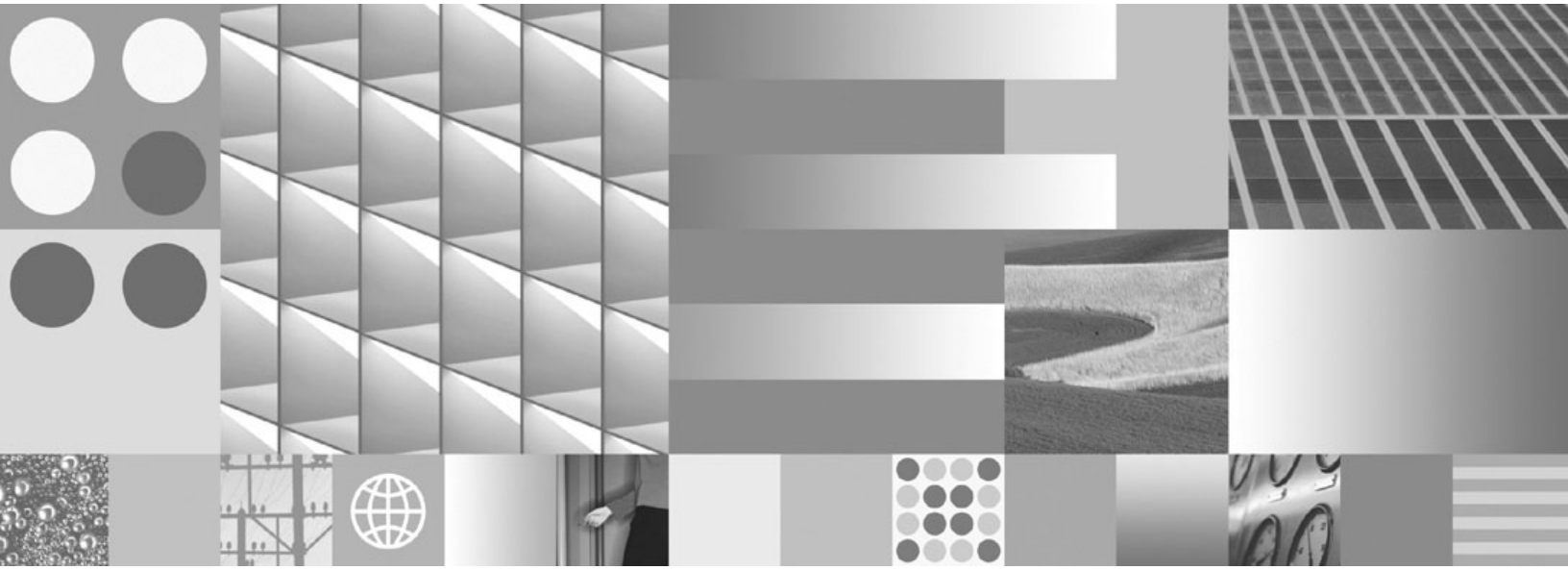
IBM FileNet Image Services Toolkit

4.1.2

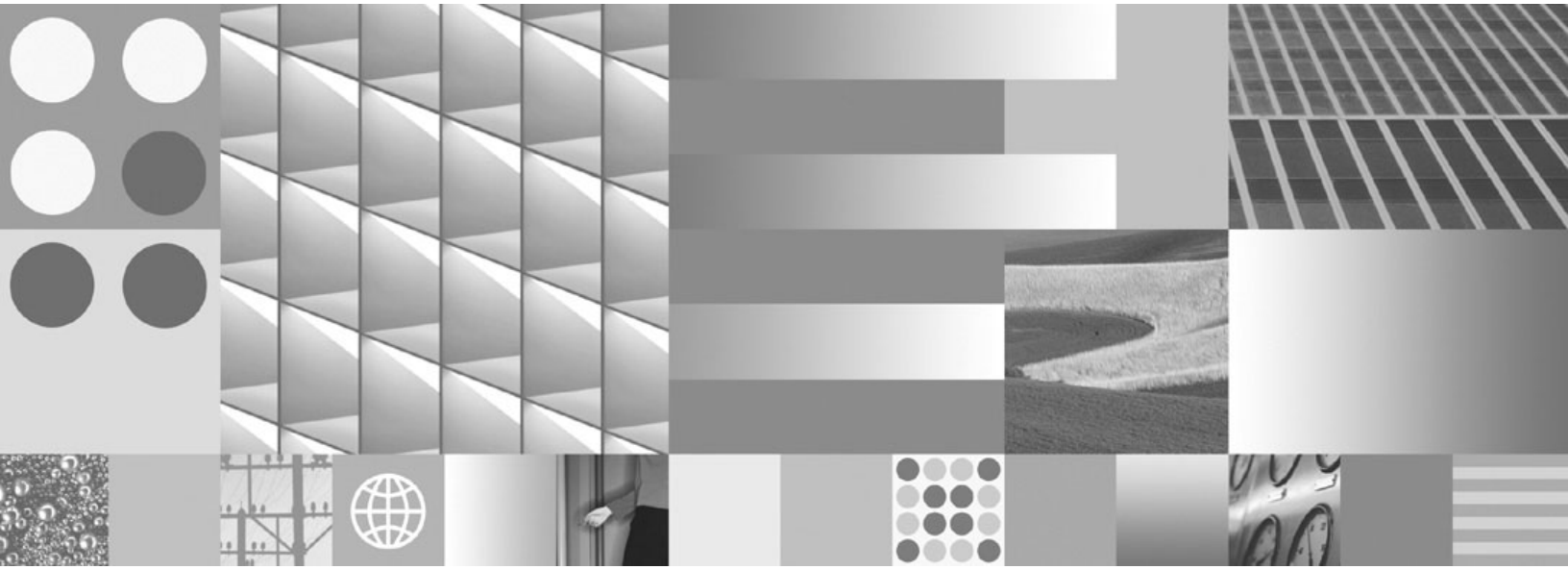


Toolkit Installation and Configuration Procedures

SC19-2697-00

IBM FileNet Image Services Toolkit

4.1.2



Toolkit Installation and Configuration Procedures

SC19-2697-00

Note
Before using this information and the product it supports, read the information in "Notices" on page 92.

This edition applies to version 4.1.2 of IBM FileNet Image Services Toolkit (part number 5724-R95) and to all subsequent releases and modifications until otherwise indicated in new editions.

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1
Getting Started

This document explains how to install and configure IBM® FileNet® Image Services Toolkit 4.1.2 software on AIX, HP-UX, Solaris, and Windows servers. Each Image Services Toolkit release is a full release that can be used for both fresh installations and updates.

You can install this release of the Image Services Toolkit in two ways:

- **ISTK Runtime Edition:** If you plan to run preprogrammed ISTK applications, you can choose this option from the installer. This version contains only the Dynamic Link Library (DLL) files and the binary executables.
- **ISTK Developer's Edition:** If you want to write your own ISTK applications, you can choose to install this version, which contains everything in the Runtime Edition, plus additional documentation, programming header/include files, and samples.

Image Services Toolkit supports two modes of installation, **Graphical Installation** mode and **Silent Installation** mode. Silent Installation mode installs the **ISTK** software with no display or operator intervention. See **“Silent installation mode” on page 29** for some additional considerations.

Product compatibility

To enable you to update multiple Image Services and Image Services Toolkit servers over a wider period of time, ISTK is designed to be compatible with the previous IS release and the next IS release, as well as the current IS release.

Contents of this Release

This Image Services Toolkit release contains:

- A binary executable installer for each platform.
- A documentation directory containing:

- The *Image Services Toolkit (ISTK) Developer Reference Manual* (ISTKref.pdf).

- Manifest files that list all files contained in this ISTK release, one manifest for each platform. The manifest files list checksum information for each file included in this release.

  istk_4.1.2_aix_manifest.wri

  istk_4.1.2_hp_manifest.wri

  istk_4.1.2_hpintegrity_manifest.wri

  istk_4.1.2_sun_manifest.wri

  istk_4.1.2_win_manifest.wri

Important If you currently have Image Services Toolkit installed, make a full backup of IS Toolkit software and data before you install this release of ISTK. ISTK does not support returning to the previous version of software by removing a later version. If you want to return to an earlier version of ISTK, you must restore the system from backup media.

The installer copies the modules in this release on top of the existing modules on your server, and **automatically copies all the existing modules to a backup directory**. See the section, **“Installation log files” on page 75** for more details.

Document revision history

Version	Date	Comment
ISTK 4.1.2	Nov. 2008	Initial release.

Conventions used in this manual

The following paragraphs discuss the ways in which we call your attention to information throughout this document.

Typing Instructions

To indicate commands, values, or other information you enter at your keyboard, we use the following indentation and typeface:

help [CSM_exim]

Screen Displays

Windows and screen examples shown in the procedures in this document are from Windows servers. These windows and screens could look different on UNIX servers.

Console Displays

Information you see displayed at your console is shown in this document in the following manner:

```
Surface '3176' : 1 document processed
Local doc_id = '2235007' Original doc_id = '2235007'
Original ssn = '8502'
Primary copy. No tranlog copy exists.
* document successfully deleted from databases. *
* Purging pages from disk... *
* This document has been successfully purged. *
```

Observe Cautions, Important Notes, Notes, and Tips

Important information and warnings appear in cautions, important notes, notes, and tips. Read these items carefully:

CAUTION Signals possible damaging consequences of an action, such as loss of data or time.

Important	Gives added emphasis to notes that contain particularly vital information that must not be skipped over. While all the information in each section is important, these notes are especially important.
Note	Draws your attention to essential information you should read.
Tip	Introduces an idea that might make your work easier.

Command Syntax

Command syntax definitions are indented:

ddexim –e > <filename>

Optional Parameters

Optional parameters and keywords are within square brackets:

ddexim [–e] > <filename>

Required Parameters

Parameters that require you to provide information are shown within angle brackets (< >).

For example, for the following command:

ddexim –e > <filename>

you must substitute the name of a command for the parameter in angle brackets, such as:

ddexim –e > myfile

Accessing IBM FileNet documentation

To access documentation for IBM FileNet products:

1. Navigate to the Information Management support page (**www.ibm.com/software/data/support**).

2 Select the appropriate IBM FileNet product from the “Select a category” list.

3 On the Product Support page, click **Documentation** and then click **Product Documentation**.

4 On the Product Documentation page, locate the document you need, then click the icon in the appropriate release column to access the document.

Feedback

Documentation feedback

Send comments on this publication or other IBM FileNet P8 Platform documentation by e-mail to **comments@us.ibm.com**. Be sure to include the name of the product, the version number of the product, and the name and part number of the book (if applicable). If you are commenting on specific text, include the location of the text (for example, a help topic title, a chapter and section title, a table number, or a page number).

Product consumability feedback

Help us identify product enhancements by taking a **Consumability Survey**. The results of this comprehensive survey are used by product development teams when planning future releases. Although we are especially interested in survey responses regarding the most recent product releases, we welcome your feedback on any of our products.

The survey takes approximately 30 minutes to complete and must be completed in a single session; there is no option to save a partially completed response.

2

System Administrator Tasks

The following sections describe preliminary steps you must take before you install this release:

- **“Check the operating system and ANSI C compiler requirements” on page 22**
- **“Check available disk space for this release” on page 24**
- **“Extracting or expanding the release files” on page 26**
- **“Silent installation mode” on page 29**
- **“Check the DISPLAY variable on UNIX servers” on page 30**
- **“Back up the server” on page 30**
- **“Stop the Image Services Toolkit applications” on page 31**

Check the operating system and ANSI C compiler requirements

Image Services Toolkit 4.1.2 is supported on these operating systems:

Operating System	Operating System Versions	ANSI C Compiler (Required for Developer's Edition Only)
AIX	AIX 5.3 and AIX 6.1	3.6.4, 3.6.6, 4.x, 5.0, VisualAge 6.0
HP-UX (HP 9000)	HP-UX 11i v2 (11.23 or higher) HP-UX 11i v3 (11.31 or higher)	B.11.23 B.11.31
HP-UX (HP Integrity)	HP-UX 11i v2 (11.23 or higher) HP-UX 11i v3 (11.31 or higher)	B.11.23 B.11.31

Operating System	Operating System Versions	ANSI C Compiler (Required for Developer's Edition Only)
Solaris	Solaris 9 Solaris 10	SPARCworks 4.2, 5.0 Sun ONE Studio Forte 6.0
Windows	Windows 2000 Windows 2003 Windows 2008 Windows XP Windows Vista	Microsoft Visual C++ version 7.1 Microsoft Visual Studio.NET

The ANSI C compiler is required with the Developer's Edition because the ISTK client libraries use a library that is packaged with the compiler. The ANSI C compiler is not required with the Runtime Edition.

All the ISTK sample programs are compiled and tested using these C compiler versions. Other versions of the compilers are not supported. If you run into compiler or link problems using the **makefile** provided (**makefile.nt** on Windows), see the documentation for your compiler.

Note All ISTK binaries are compiled as 32-bit modules. All 32-bit applications will run on 64-bit platforms. However, support for compiling 64-bit ISTK applications is not offered. Always compile your custom applications using 32-bit compilers or disable the 64-bit option on your compiler.

Check available disk space for this release

Verify that enough free disk space is available for both the IS Toolkit installation modules and the installer itself. The following table shows the approximate amount of disk space needed for each system.

Operating System	Directory	Required Disk Space (Developer Version)	Required Disk Space (Runtime Version)
AIX	/fnsw	20 MB	15 MB
HP-UX (HP 9000)	/fnsw	25 MB	20 MB
HP-UX (HP Integrity)	/fnsw	25 MB	20 MB

Operating System	Directory	Required Disk Space (Developer Version)	Required Disk Space (Runtime Version)
Solaris	/fnsw	50 MB	40 MB
Windows	\fnsw	25 MB	20 MB

The installer also needs a certain amount of temporary disk space for decompressing files. Check the following table for the amount of additional temporary space you'll need on your servers and for the directory where the installer intends to place the temporary files.

Operating System	Default Directory	Required Temporary Space
AIX	/tmp	90 MB
HP-UX (HP 9000)	/var/tmp	260 Mb
HP-UX (HP Integrity)	/var/tmp	260 MB
Solaris	/var/tmp	90 MB
Windows	temp *	60 MB

*** Note:** On Windows systems, the installer determines the temporary file path in the following order:

– The path specified by the **TMP** environment variable.

– If TMP is not defined, the path specified by the **TEMP** environment variable.

– If both TMP and TEMP are not defined, the **Windows** directory.

However, the installer does not verify that the directory specified by the TMP or TEMP environment variables exists.

Extracting or expanding the release files

Individual files in this release are compressed into a single tar file (for each UNIX platform) and a single zip file (for the Windows Server platform). Complete the following steps to download and untar the istk_ 4.1.2.tar file or unzip the istk_4.1.2.exe file:

1. Make sure you have at least 500 MB of free space in the directory where you plan to download the tar or zip file.

2. Make sure you have at least 500 MB of free space in the directory that will contain the untarred/unzipped version of the release.

3. Download the file to your system. After you have finished the download, check to see that the size of the file is the same as the one on the downloads site.

4. Complete this step by following the instructions below appropriate to your platform:

UNIX

- On UNIX systems, extract the downloaded file by entering:

  tar -xvf istk_4.1.2.tar

  This command extracts the tar file in the current directory. In locales that use multi-byte character sets, the installer must be run from a directory path whose name consists of ASCII characters, such as /tmp or /fnsw/local/tmp. To extract the tar file to a different directory, change to that directory and then enter:

tar -xvf /<location>/istk_4.1.2.tar

where <location> is the directory path where the tar file is located.

WIN

- On Windows systems, expand the file by double-clicking the **istk_4.1.2.exe** file. The WinZip Self-extractor window displays. The Unzip to folder dropdown contains the default WinZip location where the system will expand the file. If this location is not correct, change it to the appropriate directory.

Note In locales that use multi-byte character sets, the installer must be run from a directory path whose name consists of ASCII characters, such as C:\temp or C:\fnsw_loc\tmp.

After you have successfully installed the release on all of your Image Services servers, you can remove the tar or zip file and the extracted or uncompressed software file from your system.

Silent installation mode

Before using **Silent Installation** mode, make sure there is enough free space in the default temporary directory as described previously. The amount of free disk space **must** be verified either manually or through an automated script. Lack of sufficient disk space will prevent the Installer from starting successfully, and since no feedback is displayed on the screen, the only way to verify successful installation is to check the main **install_ISTK_Runtime_log.txt** file. The absence of this log file also indicates a failed installation.

Download the Help Viewer (Windows Vista only)

When you install ISTK on a Microsoft Windows Vista server, you must also download the WinHlp32.exe file from the Microsoft Download Center. This file is needed to view 32-bit .hlp files. WinHlp32.exe was included in previous versions of Windows, but it was not included in the Windows Vista release.

To download WinHlp32.exe, visit the following Microsoft Web site:

http://support.microsoft.com/kb/917607

Check the DISPLAY variable on UNIX servers

On UNIX servers, make sure the **DISPLAY** environment variable has been set correctly. If you used the **su** command to log on as **root** user, the DISPLAY variable might not be correct.

For more information on setting the DISPLAY variable, see **"Appendix B – Troubleshooting" on page 84**.

Back up the server

If an earlier release of the Image Services Toolkit is already installed on this server, perform a full backup of IS Toolkit software and data. See your *Image Services System Administrator's Companion* for information on performing a complete system backup.

Important ISTK does not support returning to the previous version of software by removing a higher version. If you want to return to an earlier version of ISTK, you must restore the system from backup media.

Stop the Image Services Toolkit applications

If an earlier release of the Image Services Toolkit is already installed on this server, verify that all ISTK-based applications are shut down before installing this release.

On UNIX servers only, enter:

/fnsw/client/bin/wal_purge

Also, verify that no **vl** (view log) processes are running. On UNIX and Windows servers, enter:

ps -elf | grep vl

Kill any remaining **vl** processes:

kill -9 <processID>

3

Installing the ISTK Software

The procedure for installing Image Services Toolkit is virtually the same on all platforms. Follow the steps in this chapter to run the installer on your server.

Note If you are installing ISTK on an Image Services system in a Dual server or Multi-server environment, be sure to install the ISTK on the Root server.

- If you have questions about this installation, see **“Appendix A – Frequently Asked Questions (FAQs)” on page 78**.
- If you run into problems during the installation, see **“Appendix B – Troubleshooting” on page 84**.

1. Log on with **root** privileges (on UNIX servers) or **Administrator** privileges (on Windows servers).

2. If you are installing ISTK from CD-ROM media, insert the ISTK CD in the CD-ROM drive.

   If you're installing ISTK from a directory on your hard drive, and the server has been configured for a locale that uses a multi-byte character set, the ISTK installer must be located in a directory whose path name consists of ASCII characters, such as /tmp or /fnsw/local/tmp on UNIX servers, or C:\temp or C:\fnsw_loc\tmp on Windows servers.

3. **For Silent Installs only**, locate the appropriate option file in the release software, either **istk_unix_option.txt** or **istk_win_option.txt**. The option files contain the standard responses to the installer's prompts. View the options and their default values, which are fully described in the files, and if you decide to modify any of the defaults for your ISTK installation, copy the file to a local directory on your server. (If you choose, you can rename it to something shorter, like **opt.txt**.) Use your preferred text editor to make the appropriate changes and save the file.

Start the installer

Start the installer by following the steps in the appropriate subsection:

- **“UNIX servers” on page 34**
- **“Windows servers” on page 36**

UNIX servers

1. Verify that the DISPLAY environment variable is set correctly.
2. If necessary, mount the CD-ROM device to your mount point, such as /cdrom.
3. Verify that the file is executable by adding execute permission with the following command:

   chmod +x <filename>.bin

4. Change to the directory where you copied the ISTK executable file, and enter the file name. (Note that the file name ends in **.bin**.) For example, to install this ISTK release on an AIX server you would enter:

- Graphical mode – standard, graphical interface:

  ./istk_4.1.2_aix.bin

- Console mode – plain text interface:

  ./istk_4.1.2_aix.bin -console

- Silent mode – no screen display whatsoever:

  ./istk_4.1.2_aix.bin -options /tmp/opt.txt -silent

  where **/tmp/opt.txt** is the location of the text file you copied from the CD-ROM and modified. Specify its full path on the command line. For example:

  ... -options /fnsw/local/tmp/opt.txt

Note The installer does not allow spaces in path names on UNIX servers.

On UNIX servers, adding **-is:tempdir <directory>** to the command line overrides the default temporary directory as long as the <directory> you specify already exists. This optional temporary directory

must be outside the /fnsw directory structure. For example, to install ISTK 4.1.2 on an HP-UX server, you would enter:

istk_4.1.2_hp.bin -is:tempdir /othertmp

Where /othertmp is the specific temporary directory you chose.

5 Skip to the section, **“Running the installer” on page 38**.

Windows servers

- Graphical mode – standard, graphical interface:

  Open the Windows Explorer and locate the service pack software, either on the CD-ROM media or in the directory where you downloaded and expanded the service pack.

  Double-click **istk_4.1.2_win.exe**.

- Console mode – plain text interface:

  Not available on Windows servers.

- Silent mode – no screen display whatsoever:

  Open a command prompt window, and enter:

  <PATH>\istk_4.1.2_win.exe -silent

  where: <PATH>; is the appropriate drive letter of the CD-ROM drive, or the full directory path location on your hard drive.

  On Windows servers, adding **-is:tempdir <directory>** to the command line overrides the default temporary directory as long as the <directory> you specify already exists. This optional temporary directory must be outside the C:\fnsw and \fnsw_loc directory structures. For example, to install this release of ISTK, you would enter:

  istk_4.1.2_win.exe -is:tempdir C:\othertemp

  Where C:\othertemp is the specific temporary directory you want to use.

Running the installer

Depending on the speed of the processors in your server, expect the installation to take **less than 10 minutes**. (If you're installing the IS Toolkit on several servers simultaneously from the same location, it might take a while longer.)

In Graphical mode, the InstallShield Wizard displays this message:

> Welcome to the Install Wizard for the
> FileNet Image Services Toolkit (version 4.1.2)

Follow the instructions on this and subsequent panels. Click **Next** on each screen to continue.

The InstallShield Wizard asks you whether you want to install the compact Runtime version or the full Developers version of ISTK.

The new modules in the IS Toolkit are always installed in the same location as the current Image Services Toolkit modules.

The default directory for fresh installations of ISTK is:

UNIX /fnsw/client

WIN <drive>:\Program Files\FileNet\FNSW\client

(The default installation directory can be changed on all operating systems except AIX.)

6 When the IS Toolkit installation is finished, you can unmount and remove the CD-ROM.

7 Check the log files to ensure the installation was successful. Pay particular attention to any temporary or development modules that may have been overwritten during the installation. (See the .../4_1_2/misc directory for details.) This step is especially important if you ran the installation in Silent mode.

8 To see the current IS Toolkit version installed on your system, enter the following command:

UNIX **/fnsw/client/bin/fn_rel**

WIN **<IS Toolkit directory>\client\bin\fn_rel**

Configure the ISTK Environment

Note If you are performing a fresh installation of ISTK, continue with **Chapter 4, “Configuring the ISTK Environment,” on page 41**.

If you are updating an earlier version of Image Services Toolkit, the configuration procedures have already been performed. Skip to **Chapter 5, “Completing the Installation,” on page 74**.

4

Configuring the ISTK Environment

For first-time Image Services Toolkit installations, follow the steps in the appropriate subsection below to configure the ISTK environment. You should also consult the “Configuration Notes” section of the *Image Services Toolkit (ISTK) Developer Reference Manual* in the documentation directory on the release media.

- **“AIX Server Configuration” on page 42**
- **“HP-UX Server Configuration (HP 9000 and HP Integrity)” on page 49**
- **“Solaris Server Configuration” on page 57**
- **“Windows Server Configuration” on page 65**

AIX Server Configuration

Set File Ownerships and Permissions

The files /fnsw/client/bin/wal_daemon and /fnsw/client/bin/wal_purge must run as a user with **root** privileges. The permissions should look like **-rwsr-xr-x** and the files should be owned by **root**.

If the permissions are not currently set, enter the following commands:

- If Image Services is installed on this server, run the following command as a user with **root** privileges:

  fn_setup

  Accept the current value at each prompt.

- If Image Services is **not** installed on this server, enter the following commands as a user with **root** privileges:

  chmod 775 /fnsw/client/logs/* /fnsw/client/tmp/*
  chmod 755 /fnsw/client/bin/* /fnsw/client/shobj/*
  cd /fnsw/client/bin

```
chown root wal_daemon wal_purge
chmod 4755 wal_daemon wal_purge
```

Increase the Operating System Kernel Limits

The Image Services Toolkit makes heavy use of various aspects of SystemV Interprocess Communication (IPC) constructs. The three IPC resources are shared memory, semaphores, and message queues.

The minimum values for the various resources are listed below. On AIX systems, the IPC resources default to their maximum values. As a result, the kernel does not need to be tuned to have these values increased. The values used by the ISTK software are listed here for completeness.

Shared Memory:	
Segment size (SHMMAX)	2 GB
Semaphores:	
Semaphore identifiers (SEMMNI)	131072

Message Queues:	
Identifiers (MSGMNI)	131072

Verify/Update the /etc/services File

Add the following entries to the /etc/services file, if they do not already exist:

tms 32768/tcp
cor 32769/tcp
nch 32770/udp

If you are installing ISTK on a server that is already running FileNet Image Services, these entries should already exist.

Verify/Update the /etc/hosts File

The /etc/hosts file should contain the name of any host that runs the FileNet Image Services and which communicates with the ISTK applications.

For proper NCH operation to occur when you install ISTK in a network environment that uses a router with broadcast disabled, add the following to the /etc/hosts file for each target IS system:

<IP addr of domain:organization> <domain-organization>-nch-server

where:

<IP addr of domain:organization> is the IP address of the FileNet domain and organization identifying the target Image Services system.

<domain-organization> is that same domain and organization in lower case and separated with a hyphen '-' character.

For example, if the domain “mydom” and organization “myorg” were at the IP address 123.45.6.78, the entry would look as follows:

123.45.6.78 mydom-myorg-nch-server

If your system uses IPv6 addressing, the entry might look like this:

fe80::fefe:0927:2638 mydom-myorg-nch-server

Set Environment Variables

WAL_ROOT

The WAL_ROOT environment variable identifies the home installation directory of the ISTK software. Since ISTK is always installed in the /fnsw/client directory on AIX servers, **this variable is ignored on AIX servers**.

PATH

Add /fnsw/client/bin to your PATH environment variable. If you are also running the FileNet Image Services software on the same server, make sure you have a separate session for ISTK, because ISTK and IS have conflicting PATH requirements. The PATH requirements for ISTK should never be added to a PATH used by IS, and vice-versa. Doing so will cause either ISTK or IS to stop functioning correctly.

Example: **export PATH=/fnsw/client/bin:.:$PATH**

Note Running ISTK and IS in the same session is not recommended.

Error Log Directory

When any of the ISTK libraries encounters an error, it generates an entry in the system log (sys_log).The sys_log messages generated from the ISTK libraries are sent to the standard error output device, **stderr**, which is usually the monitor screen, and also to a file. By default, this file is named /fnsw/client/logs/walYYYYMMDD.The location, but not the name, of this file can be changed by setting the environment variable WAL_LOG_DIR to specify a different directory.

Output to **stderr** can be turned off by creating the file fnsw/client/tmp/nocons. If this file exists, sys_log entries will ONLY be written to the **walYYYYMMDD** file.

Note The ISTK System Administrator is responsible managing the file system where the ISTK log files are located. Over time, the number of files can grow quite large, so the System Administrator should regularly back up the files and remove them from the corresponding directory.

Compiling and Running ISTK Sample Applications

For compiling:

- Add /fnsw/client/include to the include path and /fnsw/client/shobj to the link path. For linking you will need export files, which are in the /fnsw/client/shobj directory.

For running:

- Add /fnsw/client/bin and /fnsw/client/shobj to your PATH environment variable.

At this point the configuration steps are finished, and you can skip to the section, **“Restart ISTK Applications” on page 74** in the next chapter.

HP-UX Server Configuration (HP 9000 and HP Integrity)

Set File Ownerships and Permissions

The files /fnsw/client/bin/wal_daemon and /fnsw/client/bin/wal_purge must run as a user with **root** privileges. The permissions should look like **-rwsr-xr-x** and the files should be owned by **root**.

If the permissions are not currently set, enter the following commands:

- If Image Services is installed on this server, run the following command as a user with **root** privileges:

  fn_setup

  Accept the current value at each prompt.

- If Image Services is **not** installed on this server, enter the following commands:

  chmod 775 /fnsw/client/logs/* /fnsw/client/tmp/*
  chmod 755 /fnsw/client/bin/* /fnsw/client/shobj/*
  cd /fnsw/client/bin

chown root wal_daemon wal_purge
chmod 4755 wal_daemon wal_purge

Increase the Operating System Kernel Limits

The Image Services Toolkit makes use of various aspects of SystemV Interprocess Communication (IPC) constructs. The three IPC resources are shared memory, semaphores, and message queues.

Use the HP-UX System Administration Manager program **SAM** to list and modify the current values for these resources. Please refer to the system documentation for the details on tuning the kernel parameters.

The minimum values for the various resources are listed below. Make sure the values for these resources on your server are equal to or greater than these values. On HP-UX systems, the only item that typically needs to be increased is the maximum number of message queue identifiers. This value defaults to 50 and should be increased to 2000.

Shared Memory:	
Segment size (SHMMAX)	16 GB
Semaphores:	
Semaphore identifiers (SEMMNS)	500
Semaphore identifiers (SEMMNI)	500
Message Queues:	
Identifiers (MSGMNI)	2048

Verify/Update the /etc/services File

Add the following entries to the /etc/services file, if they don't already exist:

tms 32768/tcp
cor 32769/tcp
nch 32770/udp

If you are installing or upgrading ISTK on a system already running the FileNet IS, these entries should already exist.

Verify/Update the /etc/hosts File

The /etc/hosts file should contain the name of any host that runs the FileNet IS and which communicates with the ISTK applications.

For proper NCH operation to occur when you install/upgrade ISTK in a network environment which uses a router with broadcast disabled, add the following to the /etc/hosts file for each target IS:

<IP addr of domain:organization> <domain-organization>-nch-server

where:

<IP addr of domain:organization> is the IP address of the FileNet domain and organization identifying the target Image Services system.

<domain-organization> is that same domain and organization in lower case and separated with a hyphen '-' character.

For example, if the domain “mydom” and organization “myorg” were at the IP address 123.45.6.78, the entry would look as follows:

123.45.6.78 mydom-myorg-nch-server

If your system uses IPv6 addressing, the entry might look like this:

fe80::fefe:0927:2638 mydom-myorg-nch-server

Set Environment Variables

WAL_ROOT

The WAL_ROOT environment variable identifies the home installation directory of the ISTK software. To set this variable, enter the following in each ISTK user's .profile file:

Example: **export WAL_ROOT=/fnsw/client**

The default ISTK installation directory is **/fnsw/client**. Be sure to specify the correct directory if you installed the ISTK software in a different location.

PATH

Add /fnsw/client/bin to your PATH environment variable. If you are also running the FileNet Image Services software on the same server, make sure you have a separate session for ISTK because ISTK and IS have conflicting PATH requirements. The PATH requirements for ISTK should never be added to a PATH used by IS, and vice-versa. Doing so will cause either ISTK or IS to stop functioning properly.

Add environment variable SHLIB_PATH=/fnsw/client/shobj

Example: **export PATH=/fnsw/client/bin:.:$PATH**
export SHLIB_PATH=/fnsw/client/shobj

Note Running ISTK and IS in the same session is not recommended.

Error Log Directory

When any of the ISTK libraries encounters an error, it generates an entry in the system log (sys_log). The sys_log messages generated from the ISTK libraries are sent to the standard error output device, **stderr**, which is usually the monitor screen, and also to a file. By default, this file is named fnsw/client/logs/walYYYYMMDD. The location, but not the name, of this file can be changed by setting the environment variable WAL_LOG_DIR to specify a different directory.

Output to **stderr** can be turned off by creating the file fnsw/client/tmp/nocons. If this file exists, sys_log entries will ONLY be written to the **walYYYYMMDD** file.

Note The ISTK System Administrator is responsible managing the file system where the ISTK log files are located. Over time the number of files can grow quite large, so the System Administrator should regularly back up the files and remove them from the corresponding directory.

Compiling and Running ISTK Sample Applications

For compiling:

- Add /fnsw/client/include to include path and /fnsw/client/shobj to the link path.
- For the aCC compiler, use the '-Ae' option to compile ISTK sample programs on HP-UX11i.

For running:

- Add /fnsw/client/bin to your PATH environment variable and set environment variable SHLIB_PATH to /fnsw/client/shobj

At this point, the configuration steps are finished, and you can skip to the section, **“Restart ISTK Applications” on page 74** in the next chapter.

Solaris Server Configuration

Set File Ownerships and Permissions

The files /fnsw/client/bin/wal_daemon and /fnsw/client/bin/wal_purge must run as a user with **root** privileges. The permissions should look like **-rwsr-xr-x** and the files should be owned by **root**.

If the permissions are not currently set, enter the following commands:

- If Image Services is installed on this server, run the following command as a user with **root** privileges:

  fn_setup

  Accept the current value at each prompt.

- If Image Services is **not** installed on this server, enter the following commands:

  chmod 775 /fnsw/client/logs/* /fnsw/client/tmp/*
  chmod 755 /fnsw/client/bin/* /fnsw/client/shobj/*
  cd /fnsw/client/bin

chown root wal_daemon wal_purge
chmod 4755 wal_daemon wal_purge

Increase the Operating System Kernel Limits

The Image Services Toolkit makes use of various aspects of SystemV Interprocess Communication (IPC) constructs. The three IPC resources used are shared memory, semaphores, and message queues.

On Solaris systems, the program **sysdef** can be used to get the current values for these parameters.If changes are necessary, the /etc/system file should be updated with the appropriate values and the system should be rebooted. See the Solaris operating system documentation before making updates to the /etc/system file.

The minimum values for the various resources are listed below.On Solaris systems, the operating system does not allow a shared memory segment to be configured above 16 MB. As a result, the segment size is 16 MB, and the variable associated with the number of segments per process should be set to a significant value (15 to 20).

Use the **sysdef** program to display the current values for these parameters. If changes are necessary, update the /etc/system file with the appropriate values and reboot the server.

Shared Memory:	
Maximum segment size (SHMMAX)	16 GB
Segments per process (SHMSEG)	15 to 20
Semaphores:	
Semaphore identifiers (SEMMNI)	500
Semaphores in system (SEMMNS)	500
Max semaphores per id (SEMMSL)	512
Message Queues:	
Identifiers (MSGMNI)	2048

Verify/Update the /etc/services File

Add the following entries to the /etc/services file, if they do not already exist:

```
tms     32768/tcp
cor     32769/tcp
nch     32770/udp
```

If you are installing or upgrading ISTK on a system that is already running the FileNet IS, these entries should already exist.

Verify/Update the /etc/hosts File

The /etc/hosts file should contain the name of any host that runs the FileNet IS and which communicates with the ISTK applications.

For proper NCH operation to occur when you install/upgrade ISTK in a network environment that uses a router with broadcast disabled, add the following to the /etc/hosts file for each target IS:

<IP addr of domain:organization> <domain-organization>-nch-server

where:

<IP addr of domain:organization> is the IP address of the FileNet domain and organization identifying the target Image Services system.

<domain-organization> is that same domain and organization in lower case and separated with a hyphen '-' character.

For example, if the domain “mydom” and organization “Myorg” were at the IP address 123.45.6.78, the entry would look as follows:

123.45.6.78 mydom-myorg-nch-server

If your system uses IPv6 addressing, the entry might look like this:

fe80::fefe:0927:2638 mydom-myorg-nch-server

Environment Variables

WAL_ROOT

The WAL_ROOT environment variable identifies the home installation directory of the ISTK software. To set this variable, enter the following in each ISTK user's .profile file:

Example: **export WAL_ROOT=/fnsw/client**

The default ISTK installation directory is **/fnsw/client**. Be sure to specify the correct directory if you installed the ISTK software in a different location.

PATH

Add /fnsw/client/bin to your PATH environment variable. If you are also running the FileNet IS software on the same server, make sure you have a separate session for ISTK because ISTK and IS have conflicting PATH requirements. The PATH requirements for ISTK should never be added to a PATH used by IS, and vice-versa. Doing so will cause either ISTK or IS to stop functioning properly.

Add environment variable LD_LIBRARY_PATH=/fnsw/client/shobj

Example: **export PATH=/fnsw/client/bin:.:$PATH**
export LD_LIBRARY_PATH=/fnsw/client/shobj

Note Running ISTK and IS in the same session is not recommended.

Error Log Directory

When any of the ISTK libraries encounters an error, it generates an entry in the system log (sys_log). The sys_log messages generated from the ISTK libraries are sent to the standard error output device, **stderr**, which is usually the monitor screen, and also to a file. By default, this file is named fnsw/client/logs/walYYYYMMDD. The location, but not the name, of this file can be changed by setting the environment variable WAL_LOG_DIR to specify a different directory.

Output to **stderr** can be turned off by creating the file fnsw/client/tmp/nocons. If this file exists, sys_log entries will ONLY be written to the **walYYYYMMDD** file.

Note The ISTK System Administrator is responsible managing the file system where the ISTK log files are located. Over time the number of files can grow quite large, so the System Administrator should regularly back up the files and/or remove them from the corresponding directory.

Compiling and Running ISTK Sample Applications

For compiling:

- Add /fnsw/client/include to include path and /fnsw/client/shobj to the link path.

For running:

- Add /fnsw/client/bin to your PATH environment variable and set environment variable LD_LIBRARY_PATH to /fnsw/client/shobj.

At this point, the configuration steps are finished, and you can skip to the section, **“Restart ISTK Applications” on page 74** in the next chapter.

Windows Server Configuration

Verify/Update the TCP/IP Registry Parameters

In this section you'll verify the maximum number of available temporary ports and the length of time the server waits before reusing a closed socket ID. If either of these parameters do not yet exist, this section provides steps to define them.

Note These modifications have been found to be favorable for best FileNet performance. Unless you have set these parameters differently for other system reasons, we recommend you use these parameter settings.

- The **MaxUserPort** parameter determines the number of temporary ports that can be assigned on the server. These temporary ports are assigned by a server's IP stack from a designated range of ports for this purpose. When network traffic is extremely heavy, it's possible to run out of temporary ports unless you increase the MaxUserPort setting.

- The **TcpTimedWaitDelay** parameter determines the length of time the server waits before reusing a closed socket ID. Although the default value is typically around 240 seconds (four minutes), this parameter can safely be reduced to as little as 30 seconds on high-speed networks.

1 From a Command Prompt window, enter the following command to open the Registry editor:

REGEDT32

Tip You can also enter the above command in the taskbar Run dialog box.

2 In the HKEY_Local_Machine on Local Machine window, open the **System** folder and navigate to the **Tcpip Parameters** folder using this path:

SYSTEM > CurrentControlSet > Services > Tcpip > Parameters

3 Locate the **MaxUserPort** parameter.

- If this parameter is already set to 65534 (decimal) or FFFE (hex), skip to **Step 4 on page 68**.
- If this parameter is less than 65534 (decimal) or FFFE (hex), you need to increase it.

  a Double-click on the entry to open the DWORD Editor dialog box.

  b In the DWORD Editor dialog box, set the Radix to decimal or hex, and change the value to 65534 (decimal) or FFFE (hex).

  c Click **OK**, and skip to **Step 4 on page 68**.

- If this parameter does not exist, you need to define it.

  a From the Registry Editor Edit menu, select **Add Value**.

  The Add Value dialog box opens.

  b Enter **MaxUserPort** in the Value Name box, and select REG_DWORD from the Data Type box drop-down list; then click **OK**.

  The DWORD Editor dialog box opens.

c Set the Radix to decimal or hex, enter 65534 (decimal) or FFFE (hex) in the Data box, and click **OK**.

The Registry Editor now shows the new MaxUserPort entry in hex.

4 Locate the **TcpTimedWaitDelay** parameter.

- If this parameter is already set to 30 seconds (decimal) or 1E (hex), skip to **Step 5 on page 69**.
- If this parameter is more than 30 seconds (decimal) or 1E (hex), you need to reduce it.

  a Double-click on the entry to open the DWORD Editor dialog box.

  b In the DWORD Editor dialog box, set the Radix to decimal or hex, and change the value to 30 (decimal) or 1E (hex).

  c Click **OK**, and skip to **Step 5 on page 69**.

- If this parameter does not exist, you need to define it.

a From the Registry Editor Edit menu, select **Add Value**.

The Add Value dialog box opens.

b Enter **TcpTimedWaitDelay** in the Value Name box, and select REG_DWORD from the Data Type box drop-down list; then click **OK**.

The DWORD Editor dialog box opens.

c Set the Radix to decimal or hex, enter 30 (decimal) or 1E (hex) in the Data box, and click **OK**.

The Registry Editor now shows the new TcpTimedWaitDelay entry in hex.

5 Close the Registry Editor window. The new registry values will take effect the next time you restart the server.

Note The **WAL_ROOT** registry parameter identifies the home installation directory of the ISTK software. The InstallShield Installation Wizard

automatically sets the **WAL_ROOT** registry parameter to the correct value during the installation process. **This parameter does not need to be set manually on Windows servers.**

Verify/Update the hosts File

The “hosts” file should contain the name of any host that runs the FileNet Image Services software and which communicates with the ISTK applications.

For proper ISTK operation to occur when you install/upgrade ISTK in a network environment which uses a router with broadcast disabled, add the following information for each target Image Services domain to the **<drive>:\WINDOWS\system32\drivers\etc\hosts** file:

<IP addr of domain:organization> <domain-organization>-nch-server

where:

<IP addr of domain:organization> is the IP address of the FileNet domain and organization identifying the target Image Services system.

<domain-organization> is that same domain and organization in lower case and separated with a hyphen '-' character.

For example, if the domain “mydom” and organization “myorg” were at the IP address 123.45.6.78 the entry would look as follows:

123.45.6.78 mydom-myorg-nch-server

If your system uses IPv6 addressing, the entry might look like this:

fe80::fefe:0927:2638 mydom-myorg-nch-server

Error Log Directory

When any of the ISTK libraries encounters an error, it generates an entry in the system log (sys_log). The sys_log messages generated from the ISTK libraries are sent to the standard error output device, **stderr**, which is usually the monitor screen, and also to a file. By default, this file is named:

<IS Toolkit directory>\client\logs\walYYYYMMDD

The location, but not the name, of this file can be changed by setting the environment variable WAL_LOG_DIR to specify a different directory.

Output to **stderr** can be turned off by creating the file <IS Toolkit directory>\client\tmp\nocons. If this file exists, sys_log entries will ONLY be written to the **walYYYYMMDD** file.

Note The ISTK System Administrator is responsible managing the file system where the ISTK log files are located. Over time the number of files can grow quite large, so the System Administrator should regularly back up the files and/or remove them from the corresponding directory.

Compiling and Running ISTK Sample Applications

For compiling:

- Add <IS Toolkit directory>\client\include to include path and <IS Toolkit directory>\client\shobj to library path. This can be done inside VC++ 7.1.

For running:

- Add <IS Toolkit directory>\client\shobj to your PATH environment variable.

At this point, the configuration steps are finished, and you can continue with the section, **“Restart ISTK Applications” on page 74** in the next chapter.

5
Completing the Installation

Restart ISTK Applications

Important If you change your system network addressing from the familiar decimal IPv4 standard to the hexadecimal IPv6 standard, you must recompile all your ISTK applications.

After the IS Toolkit software is successfully installed and configured, you can restart the Image Services Toolkit-based applications.

To verify the current ISTK version installed on your system, enter the following:

UNIX **/fnsw/client/bin/fn_rel**

WIN **<IS Toolkit directory>\client\bin\fn_rel**

Important **Back up the Image Services Toolkit software and data** as soon as possible after the Service Pack installation. This will ensure that you can restore the system to the current release level, if necessary.

Installation log files

Several log files are created during the IS Toolkit installation. If the installation was not successful, you can check these log files to help determine the cause of the problem.

UNIX

- On UNIX servers, the log files are stored in these directories:

  /fnsw/client/logs/install/4_1_2/

  /fnsw/client/logs/install/4_1_2/old/

  (Use the **more** or **less** commands to view the logs files on UNIX servers.)

WIN

- On Windows servers, the log files are stored in these directories:

  <IS Toolkit directory>\logs\install\4_1_2\

  <IS Toolkit directory>\logs\install\4_1_2\old\

Use WordPad in landscape mode to view the log files on Windows servers. NotePad does not format the files for easy reading.

The **.../4_1_2/** directory contains the file **install_ISTK_Runtime_log.txt**, which contains a record of all the processing steps taken during the Image Services Toolkit installation, whether they were successful or unsuccessful. If you're updating an older version of ISTK, this file also contains a list of all the Image Services Toolkit modules that were replaced. Each time you run the installer, new information is appended to the **end** of the file.

The **.../4_1_2/old/** directory contains log files from previous installs and uninstalls, if applicable.

Begin Production Mode

This concludes the Image Services Toolkit 4.1.2 Installation and Configuration Procedures. You are ready to put your ISTK system into production, develop custom ISTK applications, or install the Image Services Remote Admin Console (RAC).

Appendix A – Frequently Asked Questions (FAQs)

The information in this appendix provides answers to many of your questions about Image Services Toolkit.

Q. **What does Image Services Toolkit contain?**

A. ISTK contains a binary executable installer for each platform, the installation instructions and a manifest file for each platform. If any user documentation has been modified for this release, it's located in a separate directory.

Q. **How is the Image Services Toolkit distributed?**

A. ISTK is available for download from the Information Management Support page at **www.ibm.com/software/data/support**.

Q. **Can I go back to an earlier version of the Image Services Toolkit?**

A. If you need to go back to a previous version of Image Services Toolkit, you must restore the earlier software from your backups.

Q. **Do I need DirectX on my Windows Server system?**

A. No, DirectX is not required. DirectX is installed by default on most Windows servers as part of their initial configuration, but display issues with Java and DirectX have resulted in InstallShield modifying the MultiPlatform installer so it no longer uses DirectX.

For more information about:

- InstallShield MultiPlatform, see **www.installshield.com/imp/**.
- Microsoft DirectX, see **www.microsoft.com/windows/directx**.
- Microsoft Windows Server, see **www.microsoft.com/windowsserversystem**.

Q. How can I tell that a Silent Installation is actually running?

A. By design, Silent Installations do not display any messages back to the screen. This makes monitoring the installation essential. The primary error log is found in the /fnsw/client/logs/install/4.1.2/ directory (the <IS Toolkit directory>\logs\install\4.1.2\ directory on Windows servers). On UNIX servers, the command **tail -f istk_4.1.2.log** dynamically displays the installation log as it is created.

Q. I tried to run a Silent Installation, but nothing happened. The system prompt immediately reappeared and no error messages were logged. What went wrong?

A. There might not be enough temporary disk space for InstallShield to install the Service Pack. One of the first things InstallShield does is check the amount of free disk space it has to work with. If there's not enough space, InstallShield just quits without logging an error. Make sure you have enough free disk space in the appropriate temporary directory for your platform as described in the section, **"Check available disk space for this release" on page 24**

You can also use the **-is:tempdir <directory>** option to specify a different directory if there's not enough free space in the default temporary directory.

Q. How do I know when a Silent Installation is finished?

A. By design, Silent Installations do not display any messages back to the screen, not even when the installation has completed. You need to monitor in installation logs in order to determine that an installation has successfully completed. Do not assume that an installation has successfully completed until you have verified the installation log.

Q. After a failed installation, I have noticed that some files remain in the temporary directory (/var/tmp or /tmp). In some cases, after multiple failed installations, the entire temporary directory fills up. Why does this happen?

A. A known issue with InstallShield applications is that they do not do a good job cleaning up after themselves. In some instances, it may be

necessary for you to manually clean up extraneous files from the temporary directory, especially after a failed installation.

Q. Can I fork an ISTK application on a UNIX server?

A. Forking in a UNIX/ISTK application is not recommended. If concurrency is absolutely necessary, either:

- Spawn the child process with a "system()" call, or ...
- Immediately follow the "fork()" with an "exec()" in the child process.

It is essential that the child process clear any state information inherited from the parent **before** it makes any subsequent ISTK calls.

Q. What's the difference between HP Integrity and HP Itanium? I have an HP Integrity server running HP-UX 11i v2, but the FileNet software modules are stamped "hp.itan" which I presume stands for HP Itanium.

A. HP Integrity is a family of Hewlett-Packard servers that are available in high-end, mid-range, and entry-class configurations. All HP Integrity servers are powered by Intel® Itanium® 2 processors. The FileNet software modules are stamped "hp.itan" to designate that they were compiled on, and designed to run on, Intel Itanium 2 processors.

Appendix B – Troubleshooting

During testing, we have become aware of some problems that can occur in very rare circumstances. Your Image Services Toolkit installation will undoubtedly go smoothly and we sincerely hope you will never encounter any of these problems. They are listed here in no particular order.

Problem A: **Some of the files in the Image Services Toolkit didn't copy correctly.**

Solution: Check to see that **all** Image Services Toolkit related programs are shut down.

On UNIX servers only, enter:

/fnsw/client/bin/wal_purge

Then run the installation again.

Problem B: **On my SUN server, NONE of the files in the Image Services Toolkit were copied!**

Solution: Make sure you have the latest Solaris patches installed. You can download the latest patch cluster from the SUN Web site. Install the patches, reboot the server, and then run the installation again.

If the latest Solaris patches are already installed on the server, and you are installing ISTK from CD-ROM media, the Volume Manager Daemon (**vold**) might be the cause. Whenever a CD is loaded, this daemon starts and automatically mounts the CD. However, **vold** might also interfere with the copying of files. Follow these steps to terminate and restart **vold**, and then run the installation:

1. Remove the Service Pack CD from the drive.
2. Terminate the **vold** process by entering:

   kill -TERM <ProcessID>

   where <ProcessID> is the process ID of **vold**.

3 Restart the **vold** process by entering:

vold &

4 Insert the Service Pack CD.

5 Run the ISTK installation again.

Problem C: **After I start the IS Toolkit installer on my UNIX server, I get this cryptic message:**

Unable to load input file: /tmp/isj92q67a/jvm

Solution: You might be logged on as **fnsw** or some other user. The installer **must** be run as the **root** user. Log on as **root** user and run the installation again.

Problem D: **In Graphical mode, the InstallShield "Welcome" screen won't display on my UNIX system.**

Solution: Make sure the **DISPLAY** environment variable has been set correctly. If you used the **su** command to log on as **root** user, the DISPLAY variable might not be correct.

1. Check the DISPLAY variable by entering:

   echo $DISPLAY

2. The variable should be set to **0:0** to display on your local monitor. If you are installing ISTK remotely on another server, the DISPLAY variable on that server must be set to direct the display to the server you're working from.

Problem E: **The Image Services Toolkit installer cannot find enough temporary space to proceed with the installation. In Graphical mode, a message displays on the screen and is logged in the log file. In Silent mode, the installer simply returns to the command prompt and no log file is created.**

Solution: Locate another directory that has the amount of space you need, and redirect the installer to that directory. On both UNIX and Windows servers, adding **-is:tempdir <directory>** to the command line overrides the default temporary directory as long as the <directory> you specify already exists. This optional temporary directory must be outside the /fnsw directory structure on UNIX servers, or the \fnsw and \fnsw_loc directory structures on Windows servers. For example, if you are installing the IS Toolkit on an HP-UX server, you might enter:

istk_4.1.2_hp.bin -is:tempdir /othertmp

Where /othertmp is the specific temporary directory you want to use.

Appendix C – Removing the Image Services Toolkit

If it becomes necessary to remove the Image Services software from your server, follow these steps:

Remove this release

1. Verify that you're logged on with **root** privileges.
2. Stop the Image Services software.
3. Back up any log files or other data in the /fnsw and /fnsw/local directories that you want to save.
4. Change to the root directory and run the uninstaller by entering:

   cd /

- Graphical mode – standard, graphical interface:

  /fnsw/etc/uninstaller/uninstall_istk &

- Console mode – plain text interface:

  /fnsw/etc/uninstaller/uninstall_istk -console

- Silent mode – no screen display whatsoever:

  /fnsw/etc/uninstaller/uninstall_istk -silent

Important It is essential that you use the uninstall_istk command if you decide to remove the Image Services Toolkit software. You cannot use the Operating System tools to remove Image Services Toolkit.

5 The uninstaller will lead you through the necessary steps and prompt you when it is finished.

Note The uninstaller leaves certain critical directories intact to protect existing data.

6 After the uninstaller has finished, go to the /fnsw/client directory and examine the remaining contents. Manually remove any unwanted files and directories.

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This product incorporates technology covered by one or more of the following patents: U.S. Patent Numbers: 6,094,505; 5,768,416; 5,625,465; 5,369,508; 5,258,855.

Program Number: 5724-R95

Printed in USA

SC19-2697-00