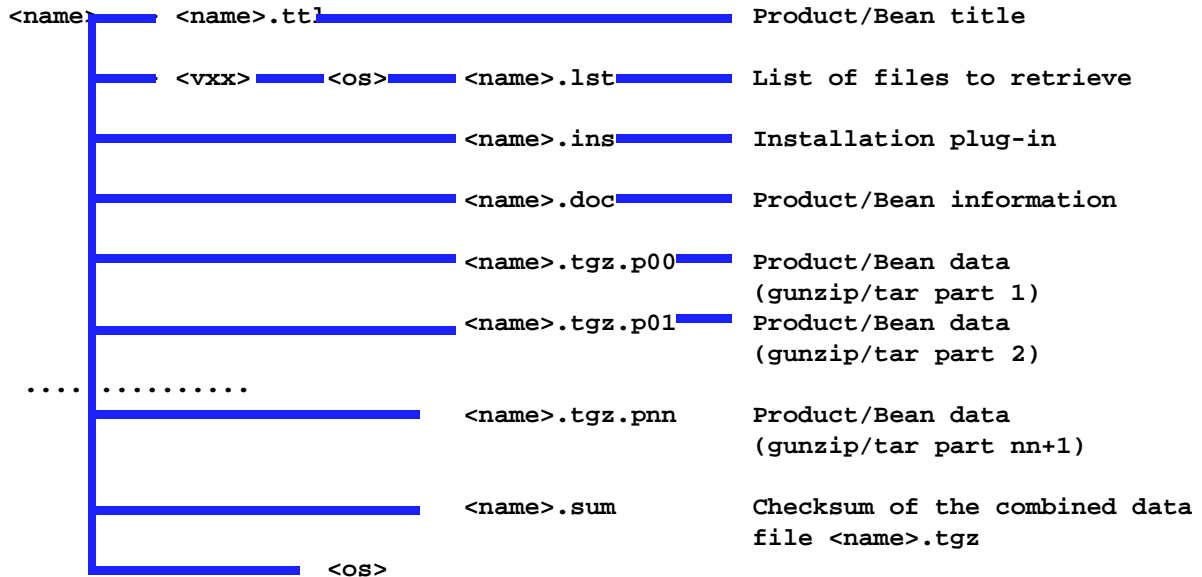
```
<file name> <size> <md5sum> |
```

Note `md5sum` is a platform neutral utility which calculates a highly robust checksum for a file. It is located in the tools directory of the Genesis CDROM for each platform.

Product/Bean Structure on the FTP server

The structure on the FTP server takes into account the physical bandwidth limitations for FTP transfer. As a result, the product data file is separated into multiple 4MB parts which are retrieved individually according to a list file provided in the product directory.

Each product/bean is organized in the following directory structure:



The list file (`<name>.lst`) consists of multiple lines, each describing one file to be retrieved:

```

<file name> <size> <md5sum>
<file name> <size> <md5sum>

```

While retrieving data from the FTP server, Pro Installer automatically compares files that already exist in the target directory to the ones that should appear there, according to the `<name>.lst` file, using `md5sum`. Depending on that comparison, Pro Installer decides which files should be retrieved and which are up to date.

After the retrieval process is completed, the installer merges all the `<name>.tgz.pxx` files into the original `<name>.tgz` file, and checks again that its sum matches the `<name>.sum` file.

Upon completion of the FTP retrieval process the local disk directory will be structured as an original Genesis 2000 CDROM directory.

Downloading from FTP Server to Local Disk (manually)

This method of file retrieval and installation of Genesis 2000 is useful when a CD-ROM is not available. The most current versions of Products/Beans are found on the Frontline Internet FTP server, on a mirror site, or from a DAT tape.

Procedure

The products/beans are downloaded from the FTP server/DAT device onto a free area on your local disk which serves as a repository for Frontline Products from which the installation will take place.

Note The local disk area into which the data is retrieved is **not** the final destination into which the data is installed. It is an intermediate buffer which simulates the structure of the Products/Beans directories on the CD-ROM. Please keep this directory separate from any application area.

The retrieval process uses sophisticated checksums to verify whether the files already exist in the local disk directory or whether they have to be downloaded.

1. Move to the local disk directory into which to retrieve data:
`cd $DISK_PATH`
2. Create a directory for the product:
`mkdir -p products/name/vxx/os`
3. Move to the directory just created:
`cd products/name/vxx/os`
4. FTP to Frontline's server:
`ftp ftp.Frontline-pcb.com`
Login according to system administrator instructions.
5. Change directory in the FTP server:
`cd /pub/release/name/vxx/os`
6. Set Binary Mode, No Prompting between files, Hash Mark display
`bin`
`prompt off`
`hash`
7. Retrieve the files:
`mget *`
8. Concatenate all files to one file
`cat <name>.tgz.p* > <name>.tgz`
9. Validate that the checksum is correct:
`/cdrom/tools/<your os>/md5sum.exe <name>.tgz`
10. Compare the results with the contents of the file `<name>.sum`.

List of Installation Files

The following section lists the files that are available on the CD-ROM and on the FTP site, as grouped under:

- Products

- Beans

Products

Frontline Products include software and documentation created and distributed by Frontline PCB Solutions under strict R&D standards of configuration control and rigorous testing.

Product File	Description
app_cyb	Cyberlink Java Applet Version v1.0 for operating systems: generic
doc_get	Online documentation for Genesis in PDF format for operating systems: generic
app_gen	Genesis system for Manufacturing Simulation and pre-production for operating systems: aix hp9 hp10 solaris sunos nt

Beans

Beans are small packages of automation and working examples which are created by the Frontline support organization. Currently, no Beans are available.

UNIX

This section provides a list of system & kernel changes that the installation performs for all UNIX systems.

HP9 & HP10

The following Kernel configuration parameters are changed during the installation. These are recommended values.

Note Re-installing the OS usually resets these parameters and they need to be set to these values again afterwards.

```
maxdsiz 0x20000000 (client as well)
maxfiles 200
semms 200
semume 100
semnu 100
```

SUNOS The following entries are set or modified.

File	Entries
System KERNEL	options IPCMESSAGE options IPCSEMAPHORE options IPCSHMEM options SEMMNI=64 options SEMMNS=200 options SEMUME=100

SOLARIS The following entries are set or modified:

File	Entries
/etc/system	set semsys:seminfo_semmni=64 set semsys:seminfo_semmns=200 set semsys:seminfo_semume=100 forceload: sys/msgsys forceload: sys/shmsys forceload: sys/semsys
/usr/openwin/lib/Xdefaults	
OpenWindows.KeepTransientsAbove	True
/etc/logindevperm	/dev/console 0666 /dev/sound/*

AIX The following entries are set or modified:

File	Entries
/usr/lpp/X11/defaults/xserverrc	EXTENSIONS=\$EXTENSIONS -bs

Window NT 4.0

See [“Windows NT 4.0 Setup”](#) on page 33.

Chapter 4 *System Directory Structure*

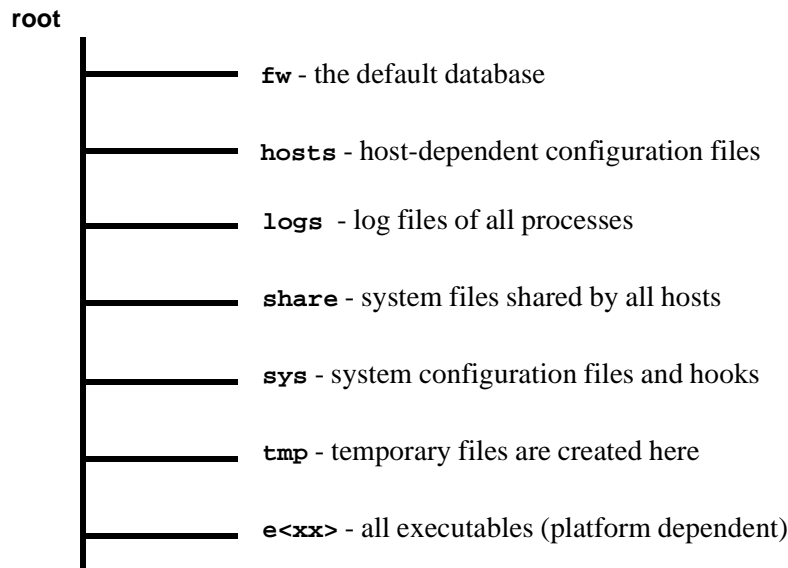
user directory (`$HOME/.genesis`)

Each user can define user-specific configuration files, hooks and scripts that reside in this directory. This directory is created in the user's home directory automatically by the application when the user first runs it. For more information see System Management (Doc. 0203).

Note The `$HOME/.genesis/login` file is used to run `get` in `no_windows` script mode. The login and password of a user are stored in the file in the format: `<login> <password>` (see also Chapter 7, Doc.0203 System Management). It is recommended that you define this file as read-protected to hide your password from prying eyes. If the environment variable `FRONTLINE_NO_LOGIN_SCREEN` is set, the login screen is bypassed in Windows NT4.0 as well.

root directory

The diagram below describes the components of the `root` directory. Root is defined as the starting point of the Genesis 2000 installation. It is pointed to by the environment variable `$GENESIS_DIR`, or in its absence defaults to `/genesis`.



fw directory

This directory is created during the initial installation and contains the default and primary database of the system with the built-in Library job. For more on databases see([“Job Database Management” on page 38](#)).

hosts directory

This is used to define host-specific configuration files. A directory-per-host will be created automatically by the software when the application is run.

logs directory

This directory contains the logs of all the main processes of the system.

Note The get process will not create a log file unless the operator has chosen to do so when exiting the process.

share directory

This directory contains the global system files that are managed by the application. See System Management (Doc. 0203).

Note You should not make any changes to the files in this directory, but may do so in the license directory beneath it.

sys directory

This directory contains the configuration files, scripts and hooks that are used by the application. It is intended for customization by the system administrator. See System Management (Doc. 0203).

tmp directory

This directory is a volatile directory used by the application for temporary file storage.

e<xx> directory

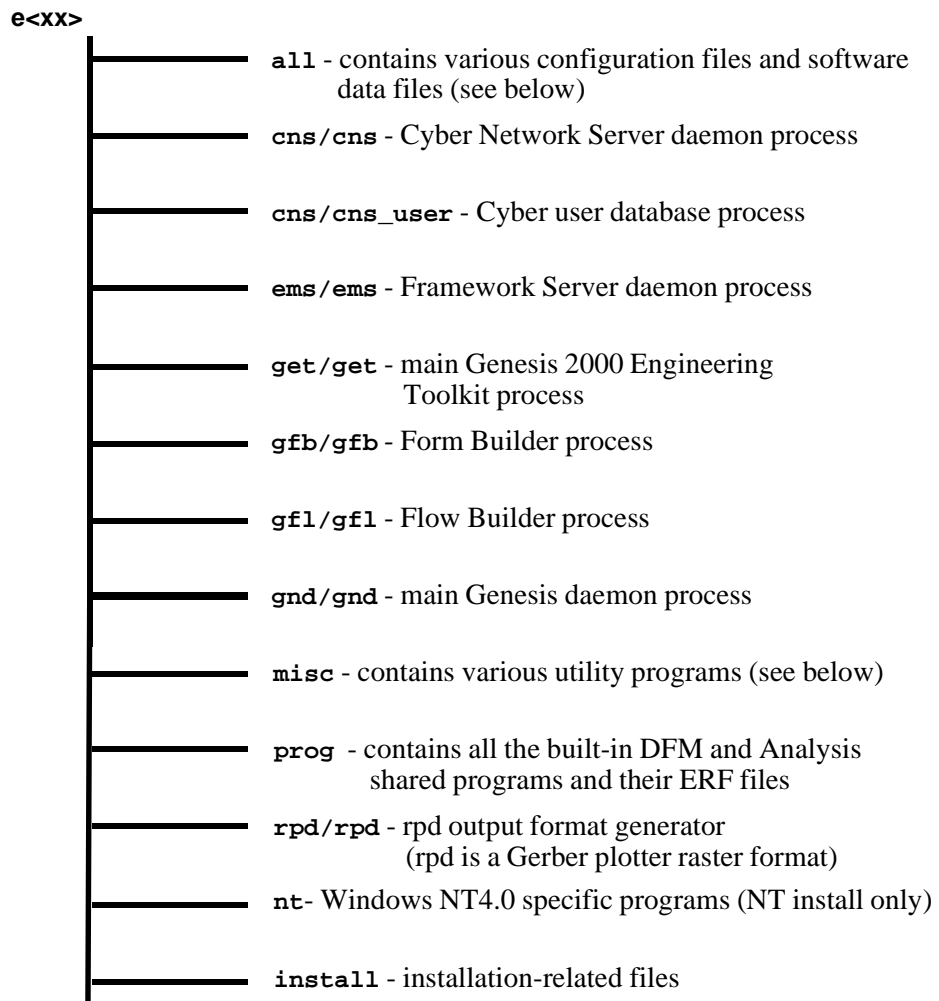
This directory contains all the application programs and version-dependent configuration files.

It is the only platform dependent directory in the tree (see [“Installation of Multiple Platforms” on page 40](#)).

Each version installed will have a separate directory where the <xx> is the version number (without the separating dot), e.g. version 3.1 will have a directory **e31**

You can have multiple **e<xx>** directories if you are running more than one version at the same time.

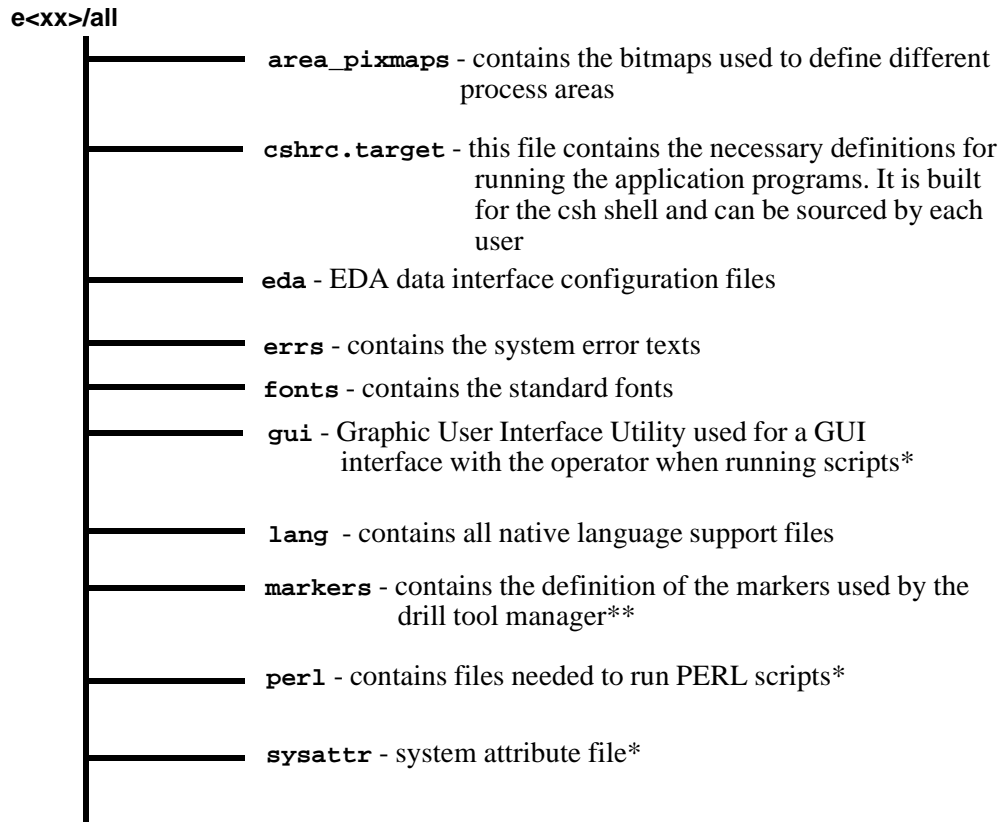
The diagram below describes the **e<xx>** directory contents:



e<xx>/all directory

This directory contains built-in configuration files and the data files used by the software.

The diagram below describes the **e<xx>/all** directory contents:



* Described in Doc. 0203, System Management

** Described in Doc. 0404, The Drill Tool Manager

e<xx>/misc directory

This directory contains various utility programs that are explained in the System Management manual (Doc. 0203).

On SunOS platforms the directory `misc/nls` is used to support the Motif environment.

Note You should not make any changes to this directory as they must be redone when upgrading to a new version.

Location of System Configuration Files and Hooks

Genesis 2000 supports three levels of implementation of various system configuration files and hooks. The system searches in the following sequence:

```
$HOME/.genesis
$GENESIS_DIR/hosts/<hostname>
$GENESIS_DIR/sys
```

For example, the `dblist` file can be placed in either `$HOME/.genesis` or in `$GENESIS_DIR/hosts/<hostname>`. The system will use the `dblist` in these directories without using `dblist` in `$GENESIS_DIR/sys`.

Chapter 5 *Windows NT 4.0 Setup*

Job File Permissions

There are a few methods for solving security problems in Genesis under Windows NT 4.0. Your system administrator will have to establish which solution is appropriate based on network configuration, security policy, and the problems you encounter.

1. Set the environment variable **NUT_SEC_ATTR_OFF** to 1

This causes the security on all files created by Genesis 2000 to be the default security provided by Windows NT, rather than the predefined Genesis 2000 security, i.e. the files inherit their parent's security descriptor.

This method is most highly recommended.

2. Genesis 2000 rely on the Primary Group of the user for setting group permissions. There are two ways to set the Primary Group:
 - Set the environment variable **NUT_PRIMARY_GROUP** to the group you want to enable permissions for the created files.
 - Use the Windows NT Server user manager for domains to set the Primary Group of each user.

This method will not work if operators on more than one workstation need to work on a single job and you are not using Windows NT Server user administration.

3. Use **cacls** to set file mode as part of the automation process.

This solution is the most general, but it moves the onus of file security to the automation process.

4. Use the same Windows NT user for all operators.

This solution will not work if operators on more than one workstation need to work on a single job and you are not using Windows NT Server user administration, unless the Administrator account is used.

Graphic Display

SCO XVision is the X Server provided with the Windows NT version of Genesis 2000 under a special licensing agreement.

There are a plethora of X-servers available on the market. As of now, we have not found any that are bug-free. You may use any X-Server you wish. Customers have reported success with Hummingbird Exceed and PC XWare. However, Frontline's primary X-server is SCO XVision.

There are no known problems with installing two X-Servers on one computer. A problem will only arise if two X-Servers are running simultaneously and are set to the same display number (usually zero)

XVision Troubleshooting Tips

- If an error message that the application cannot open a display appears, check that Xvision is running. A green XV should appear at the bottom right of your screen. If it is not running: Start -> Programs -> Vision -> Xvision Server
- If the green XV appears but the application refuses to open a display, make sure that TCP/IP networking is installed, and that there is a network adapter for TCP/IP.
You can check by: Start -> Settings -> Control Panel -> Network
 - Check that TCP/IP appears under the Protocols tab. If TCP/IP is not installed, install it.
 - Check that there is an entry in the Adapters window. If no network adapter is installed, install one.
 - If the computer has no network card, install MS Loopback adapter
- If TCP/IP is installed and you see the green XV, but the application still refuses to open a display, make sure that the Vision transport TCP-Unix is available:
Start -> Settings -> Control Panel -> Vision Communications -> Transports. If the status of TCP-Unix is Unknown or Unavailable, double click on TCP-Unix -> Enable this transport -> OK -> Apply

On some systems, the tab Settings may be named differently

- If, when installing XVision, the setup program aborts stating that enough disk space is not available in the target installation directory, even though there is plenty of space available. The problem is caused by the Install Shield Wizard being unable to access certain data it needs in the Registry. **UHFIX.EXE** solves this problem. It must be extracted and then the resulting executable **UHFF.EXE** is run. You will get a message indicating success. Then, attempt installing XVision7 again. **UHFIX.EXE** may be found in your `$GENESIS_EDIR/nt` directory.

Other Servers Tips

- If you would like to use your own X-Server, set the following:
 - All the fonts supplied should be installed (except Oriental fonts.)
 - The X-Server should be configured to support Backing-Store whenever a window is mapped.
 - In Exceed, set: Tools -> configuration -> Performance Default backing store: [When Mapped].
 - When using a two button mouse, the X-Server should be configured to support three button simulation.
 - Configure the X-Server to provide a PseudoColor colormap. (v4.1x only)

Colors

There are two modes of color operation which may be used.

- TrueColor
- PseudoColor

To run in Pseudocolor, the Windows NT display must be set to 256 colors. To run in TrueColor, the Windows NT display must be set to 16 million colors or Truecolor.

The Display Visual in the XVision configuration should also be set to let XVision determine the appropriate visual class at startup.

The XVision implementation of Pseudocolor visuals under Truecolor Displays is incomplete.

Use of Pseudocolor mode is not recommended, because Genesis requires using most of the 256 colors, and if places in the colormap are taken by previously running application or toolbars, application colors will not display correctly. This problem is solved on Unix systems by using a private colormap (by setting PCMAP to 1); this is not recommended on Windows NT systems because the Windows NT window manager does not change colormaps at the appropriate time.

The PCMAP environment variable is ignored in Truecolor mode as is the `gui_color_no_mix` configuration parameter. This is a limitation of the Truecolor mode implementation.

Dongles / Licenses

To run Genesis on two computers, only one dongle is needed per site network.

Genesis licenses are floating licenses. For example, if you have 100 Genesis licenses you can run Genesis on 150 computers as long as only 100 operators are logged-in concurrently.

Genesis Daemons (Servers)

/etc/rc Unix Equivalent for Windows NT

Windows NT does not have an equivalent startup script, however:

1. Global environment variables may be set from:
`Control Panel -> System -> Environment`
2. `gnd`, `cns`, and `ems` are installed as Windows NT services and may be controlled from:
`Control Panel -> Services`

Starting/Stopping gnd

Gnd is normally run as a Windows NT service. When installing Genesis 2000 as a server **gnd** is added to the services which are run upon startup.

It may be controlled from:

Control Panel -> Services

Running cns or ems

These servers are normally run as Windows NT services. To install these as services, enter the following at a c-shell prompt:

```
$GENESIS_EDIR/ems/ems -install  
$GENESIS_EDIR/cns/cns -install
```

Uninstalling cns, ems and gnd services

To remove these services enter the following at a c-shell prompt:

```
$GENESIS_EDIR/gnd/gnd -remove  
$GENESIS_EDIR/ems/ems -remove  
$GENESIS_EDIR/cns/cns -remove
```

Running cns, ems or gnd from a c-shell prompt

To run these servers as normal processes enter the following at a c-shell prompt:

```
$GENESIS_EDIR/gnd/gnd -debug  
$GENESIS_EDIR/ems/ems -debug  
$GENESIS_EDIR/cns/cns -debug
```

Foreign Language Support

Genesis 2000 Windows NT supports Japanese.

Japanese Windows NT 4.0 must be used. A special X-Server, distributed by Valor and Orbotech Japan, is also required.

Also, special care must be taken that the number format under Control Panel -> Regional Settings -> Number has the decimal symbol defined as a point.

Troubleshooting

Gnd Server Fails

If the **gnd** server fails running from services with an Access Denied error, but starts fine when run directly [not from "services"] the problem may be:

- If the gnd is on a drive which is a mapped drive letter rather than a regular drive, it can cause this problem. The easiest solution is to set GENESIS_DIR and GENESIS_EDIR to directories on normal [non-mapped] drives. Another [more complicated] solution involves setting up networking which is not connected to user login.

Gnd server does not Load

1. If you get:

Error 0002: The system cannot find the file specified

The path name which is registered for gnd is no longer valid. To fix:

- Run from c-shell the following:

```
$GENESIS_EDIR/gnd/gnd -remove
```

- Reboot
- Run from c-shell

```
$GENESIS_EDIR/gnd/gnd -install
```

- Then run **Frontline gnd server** manually from Control Panel -> Services

If you get:

Process ended unexpectedly

- First check `$GENESIS_DIR/gnd.log`. If you find messages in `gnd.log` that are dated at the time the process was started, they may give you an indication of why the process terminated. If there are no current messages in `gnd.log`, run from c-shell the following:

```
$GENESIS_EDIR/gnd/gnd -remove
```

- Reboot
- Run from c-shell

```
$GENESIS_EDIR/gnd/gnd -install
```

- Then run **Frontline gnd server** manually from Control Panel -> Services

Note For general Windows NT troubleshooting, see [“Frequently Asked Questions” on page 62](#)

Chapter 6

Job Database Management

The Genesis 2000 application uses a database structure to store the jobs managed by the system. All the jobs must reside within a database in order for them to be accessed. These jobs are stored as directories within the database they belong to, the job directory names are the job names used by the application. The system supports one or more databases, which allows you to have a distributed database mechanism with databases spread out on the network.

The application implements this mechanism using two files, `dblist` and `joblist`, described below.

dblist file

This file resides in the `$GENESIS_DIR/sys` directory and contains a list of the databases known to the system. See Doc.0201 Software Installation.

joblist file

This file resides in the 'share' directory of the installation and contains a list of all the jobs in the system (from all the databases).

Each entry in this file looks like this:

```
JOBS {
    NAME=<job name>
    DB=<database name>
    ACCESS=<cyber client access>
}
```

The NAME field defines the name of the job.

The DB field defines the name of the database the job is in.

The ACCESS field defines the Cyber clients allowed to access this job.

This file is managed by the application and should not be changed by the user. For a description of the utilities that give access to the `joblist` see Systems Management (Doc. 0203). A backup of this file (`joblist.BAK`) is created every time it is changed by the software.

To access the job, the application gets the path of its database from the `dblist` and builds the job path using this path and the job name in the following way:

```
<database path>/jobs/<job name>
```

The exception to this rule is the 'Library Job'. This job is structured identically to a regular job and is used by the application to store information that can be used by all jobs. The 'Library Job' has a KEY name in the `joblist` that cannot be changed or used for regular jobs, this name is `genesislib`. The `joblist` must contain one, and only one, entry with this name. To access the library path, the application gets the database path from the `dblist` and builds the path in the following way:

```
<database path>/lib
```

During the initial installation, the install process will create a default database in the `$GENESIS_DIR/fw` directory which includes a default 'Library Job'. The joblist will be initialized with one entry which is the `genesislib` job and a dblist file will be created with a reference to the default database called `genesis`. If you need to move this database to another directory you need to perform the following operations:

Step 1. Move the directory `$GENESIS_DIR/fw` to your destination.

```
e.g. > cd /genesis
      > mv fw /disk/fw
```

Step 2. Change the file `$GENESIS_DIR/sys/dblist` from:

```
DBS {
  NAME=genesis
  PATH=/genesis/fw
  ACCESS=
}
```

to:

```
DBS {
  NAME=genesis
  PATH=/disk/fw
  ACCESS=
}
```

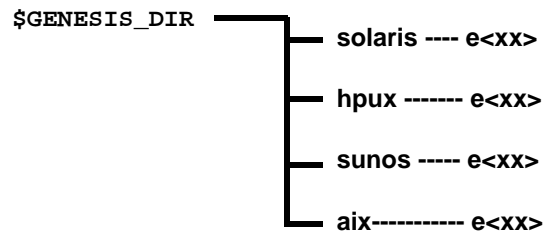
Chapter 7 *Installation of Multiple Platforms*

Introduction

This chapter is intended for users with multi-platform (heterogeneous) environments and explains what you need to do to install them.

You can install multiple platforms of the application in the same root directory by defining a different path for the `e<xx>` directory using the environment variable `GENESIS_EDIR`.

The following description outlines a typical structure of the root directory for multi-platform environments:



To run the application with the above structure you need to define the `GENESIS_EDIR` environment variable in the following way:

```

Solaris:      GENESIS_EDIR = solaris/e<xx>
HPUX:         GENESIS_EDIR = hpux/e<xx>
sunOs:        GENESIS_EDIR = sunos/e<xx>
AIX:          GENESIS_EDIR = aix/e<xx>
  
```

The `GENESIS_EDIR` can be defined as a relative path to the root directory or as an absolute path by placing a slash `/` in front of the full pathname (the system will take that as the pathname).

Installation

The Pro Installer will prompt you for the destination directory of executables when installing `app_get`.

Note If you are working on a busy network, you can improve the performance of the invocation time of the processes in the application by copying the `e<xx>` directories to local disks and defining the `GENESIS_EDIR` environment variable as a full path to the local disk, e.g. copy the `e70` directory to `/local/e70` and set the variable `GENESIS_EDIR` to `/local/e70`.

UNIX-NT Cross Platform Issues

This section describes the cross-platform issues regarding Unix and NT, examining cases with the following network configurations of Genesis 2000 systems:

- The server is a Unix system and NT workstations need access to the files.
- The NT workstation is a server and Unix needs access to the files
- The NT workstation is the server and another NT workstation needs access to the files.

dblist File

In a mixed environment, the `dblist` file may have to be modified or other `dblist` files created. The system searches for the `dblist` file in the following sequence:

```
$HOME/.genesis/dblist
$GENESIS_DIR/hosts/<computername>/dblist
$GENESIS_DIR/sys/dblist
```

Once the system finds a `dblist` file the search is terminated.

If you modify a `dblist` file and it has no effect, the search may have found a `dblist` file higher in the list that you have not noticed.

The line in the `dblist` that needs modification is the `PATH` line.

Environment	PATH Set To
UNIX	<code>/genesis/fw</code>
NT	<code>x:/fw</code> (for example)

These pathnames are not compatible and may need to be changed on a per host basis.

GENESIS_DIR and GENESIS_EDIR

`GENESIS_DIR` is an environment variable pointing to Genesis 2000 files, while `GENESIS_EDIR` points to the Genesis 2000 executables.

`GENESIS_DIR` is an absolute path. `GENESIS_EDIR` can be an absolute path (by placing a slash '/' at the beginning of the pathname). If `GENESIS_EDIR` is a relative path, it is relative to `GENESIS_DIR`.

On Unix systems `GENESIS_DIR` is normally set as an environment variable in the C shell using:

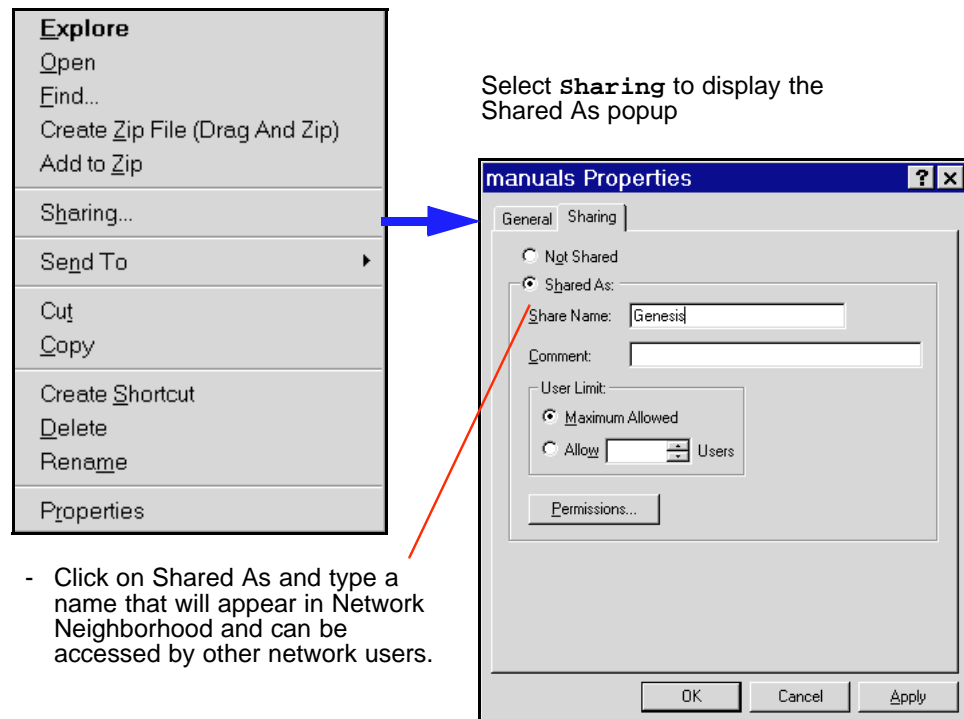
```
setenv GENESIS_DIR /mine/genesis
setenv GENESIS_EDIR e70
```

On an NT system, if the file system is on a local disk, you need to set the environment variables in:

```
Settings / Control Panel / System / Environment
```

You can set these variables in either the system or the particular user. If set for the system, all users will automatically get the definitions.

On an NT system, if the file system is on a remote disk, you firstly need to share the file system on the remote computer. To do this, use Windows NT Explorer, select the directory with the right mouse button to display a popup menu:



You should now be able to see this directory on your computer under Network Neighborhood.

All you need to do then is to map this directory to a letter. There are two ways of mapping a drive. One is to use the command line `net use` utility, the other is to use the tools option in Window NT Explorer.

The end result is that if you have mapped X: say, then Genesis will be accessible through X:. You will need to set the environment variables to something like,

```
GENESIS_DIR X:\genesis
```

NT Workstation Server and NT Workstation Client

In this example you just need to ensure that the `dblist` file is set up correctly and then set up the environment variables. You also need to ensure that the standard environment variables:

```
GENESIS_DIR and GENESIS_EDIR
```

are set correctly. For example:

```
setenv GENESIS_DIR g:/genesis
setenv GENESIS_EDIR c:/genesis/e70
```

To ensure that file permissions are correct both on host and client computers, the `NUT_SEC_ATTR_OFF` environment variable must be set. This variable can be set in the Control Panel>System>Environment:

```
NUT_SEC_ATTR_OFF 1
```

In future versions, we will set this variable to 1 in the program, but will be overridden if set as an environment variable.

It should be noted that the Unix security model and the NT security models are different. On Unix, files in the jobs directory belong to the owner, and can be read, but not written by everyone else. On NT the jobs directory has permissions and all files inherit these permissions. This means that all users in the group have read/write permission. If you want stricter permissions it is possible to set up more than one `fw` database, each having the appropriate permissions.

Unix Server and NT Workstation Client

The NT workstation requires access to the files on the Unix workstation, which necessitates additional software. You can put an NFS client package on the NT, or put Samba on the Unix workstation (see “References” on page 45). You can purchase NFS clients from a number of sites.

Samba is free software for a Unix workstation that allows NT or Windows 95 workstation access to Unix directories and printers in a Windowish way. The Windows user see these facilities as native facilities.

The Samba package consists of many FAQs and documentation. The three most important files are the Samba daemon `smbd`, the name daemon `nmbd`, and the configuration file `smb.conf`. Anyone who installs this package should read the information accompanying the package.

Passwords

We have to consider two computers, the NT computer and the Unix computer on which Unix is running. When the user wants to access a directory on Unix, NT will ask for the username and password. On old versions of NT, both of these fields were passed to Samba for verification against the Unix password. Since service pack 3 on NT, the password is no longer passed as clear text but encrypted. This means that Samba can no longer verify the password because it gets an encrypted copy.

There are a number of workarounds which are well documented in the Samba documentation. The easiest are:

Option 1

The first step is to make a change to the registry to allow clear passwords to be sent. To do this double click the file `NT4_PlainPassword.reg` in the Samba `docs` directory. You will need to reboot the computer.

In the `[global]` section in the `smb.conf` file add the line:

```
security = user
```

If you try to access a directory on Unix and you get the following message:

```
The account is not authorized to login from this station.
```

Most likely you have not set up the registry with `NT4_PlainPassword.reg` as explained above.

Option 2

Use an NT server to validate the password. This means that the password to connect to the Unix computer will be the NT password and not the Unix password.

To do this simply add the following lines to the [global] section of the `smb.conf` file:

```
security = server
password server = computername
```

where `computername` is the name of the NT computer validating passwords.

Below is a partial example of a configuration for Samba. Samba is a highly configurable package which means that it can be made to suit your network. Read the documentation and spend some time examining the options.

It is recommended that Samba be used in preference to NFS.

Sample Extract From Samba Configuration File

```
[global]
  workgroup = WORKGROUP
  printing = sysv
  printcap name = /sw/lib/printcap
  load printers = yes
  guest account = ben
  debug level = 0
  socket options = TCP_NODELAY
  directory mask = 0775
  create mask = 0664
  security = user
; see smb.conf(5) for dos filetime resolution. It ensures there are no problems
; with Visual C++ time mismatches
  dos filetime resolution = True
; password server = ntl
; This next option sets a separate log file for each client. Remove
; it if you want a combined log file.
  log file = /var/adm/samba/log.%m

# Put a capping on the size of the log files (in KB).
  max log size = 50
  dns proxy = yes
; You will need a world readable lock directory and "share modes=yes"
; if you want to support the file sharing modes for multiple users
; of the same files
; lock directory = /usr/local/samba/var/locks
; share modes = yes

[genesis]
  path = /genesis
  public = no
  valid users = david fred shirley
```

```
public = no
directory mask = 0775
create mask = 0644
writable = yes
```

NT Workstation Server and Unix Client

In this scenario, the files are on the NT computer and the Unix workstation accesses. The options are to put an NFS server on the NT computer or to put the Sharity software (see “References” on page 45) on the Unix workstation.

Both the NFS server and Sharity allow you to mount NT partitions on a Unix filesystem. NFS uses the Unix protocol for file transfer, while Sharity uses the NT protocol. We have found that Sharity is faster than NFS, and we recommend using Sharity. There are numerous NFS servers, and this document will be updated from time to time.

Sharity requires a license; check out the Sharity site:

```
http://www.obdev.at/Products/Sharity.html
```

Setting up Sharity is as follows:

1. Download the Sharity binaries and install them. The partition to be mounted has to be shared on the NT workstation.
2. Ensure that the sharity daemon is running, and then mount the partition.
3. Mount the directory:

```
cifsmount //pc19/genesis /aaa -U me -P mypassword
```

4. Do `ls /aaa` on the Unix system, and you should see the files from the NT file system.
5. Before running the get executable, set the environment variables on the Unix box.

```
setenv GENESIS_DIR /aaa
setenv GENESIS_EDIR /genesis/e42/gen_hp10
```

6. Ensure that the `dblist` is correct.

Now you can start Genesis and it should work.

Samba and Sharity

The Samba and Sharity binaries are available at:

```
ftp://Frontline.com/pub/dnload/tools
```

References

NFS NFS software can be purchased from:
<http://www.wrq.com/ntunix>
<http://www.xlink.com>

This is not a recommendation for their use. Other NFS servers and clients are also available.

Samba

The sources and other information may freely obtained from:

<http://samba.anu.edu.au/samba/>

or

<http://samba.gorski.net/samba/samba.html>

Compiled versions may be obtained from:

<ftp://Frontline.com/pub/download/general/tools/samba>

The compile flags for samba are:

```
DSMBLOGFILE="/usr/local/samba/var/log.smb"
DNMBLOGFILE="/usr/local/samba/var/log.nmb"
DCONFIGFILE="/usr/local/samba/lib/smb.conf"
DLMHOSTSFILE="/usr/local/samba/lib/lmhosts"
DWEB_ROOT="/usr/local/samba"
DLOCKDIR="/usr/local/samba/var/locks"
DSMBRUN="/usr/local/samba/bin/smbbrun"
DCODEPAGEDIR="/usr/local/samba/lib/codepages"
DWORKGROUP="WORKGROUP"
DGUEST_ACCOUNT="nobody"
DDRIVERFILE="/usr/local/samba/lib/printers.def"
DSMB_PASSWD="/usr/local/samba/bin/smbpasswd"
DSMB_PASSWD_FILE="/usr/local/samba/private/smbpasswd"
```

Commercial products include:

SCO's Vision FS - <http://www.sco.com/vision/products/visionfs>

AT&T's Advanced Server - http://www.att.com/unix_asu

Syntax's TAS - <http://www.syntax.com>

Sharity

General information can be found at:

<http://www.obdev.at/Products/Sharity.html>

Binaries are available from:

<ftp://ftp.obdev.at/pub/Products/Sharity/binaries/>

<ftp://Frontline.com/pub/download/general/tools/sharity>

Sharity is not freeware and licences must be purchased.

Mount NT Disk Under Unix

There are three options:

1. Run an NFS server under Windows NT.

Hummingbird NFS Maestro Server is a commercial NFS server for Windows NT.

The aforementioned Network Computing Magazine article also discusses different NFS servers for Windows NT.

2. Run an SMB client under Unix

Sharity is an SMB client available for download from:

`ftp://ftp.Frontline.com/pub/dnload/tools/sharity/`

or from

`ftp://ftp.obdev.at/pub/Products/Sharity/binaries/`

A license from Objective Development is required for using Sharity.

See <http://www.obdev.at/Products/Sharity.html> for more details.

Note Samba (see above) includes a program called `smbclient` that is not an SMB client.

3. The third option is to share files on a multiprotocol file server.

This is a hardware solution. Information on two commercial products is available from:

Auspex - <http://www.auspex.com/products/netservices/index.html>

Network Appliance - <http://www.netapp.com>

Unix and NT On Same Database and gnd

To use the same `gnd` and database you must have file-sharing between systems (see [“Mount NT Disk Under Unix” on page 46](#)).

Using the same `gnd` requires setting the environment variable `GENESIS_DIR` to the directory where the application has been installed. This path will be different on Unix and NT systems.

For example:

On a Unix system, `GENESIS_DIR` might be `/genesis` but on the NT system it might be `g:/genesis`

Another alternative which may be suitable in rare cases is to use the environment variable `GENESIS_SHAREDIR`.

To share a database, requires having the active `dblist` file have the value of the path of the database as its `PATH` value.

For example:

- On a Unix system, this value might be `/genesis/fw`
- On an NT system it might be:
 - `f:/`
or
 - `//sol120/fw` (a UNC path with forward slashes)

`dblist` files may appear in one of three places:

- `$GENESIS_DIR/sys/dblist`
- `$GENESIS_DIR/hosts/<host name>/dblist`
- `$HOME/.genesis/dblist` (a.k.a. `~/.genesis/dblist`)

A `dblist` file in `$HOME/.genesis` takes precedence over a `dblist` file in `$GENESIS_DIR/hosts/<host name>` and `$GENESIS_DIR/sys`.

A `dblist` file in `$GENESIS_DIR/hosts/<host name>` takes precedence over a `dblist` file in `$GENESIS_DIR/sys`.

Unix/NT Environment Using Samba

Configure `$GENESIS_EDIR` on Windows NT to point to a local install of the executables. This may be a bit tricky using Pro Installer. You have to install as a server, but not install the `GND` process. After every update you have to remember to fix the `$GENESIS_DIR` variable.

Configure `$GENESIS_DIR` to point over a mapped drive using `SAMBA`. This will allow scripts, joblist, etc. to be recognized.

Configure `$GENESIS_DIR/host/"system"/dblist` to correct the locations of the databases. Remember `SAMBA` will allow you to export NFS mount points.

The best install of a UNIX system is to cluster all your database mount points into one directory. Then have `SAMBA` broadcast that one directory. This way you only need to install `SAMBA` on one UNIX station and broadcast.

Configure (this is important) `$GENESIS_TMP` to be local on Windows NT (no need to keep broadcasting this noise back and forth over the network). Not to mention there is a UNIX lock issue with our log file that the Windows NT `get.exe` process has trouble with at exit.

Windows NT / Unix File Systems

Filenames

1. Windows NT filenames are case-preserving but case-insensitive. For example:

```
% echo hello > aaa
% echo good-bye > AAA
```

creates one file containing "good-bye"

Another example:

Only one of `bbb` and `BBB` will be accessible through NFS

2. Under Windows NT, full paths begin with:

`x:/` where *X* is any uppercase or lowercase letter.

or

`//computer_name/share_name` -- these are known as *UNC paths*.

3. There is no `/dev/null` file as in Unix. The reserved name `nul` may be used instead.
4. Filenames of the following forms are illegal:

<code>con</code>	<code>prn.*</code>	<code>nul.*</code>
<code>con.*</code>	<code>pa.*</code>	<code>*.</code>
<code>prn</code>	<code>nul</code>	

5. Backslashes may be used as delimiters as well as forward slashes.

6. Filenames with spaces inside are more commonly used in Windows NT.
7. NTFS does not support soft (symbolic) links.

Windows NT File Permissions vs Unix

File permissions are completely different under Windows NT.

`chmod, ls -l, ll, etc.`

cannot be relied upon to give expected results. The recommended tools for viewing and changing file permissions are Windows NT Explorer and the command line `cacls.exe`.

Soft Link (symbolic link) on Windows NT

Basically, this cannot be done. Windows NT has three features which give a very little bit of the functionality of soft links.

1. The Windows NT graphic interface supports **shortcut** files.

These are a kind of "soft link" to other files, but these are only useful when using the Windows NT graphic interface.

2. A directory may be Shared As some name. For example:

If on my computer `//cpq22` I share the directory `/genesis/help_files` as "help" then the directory will be accessible as `//cpq22/help` over the network (as well as locally.)

3. If a directory is Shared As, it may be mounted as a filesystem with a drive letter on any other NT system.

Path Element Delimiters

Unix path elements are delimited with forward slashes (/) while Windows NT paths are delimited with backslashes (\). Genesis 2000 handle this as follows:

Win32, the Windows NT API, supports both forward slashes and backslashes. Though the DOS shell (Command Prompt) supports only backslashes.

A path may be entered in Genesis 2000 in either form, or even mixed.

Chapter 8 *Scripting on Windows NT*

Genesis 2000 are distributed with a set of GNU tools which include `cs`**h**, `g`**rep**, `c`**at**, *etc.* Unix scripts will have to be modified to take into account the following:

1. File system differences (see “[Windows NT / Unix File Systems](#)” on page 48)
2. The version of "awk" in the release is named "gawk" and has a slightly different syntax.
3. Process id's (accessed in c-shell using `$$`) are reused at an alarming pace by Windows NT.
4. The `GENESIS_EDIR` environment variable is normally defined as a full path on Windows NT but is normally a relative path on Unix (relative to `/genesis` or `GENESIS_DIR`)

“sort”, “find” Commands

"`sort`" and "`find`" commands are built into Windows NT in `/winnt/system32`.

If they fail, perform one of the following:

1. Put `/usr/local/bin` in your path before `/winnt/system32`
2. Alias `sort` to `/usr/local/bin/sort` in startup scripts.
Alias `find` to `/usr/local/bin/find` in startup scripts.

Location of "awk"

The version of `awk` supplied is named `gawk` with a slightly different syntax than the standard Unix `awk`.

- You may have to protect double quotes with backslashes.
- Use `exit` at the end of your program to prevent **abnormal program termination**

GENESIS_DIR / GENESIS_EDIR Values

If your `GENESIS_DIR` and `GENESIS_EDIR` values are incorrect inside scripts, you can fix this as follows:

- One option is to use double slashes instead of single slashes in the definitions of `GENESIS_DIR` and `GENESIS_EDIR` (for example, change `GENESIS_DIR` from `C:/genesis` to `C://genesis`) under Control Panel -> System -> Environment

The other alternative, is to set the environment variable `NUT_ENV_LITERAL` to `GENESIS_DIR,GENESIS_EDIR,GENESIS_TM`, a comma separated list of environment variables you do not want to be touched.

Note This is done during the installation process as of version 6.0.

Chapter 9

The Cyberlink Package

Overview

The Cyberlink package allows the Genesis customer to communicate with remote users via Internet/Intranet using common Web Browsing tools such as Netscape, HotJava or Explorer. Communication is performed by running a Java applet on the client side which communicates with the server side running a daemon process (CNS) within the Genesis 2000 environment.

The client-side of the Cyberlink package is written in Java and therefore is platform independent, meaning it will run on any platform, in any Java-enabled Web browser. The package is comprised of a number of class files (which are the Java binary files) and GIF images.

An applet tag in one of the customer's HTML pages will activate Cyberlink when the page is entered (see the file `index.html` for an example). When the client enters this page, the relevant class files (stored on the server) are loaded by the browser and the Cyberlink applet is run (on the client machine).

The Java applets receive their information from the CNS Daemon process (which is included in the Genesis 2000 release). This process should be run on system startup (like the `gnd`) on any host within the genesis environment (this does not have to be the same host as the one that `gnd` is running on, see JAVA notes on other restrictions of the host that `cns` should run on). The CNS daemon acts as an agent for the Java applets, reads/updates forms, the list of jobs/forms/flows... etc., and relays this information back to the Cyberlink Java Applet.

The Cyberlink environment contains the CyberForms and CyberFlows modules of the Genesis 2000, these modules enable remote clients to view/update the WorkForms and WorkFlows in the database of the server system (see the manuals WorkForms (Doc. 0801) and WorkFlows (Doc. 0802)).

When a client activates the Cyberlink applet, there will be a login screen displayed in the browser window. The client/user will then type the login and password supplied to them by you. This login is authenticated by the CNS server by checking it against the CNS user database and if it is legal, the client will be allowed to enter the Cyberlink application. After logging in, a new window will appear on the client's screen, similar to the Engineering toolkit window, and can be used to navigate through the live database on the server Genesis 2000 system. For an explanation of how to use the Cyberlink applet see The Cyberlink Environment manual (Doc. 0804).

Cyber Forms

The Cyber Forms are viewed in separate windows which are activated from the Cyberlink main screen and are identical to those viewed within the Genesis 2000 environment.

All changes to the same form being viewed by anyone in the net (whether in the Genesis 2000 environment or using Cyberlink) are automatically updated in the form. In other words the Cyber Forms behave the same as Work Forms. Cyber Forms cannot use the <Menu> button (or Button 3) to view or debug callback scripts. Grabbing images is not supported by Java at this stage and therefore, we do not support this feature in Cyber Forms yet.

Callback script activation

The callback scripts activated by the form elements, and on open/close of the form itself, are run on the server side by the CNS daemon. These scripts are the same as regular form callback scripts and can contain the following COM commands only:

<code>show_form</code>	<code>close_form</code>
<code>edit_form</code>	<code>read_form</code>
<code>set_form_focus</code>	<code>show_flow</code>
<code>close_flow</code>	<code>flow_info</code>

CyberFlows

The Cyber Flows are viewed in separate windows which are activated from the Cyberlink main screen and are identical to those viewed within the Genesis 2000 environment.

Note There are no zoom/pan functions in the Cyber Flows windows. Cyber Flows are view only and cannot be updated by the user.

All changes of the same flow being viewed by anyone in the Genesis environment are automatically updated in the flow. Cyber Flows cannot use the <Menu> button (or M3) to update a stage or view the info.

Cyber Flows do not perform any callback scripts

You can click on the Form icon in a flow stage to open the specified Cyber Form and click on a sub-flow stage to view the sub-flow.

User Database

The CNS server has a user database that describes the users that can login to Cyberlink. A users file contains entries for each user including the encrypted password for the user. The environment variable `CNS_USERS_PATH` defines the full path to the users file. If it is not defined, the default users file, `$GENESIS_DIR/sys/cns_users`, is used.

Each line in the users file is of the following format:

```
username:password:groupname:licopts:path:welcome message
```

Username	The user login name
Password	The encrypted password
Groupname	The user group name

This is used in conjunction with the Genesis 2000 joblist to define the jobs that are viewable by the user. If the group name matches the ACCESS field in the joblist, then this job can be viewed (see notes on “[Access Permissions](#)” on page 54).

licopts A ':' separated list of License options that can be used by this user (see “[Licensing Mechanism](#)” on page 55).

path This path defines the directory in which the forms/flows access permission files reside (see notes on “[Access Permissions](#)” on page 54).

Welcome message You can use this field to customize welcome messages that are displayed on the client's login screen after a successful login.

The users file is managed by the process:

```
$GENESIS_DIR/e$GENESIS_VER/cns/cns_user
```

This is a simple terminal interface process that can be used to add/change/delete/list user entries. This process must be used to add a user entry, because it is the tool used to encrypt the password.

cns_user is an interactive process and is not run with any parameters, you can type '?' at the prompt for a description of all the functions.

Example user files:

```
bob:UQXIOZJH:intel:cbflows;cbforms:/cnsdb>Welcome to Cyberlink
alice:NOHYQDLV:intel:cbforms;cbflows:/cnsdb/intel:Peters
steve:MPQWWJYU:praegitzer:cbforms:/cnsdb/steve:Hi Steve!!
tim:NXRQYVQZ:Frontline:cbforms:/cnsdb/Frontline:Timothy,
Hello!!
```

Access Permissions

Each user that logs in to the Cyberlink can view **ONLY** the jobs/flows/forms that they have access to. Access of jobs is controlled internally on the Genesis 2000, whereas access of forms/flows is controlled via separate files that are part of the CNS User Database.

Job Access

The Genesis application controls all the jobs of all the databases via the joblist file (/genesis/share/joblist). All the jobs have an entry in this file. One of the parameters of the job entry is ACCESS, the value of this field is a ':' separated list of group names that correspond to the group name of the user in the CNS user database (see above). After logging in to Cyberlink, only the jobs with a matching group name will be viewable.

To update the ACCESS status of a job you should use the following line mode command (see the Line Mode Command Manual (Doc. 0203)).

```
COM set_job_access , job=jobname , access=groupname:groupname . .
```

Form/Flow Access

Form/Flows access control is done using simple ASCII configuration files that reside in the directory defined by the 'path' field in the CNS user database (see above). The following files should exist in this directory:

forms - for forms access control.

flows - for flows access control.

These files contain multiple lines of the following format:

```
[+-][wname[:wjob]]
```

1. + in a line by itself means *include all names*.
2. - is ignored.

Note The default behavior is to exclude all names.

3. **wname** is the name of the form/flow, this name can be defined using the wildcard '*' notation.
 - If wname is preceded by a '-' it is excluded from the overall list.
 - If wname is preceded by a '+' or nothing it is added to the overall list.
 - If wname is succeeded by a ':wjob' then it describes the forms/flows that are in the job(s) defined by the wjob field which is wildcard notation of job names.

Note If the job is not viewable by the specified user (see Job Access above) then the line is ignored.

4. If no job name is specified, assume all jobs.
5. Empty lines or lines beginning with # are ignored.

Example (Forms)

```
# this file will allow access only to forms:
# 'form1' & any form matching the expression *.new
# in any access-able job.
+form1 ---> allow access to form1 in all accessible jobs
form1:* ---> same as the line above
*.new ---> allow access to all forms matching the *.new
notation in all accessible jobs.
```

Example (Flows):

```
# this file will allow access to all flows except:
# 'flow1' in jobs j1 & j2 and any flow matching the *.new
# expression in any job.
+ ---> allow access to all flows
-flow1:j1 ---> deny access to flow1 in all accessible jobs
-flow1:j2 ---> same as the line above
-*.new ---> deny access to all flows matching the *.new
notation in all accessible jobs.
```

Licensing Mechanism

The Cyber Forms and Cyber Flows are licensed by the number of users defined in the CNS user database that have these options in the **licopts** field (see User

database above). This is **NOT** a floating license mechanism, and only the licensed users can view (unlimitedly) the Cyber Forms/Cyber Flows. If the User database includes more users with the option than the license allows, only the first users in the file will be able to use the option, the remaining users' options will be ignored.

License options

Example

<code>cbforms-9-010-255-060</code>	<code>---</code>	the first 10 users with the 'cbforms' option in <code>licopts</code> field are licensed to use Cyber Forms
<code>cbflows-9-255-255-060</code>	<code>---</code>	all users with the 'cbflows' option in <code>licopts</code> field are licensed to use Cyber Forms

Note When starting up the CNS daemon or the `cns_user` process, error messages appear for each user that has had his/her license revoked.

Installation

To install the Cyberlink package, you should install the product name `app_cyb` using the Pro Installer (see [“Installation” on page 22](#)). The server part of the Cyberlink package (i.e. the `cns` server and `cns_user` process) is part of the main Genesis 2000 installation described in this manual as `app_get`.

The Cyberlink.package contains the following components:

<code>index.html</code>	a demo HTML page with the applet tag
<code>index2.html</code>	a demo HTML page with an applet that gets the path to the customer gif file as a parameter
<code>classes</code>	a directory with the class files of Cyberlink
<code>cyberlink_images</code>	a directory with GIF images used by Cyberlink applet and the demo index.html file
<code>images</code>	a directory with the customer GIF customer.gif - can be replaced by the customer logo

Before installing the Cyberlink package, you must first install an `httpd` server on the host that is running the CNS daemon. `httpd` can be downloaded from the Internet and the installation is straight forward. Make sure that the `cgi-bin` directory is cleared so that the `httpd` is used *only* for Cyberlink services. When you install the `httpd`, you define the document root directory. Use this directory (or a subdirectory of it) as the destination path when installing `app_cyb`. To run the Cyberlink package, run the browser on any computer that has access to the server (where `CNS` and `httpd` are running) and open the following URL:

`http://servername/index.html`

Note See [“Firewall Considerations” on page 57](#) for a description of what needs to be done when the server is behind a firewall.

Java Notes

Security Running Java applets in the Web browser is done following a security policy that is incorporated by the browser. In all cases, this states that an applet can only connect to the host from which it was activated (i.e. where the HTML page with the applet tag is), therefore the CNS process must run on the same host as the `httpd` daemon.

Versions This version of Cyberlink runs on Java 2.0, and is supported by all the latest versions of browsers.

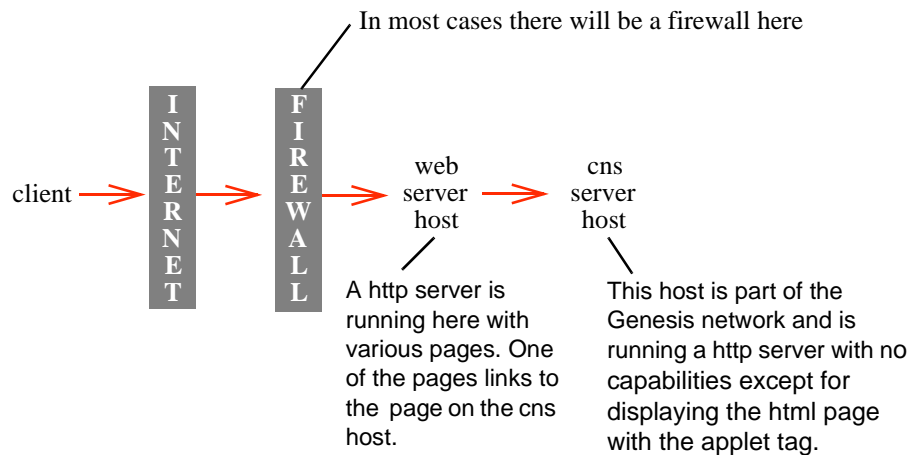
Enable Java in Browsers If you cannot activate a Java applet in your browser, first make sure that the version you are running is Java-enabled.

HTTP Notes

You must have an `httpd` installed and running on the same host that the CNS server is running in (because of Java applet security restrictions).

The following diagram describes the proposed network connections that are needed when the Cyberlink package is installed at a customer site:

Note Bold indicates where a user response is required.



Firewall Considerations

The above diagram describes the connections going through a firewall, this firewall needs to be configured to allow the following communications:

- HTTP (port 80) from the Internet to the CNS host.
- CNS communication ports from the Internet to the CNS host. These ports are 22165 and 22166, and are both read and write.

In cases where the client is sitting behind a firewall as well, the firewall must be configured to allow outward connections so that the Cyberlink applet will be able to connect to CNS.

Appendix A *Common Examples*

Finding out the Node ID of the License Host

Note Make sure all hexadecimal alpha digits are in uppercase.

Note As of Genesis 7.0, node ids are not required.

On HP systems

Run the command `> /etc/lanscan`

The output will be similar to this

Hardware Mjr Path Num	Station Address	Dev lu	Hardware State	Net-Interface NameUnit	NM State	Encapsulation ID Methods
2.0.2	0x08000912ABEF	0	UP	lan0	UP	4 ETHER
52						

The Node id used by the license manager is the last 6 digits of the Ethernet address (i.e. the above station address defines 12ABEF as the Node id).

On Solaris systems

Run the command `> /usr/ucb/hostid`

The output will be similar to this

`80567a10`

The Node id used by the license manager is the last 6 digits of the `hostid` (i.e. the above `hostid` defines 567A10 as the Node id).

On SunOS systems

Run the command `> /bin/hostid`

The output will be similar to this

`80567a10`

The Node id used by the license manager is the last 6 digits of the `hostid` (i.e. the above `hostid` defines 567A10 as the Node id).

*On IBM AIX
systems:*

Run the command	> /bin/entstat ent0
-----------------	---------------------

The output will be similar to this	ETHERNET STATISTIC (ent0) Device Type: IBM PCI Ethernet Adapter (22100020) Hardware Address: 08:00:5a:f8:8b:51 Elapsed Time: 0 days 2 hours 48 minutes 44 seconds
------------------------------------	--

The Node id used by the license manager is the last 6 digits of the Hardware Address (i.e. the above address defines 08AB2F as the Node id).

Note If more than one hardware adapter is installed:
Set the environment and variable `$GENESIS_AIX_ENTDEV` to the name of the ethernet adapter and run `/bin/entstat $GENESIS_AIX_ENTDEV`

Example transcript using cns_user

```
# cns_user
cns_user >?
a - Add a user
e - Edit a user
p - Change password
d - Delete a user
l - List users
q - Quit
? - Show this help

cns_user > l
USER      GROUP      LICOPTS      PATH      WELCOME MMSG
====      =====      =====      ===      =====
bob       intel      bflows;cbforms /users/intel/cnsdb Hi Robert
alice     intel      bforms;cbflows /users/intel/cnsdb Welcome
cns_user > a
a
Enter User name: test
Enter Password:
Re-Enter Password:

Enter User Group: genesis

Enter license opts (separated by;): cbforms;cbflows

Enter User path: /users/test/cnsdb
Enter User Welcome: welcome

cns_user > l
USER      GROUP      LICOPTS      PATH      WELCOME MMSG
====      =====      =====      ===      =====
bob       intel      cbflows;cbforms /users/intel/cnsdb Hi Robert
alice     intel      cbforms;cbflows /users/intel/cnsdb Welcome
test      genesis    cbforms;cbflows /users/test/cnsdb  welcome

cns_user >?
```

```
a - Add a user
e - Edit a user
p - Change password
d - Delete a user
l - List users
q - Quit
? - Show this help
```

```
cns_user > p
Enter User name: test
Enter Old Password:
Enter New Password:
Re-Enter New Password:
```

```
cns_user > e
Enter User name: test
Enter New User Group [genesis]: genesis2
Enter New license opts (separated by), [cbforms;cbflows]: cbforms
Enter New User Path [/users/test/cnsdb]:
Enter New Welcome message [welcome]: hello
```

```
cns_user > l
USER  GROUP  LICOPTS          PATH                WELCOME MESSG
====  =====  =====
bob   intel   cbflows;cbforms  /users/intel/cnsdb  Hi Robert
alice intel   cbforms;cbflows  /users/intel/cnsdb  Welcome
test  genesis2 cbforms          /users/test/cnsdb   hello
```

```
cns_user > d
Enter User name: test
```

```
cns_user > l
USER  GROUP  LICOPTS          PATH                WELCOME MESSG
====  =====  =====
bob   intel   cbflows;cbforms  /users/intel/cnsdb  Hi Robert
alice intel   cbforms;cbflows  /users/intel/cnsdb  Welcome
```

```
cns_user > q
```

Appendix B *Frequently Asked Questions*

General

B.1. *Where can I get 'gunzip'?*

gunzip is readily available on the internet in binary form.
You can also find it on the Frontline-pcb.com FTP server.

B.2. *How long does it take to perform the installation?*

The installation script takes about 20 minutes to run.

B.3. *What do I do if I do not have a license and the installation asks me for one?*

Cancel the installation. You can install the license at a later time.

B.4. *How can I run the application on a host that is not the server?*

Any host can run the application by defining the environment variable **GENESIS_DIR** to the root path of the application (where the application is installed). You need to use NFS (Network File System) to be able to access this path from the client hosts.

B.5. *Does the name of the Root directory of the installation have to be 'genesis'?*

No, you can choose any name.

B.6. *What are the minimum environment variables needed to run the application?*

If your application is not installed in the path **/genesis** then you must define the environment variable **GENESIS_DIR** to your installation directory.

e.g.: `setenv GENESIS_DIR /home/genesis`

You must have the environment variable **GENESIS_VER** set to the version.

e.g.: `setenv GENESIS_VER 70`

B.7. *Do I have to use the `csSRC.target` file to run the application?*

No, this file is installed just as a suggestion, you can build your own initialization script that can be run by all users, and you can place it anywhere you want.

B.8. *Where is the license file located?*

The license file should be in:

`$GENESIS_DIR/share/license`

It is called:

```
LAAAAAA.DDDD-DDDD-DDDD-DDDD
```

or

```
LDDDD-DDDD-DDDD-DDDD
```

where:

```
AAAAAA is the Node ID of the host
DDDD-DDDD-DDDD-DDDD is the ID of the dongle
```

Frontline Pro Installer (Solaris)

B.9. *When I download a new version of Genesis 2000 the Pro Installer downloads data files in the form ???_???.tgz.??? (i.e.,app_get.tgz.p01). The Pro Installer informs me of a checksum error. Why?*

When there is enough room to download all the ???_???.tgz.p?? files but there is not enough disk space to create ???_???.tgz, the concatenated compressed tar file of the same files, the Pro Installer informs the operator of a checksum error at the end of the downloading stage.

This may be confusing, since the files actually arrived correctly, and the real problem is lack of disk space.

Window NT 4.0 / Pentium - Specific

B.10. *The system tends to get bogged down after being left on for a few weeks, even though I close Genesis frequently. What can I do?*

- Close your X applications and restart your X-Server.

X-Servers are notorious sources of memory leaks.

SCO XVision may be restarted by pressing the right mouse button on the green **xv** on your taskbar, and choosing Restart.

B.11. *What style files does Genesis use on Windows NT?*

DOS style (**CR-LF**) or Unix style (**LF**).

Genesis works with both. The c-shell has some problem with DOS style files. A utility `/bin/remove_cr` has been provided to convert files from DOS to Unix.

B.12. *What is launch.exe?*

Normally when a console process is run in a new console, when the process dies, the console closes.

The role of **launch.exe** is to launch **get**. Thus if the **get** program ends for any reason, the console window containing the log remains open rather than disappearing immediately, and the operator has an opportunity to read what is displayed in the window.

Windows NT Installation Troubleshooting

B.13. What can I do if the Dallas Instruments Dongle driver does not install

Check that the Parallel device driver is running. (Start -> Settings -> Control Panel -> Devices)

If the device driver is not running, start it. If it does not start, check in the Event Viewer why it failed. (Start -> Programs -> Administrative Tools -> Event Viewer)

B.14. I entered an invalid Frontline NT registration number. Now when I install, there is no request for the registration number. What can I do?

Delete the following key from the Windows NT Registry:

`HKEY_LOCAL_MACHINE/SOFTWARE/Datafocus/NuTCRACKER/LicenseNumber`

(Start -> Run -> regedt32 -> OK -> HKEY_LOCAL_MACHINE -> ...)

and rerun the stage.

B.15. The software works if I'm logged on as Administrator, but crashes when I run as a different user. What can I do?

The current installation program assumes that the **HOMEDRIVE** of the installer (Administrator) is the same as the **HOMEDRIVE** of the operator.

If this is not the case, there are two ways to overcome this problem:

1. From the User Manager (Start -> Programs -> Administrative Tools) set the Home Directory of the operator to a directory which is on the desired drive.
2. Copy the `/usr` and `/bin` directories to the top level directory of the operator's Home Directory.

(This problem has been solved in software V4.2)

B.16. I installed a new version of Genesis, but when I run the application from my shortcut, it still runs the old version.

The installation procedure creates a shortcut under: Start->Programs->Frontline. This shortcut will be updated. Any other shortcuts made manually will not be updated automatically, and must be updated manually.

Standalone Troubleshooting

B.17. I am running a computer standalone -- I do not need TCP/IP -- but nothing is working.

Genesis 2000 require that TCP/IP be installed even on standalone computers.

Make sure that TCP/IP networking is installed, and that there is a network adapter for TCP/IP.

Check as follows:

Start -> Settings -> Control Panel -> Network

- Check that TCP/IP appears under the **Protocols** tab. If TCP/IP is not installed, install it.
- Check that there is an entry in the Adapters window. If no network adapter is installed, install one.
- If the computer has no network card, install MS Loopback adapter

B.18. *I am running my computer standalone. Genesis 2000 takes a long time (about three minutes) to between STARTING CONNECTION and ENDING CONNECTION after logging in. What can I do?*

There are two options:

1. The following solution is feasible if your network card is removable (e.g. **PCMCIA**)
 - Turn off your computer
 - Take out your network card.
 - Turn on your computer

On some laptop computers the PCMCIA card does not have to be removed, and on others the modem card must be removed also.

2. The following solution is feasible for a computer which is never connected to a network (requires using your Windows NT Installation CD.)
 - Remove TCP/IP from your network protocol list.
 - Remove your network card from your network adapter list.
 - Reboot.
 - Install TCP/IP.
 - Install MS loopback adapter as your network adapter.
 - Give **200.200.200.200** as your IP Address and Default Gateway (any legal address will do.)
 - Reboot.

B.19. *Yesterday everything worked but now gnd does not come up and neither does the Login Screen. What can I do?*

This phenomenon has been observed in two cases:

1. The computer was jostled during shipping and the network card came loose.
2. The computer was using an IP address obtained by a DHCP server when the computer was connected to the network. The IP address ran out because the computer could not contact the DHCP server to renew the IP address, and TCP/IP services stopped working. To alleviate, use:
 - Start -> Settings -> Control Panel -> Network -> Protocols -> TCP/IP Protocol -> Properties ... -> IP Address -> Specify an IP Address.and set the IP Address to a legal IP Address.

Miscellaneous Troubleshooting

B.20. *Whenever I drag a window, the window becomes white until I stop dragging. How can I stop this?*

Uncheck the box labeled "Show window contents while dragging" in Start -> Settings -> Control Panel -> Display -> Plus!

B.21. *When I try to login to Genesis, nothing happens for a few minutes and then I get an error that the application cannot connect to gnd. What should I do?*

1. Check that the environment variable `GENESIS_DIR` is set correctly.
Check that `GENESIS_DIR` points to the same directory on the server and the client. (Control Panel -> System -> Environment)
2. Check that `gnd` is running on the server (Control Panel -> Services). If not, examine `$GENESIS_DIR/logs/gnd.log` for explanations.
3. Check network configuration. For example, a bad address in the `DNS Service Search Order` can cause this.

B.22. *When I use XPaint, the image looks fine, but when I put the image in a form, it looks awful. What is the problem?*

XPaint uses the default X visual to choose image depth. Genesis 2000 recognizes only 8 bit images. To cause XPaint to generate 8 bit images (rather than 24 bit images) do the following:

- Start -> Settings -> Control Panel -> Display -> Settings
- Set Color Palette to 256 colors
- Restart Xvision
- Run XPaint.

Note On some systems, the tab Settings may be named differently

When you are finished using XPaint, you will probably want to set the number of display colors back to 16 Million (or Truecolor.)

B.23. *Opening the Form Builder or Flow Builder from within the clipboard fails, but otherwise, they open fine. What is the problem?*

This problem has been observed when the `GENESIS_DIR` variable is set to "`x:`", where `x` is any letter. Setting `GENESIS_DIR` to `x:/` solves the problem. The source of the problem is that in Unix environment variables, colons are used to separate between paths, and a trailing colon is not identified as a path of a directory name by the Windows NT c-shell interpreter.

A second alternative is to use the UNC path of `GENESIS_DIR`.

Customer Service

For upgrading / extending your Frontline licence and other technical support, call Frontline at your location.

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Appendix C *Error Messages*

C.1. Please become superuser before running this script

The person who runs the installation script must have root privileges. This is required for setting some system files which are accessible typically to the system administrator.

C.2. To install a client, first install on the server and then create a link to the GENESIS server installation directory

The station on which the installation is performed must be the one which will be the server. The server runs a daemon process (gnd) which supports all clients. The server also contains all the system installation files.

C.3. Error creating directory <install_dir>, aborting installation

The mkdir command failed for the installation directory. Please check if the path is correct.

C.4. Could not write to file <dongle_file> - cannot continue with dongle setup

The dongle is either not plugged in or the running of the **dongle_info** program failed.

C.5. Cannot find current kernel configuration file, aborting installation

This message is on Sun/OS installation when the kernel file name inside the **/rtc/motd** file does not exist.

Appendix D *System Administrator Notes*

cschrc.target File

The supplied `cschrc.target` file:

```
# Target Environment setup
#####

# Set up default command search path:

unset autologout

# Set up C shell environment:

if (-e /usr/ucb/whoami) set USER = `/usr/ucb/whoami`; ;
if (-e /usr/bin/whoami) set USER = `/usr/bin/whoami`; ;

# set USER=`whoami`:

if ($?TERM) then
    if($TERM == hpterm) setenv TERM hp
endif

setenv GENESIS_VER 32
setenv GENESIS_DIR /genesis

alias get '$GENESIS_DIR/e$GENESIS_VER/get/get \!:* &'
alias gfb '$GENESIS_DIR/e$GENESIS_VER/gfb/gfb \!:* &'
alias gfl '$GENESIS_DIR/e$GENESIS_VER/gfl/gfl \!:* &'
alias psp 'ps -el | grep \!:\! | grep -v grep'
```

Dongle Troubleshooting

UNIX

If `dongle_info` fails on Unix, check the following:

1. The dongle is plugged in securely.
2. There are no other devices on the serial port
3. Your dongle is beige and is labeled DS1412. [Windows NT dongles are black and are labeled DS1410].

4. The dongle is plugged into a serial port and not a parallel port [sometimes labeled //.]
5. If `dongle_info` still fails, find out what device file is mapped to your serial port and that you have Read and Write permission to your serial port. Here is how:

Serial ports are usually mapped to:

```

HPUX 9.x:          /dev/tty00, /dev/tty01
HPUX 10.x:       /dev/tty0p0, /dev/tty1p0
SunOS & Solaris: /dev/ttya, /dev/ttyb
AIX:            /dev/tty0, /dev/tty1 (requires setting up)

```

6. Check that the device files for your operating system exist. If they do not, you will have to either find to which files the devices are mapped, or create new device files.

For HPUX 10.x users to create device files, use the command: `inst -e`

7. Check each of the device files suitable to your operating system, until you find one that works.

The following instructions assume that `/dev/ttya` is being checked.

- From a shell prompt type: `yes > /dev/ttya`
This command sends an infinite stream of the letter `y` to `/dev/ttya`
- Open another shell, and at the prompt type: `tail -f < /dev/ttya`
This command reads the incoming data from `/dev/ttya`.

If this command fails, it may be because you do not have read permission to this file. Correct this before continuing.

- Short pins 2 and 3 on your 9 or 25 pin serial port for a few seconds.

The pins of your serial port are usually numbered (in tiny numbers), you may need a flashlight.

If your serial port is male (DTE), the rounded bottom of a paperclip may be used to connect the pins. If your serial port is female (DCE), you can use a short piece of copper telephone wire to connect the pins.

Pin 2 (known as TXD) is used to transmit data from the serial port.

Pin 3 (known as RXD) is used to receive data over the serial port.

At this point, if you have indeed shorted the port that is mapped to `/dev/ttya`, then you will see a column of `y`'s in the shell where you typed `tail -f` [you may get other noise too.]

If you do not get `y`'s in your shell, it is most likely that your serial port is not mapped to `/dev/ttya`.

If you *do* get `y`'s in your shell, but `dongle_info` still fails when the dongle is plugged in, it may be assumed that the fault is in the dongle. Call your support representative and arrange for a replacement.

If you find that your serial port is mapped to a device file other than the device files listed above, create a symbolic link from the device file to `/dev/dongle.fls`