AS3000 Upgrade and Migration Guide

IMPAX 5.2 or 5.3 to IMPAX 6.5.1

Upgrading an IMPAX 5.2 or 5.3 Cluster

to an IMPAX 6.5.1 AS3000 Configuration

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Note: The IMPAX 6.5.1 software complies with the Council Directive 93/42/EEC Concerning Medical Devices, as amended by Directive 2007/47/EC.

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(Topic number: 7696)

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(Topic number: 122201)

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Contents

Getting started

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To successfully upgrade IMPAX, servers must meet certain hardware and software requirements.

Valid IMPAX upgrade paths

(Topic number: 6607)

Sites can upgrade to IMPAX 6.5.1 from any of these versions of IMPAX (supported versions include any applicable SUs):

- IMPAX 5.2.5—hereafter referred to as IMPAX 5.2
- IMPAX 5.3.1, 5.3.2—hereafter referred to as IMPAX 5.3
- IMPAX 6.2.1—hereafter referred to as IMPAX 6.2
- IMPAX 6.3.1—hereafter referred to as IMPAX 6.3
- IMPAX 6.4
- IMPAX 6.5

For more detailed information, refer to the *IMPAX 5.x - 6.x Service Update and Hot Fix Migration Paths* spreadsheet in the "Additional documents" section of the IMPAX Knowledge Base > Main Knowledge Base Page.

Important!

We recommend checking the migration log file after each leg of an upgrade before moving onto the next leg.

Additional information:

- AS3000 (Solaris) servers can upgrade to IMPAX 6.5.1 from any of the previously mentioned versions of IMPAX on Solaris 9 or 10. Existing Solaris 9 servers must upgrade to Solaris 10 when upgrading to IMPAX 6.5.1.
- Windows Server 2008 and Windows Server 2003 are supported on IMPAX AS300 servers. Windows 2008 is supported for fresh installations only; unless already on Windows 2008, Windows 2003 must continue to be used for upgrades.
- For IMPAX AS300 upgrades, SQL Server 2008 is supported.
- To upgrade an IMPAX AS300 cluster from SQL Server to Oracle, contact Agfa Professional Services for assistance. The SQL Server to Oracle migration process is not documented in this guide.
- The Application Server platform is either Windows Server 2003 or Windows Server 2008. Windows 2008 is supported for fresh installations only; unless already on Windows 2008, Windows 2003 must continue to be used for upgrades. All Application Servers in a cluster must use the same operating system—either Windows 2003 or Windows 2008.
- A site running IMPAX 4.5 can migrate its user data—passwords, IDs, and most preferences—to IMPAX 6.5.1. However, database data cannot be upgraded directly from IMPAX 4.5 to IMPAX 6.5.1. The IMPAX 4.5 database must first be upgraded to IMPAX 5.2.5, then to IMPAX 6.5.1.

Related documentation: IMPAX upgrades

(Topic number: 60109)

This guide is intended for service and administrative personnel who are upgrading an IMPAX 5.2 or 5.3 cluster to IMPAX 6.5.1. It is a companion volume to the *IMPAX 6.5.1 Preparing to Upgrade Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.1*, which describes all tasks to be done leading up to the upgrade weekend. This guide covers the tasks to be done *during* the upgrade weekend. This includes how to upgrade the Database Server, and all other servers and clients at that same cluster.

If installing and initially configuring a new AS300 cluster, rather than upgrading an existing cluster, refer to the *IMPAX 6.5.1 AS300 Installation and Configuration Guide*. For new AS3000 clusters, refer to the *IMPAX 6.5.1 AS3000 Installation and Configuration Guide*.

For information about using the IMPAX 6.5.1 software once it is installed, refer to the *IMPAX 6.5.1 Server Knowledge Base*, *IMPAX 6.5.1 Application Server Knowledge Base*, and *IMPAX 6.5.1 Client Knowledge Base: Extended*.

IMPAX hardware and software requirements

(Topic number: 61303)

For optimal performance, Agfa recommends particular hardware and software for each component of the cluster.

IMPAX Application Server hardware and software requirements

(Topic number: 6682)

The following lists the hardware and software requirements for an Application Server. Where a specific manufacturer is identified, only that manufacturer's device is supported.

IMPAX Application Server: Hardware requirements

(Topic number: 6691)

The following hardware configuration is recommended for Application Servers.

Important!

When installing or upgrading to IMPAX 6.5.1 on Windows machines, all IMPAX Clients, Servers, and Application Servers must have Pentium 4 or later CPUs. CPUs earlier than Pentium 4 do not support the SSE2 instruction set required for FIPS-compliant versions of the OpenSSL library used for authentication, encryption, and decryption.

Component	Requirements
System	**Preferred:** HP ML370 G6/G7, DL380 G6/G7 **Supported:** Dell 1900, 2900, 2950, 6900*, 6950* Stratus Ft 4300, 4410, or 5700 (dual CPU)**
CPU	Minimum: 1 x dual core
RAM	2 GB minimum
Hard drive space	2 x 73 GB (Mirrored)
RAID	Embedded
Tape backup	DAT 72 tape drive (if required for backup)
Modem	N/A
DVD-ROM	Yes

Component	Requirements
Network interfaces	100/1000 Mbps
Video	KVM Integrated video
Power supplied	Redundant
Peripherals	KVM or mouse and keyboard

* The use of four-CPU socket servers for IMPAX is supported but not recommended.

** Stratus Servers are no longer supported for new installs.

IMPAX Application Server: Software requirements

(Topic number: 6621)

The following tables list the required software for Application Servers using Windows Server 2003® and Windows Server 2008® platforms. Unless otherwise indicated, Agfa does not provide the software as part of the Application Server installation package.

Component	Requirements
Operating system	Windows Server 2003® R2 SP2, Standard or Enterprise Editions 32 bit Windows Server 2008® SP2, Standard or Enterprise Editions 32 bit
Remote access	Symantec pcAnywhere™ version 12.5
Other explicit software	• IIS 6.0 for Windows 2003 R2 Server IIS 7.0 for Windows 2008 SP2 • Microsoft Internet Explorer 7.0 or 8.0 • LDAP—ADAM SP1 services (Windows 2003 Server) AD LDS (Windows 2008) • Java 1.6 • .NET 3.5 SP1 • Latest version of Adobe® Reader® • Norton Antivirus 6.1 or higher, Trend Micro, McAfee Antivirus 4.5 or higher
Database connection software	If connecting to an Oracle database: • Oracle 10g Client Release 2 (10.2.0.4.0) for Microsoft Windows (32-bit)—Oracle .NET Data Provider If connecting to a SQL Server database: • Integrated MDAC, which is included in the installation of the Application Server Business Services or SQL Server 2005 SQL Native Client

IMPAX AS300 Server hardware and software requirements

(Topic number: 6674)

The following lists the hardware and software requirements for an IMPAX AS300 Server (including single-server configurations). Where a specific manufacturer is identified, only that manufacturer's device is supported.

IMPAX Server: Hardware requirements

(Topic number: 6690)

The following hardware configuration is recommended for IMPAX AS300 servers (including single-server configurations).

Important!

When installing or upgrading to IMPAX 6.5.1 on Windows machines, all Servers and Application Servers must have Pentium 4 or later CPUs. CPUs previous to Pentium 4 do not support the SSE2 instruction set required for FIPS-compliant versions of the OpenSSL library used for authentication, encryption, and decryption.

Component	Requirements
Example systems	**Preferred:** HP ML370, DL380 (may be deployed with VMware ESX 3.5) **Supported:** Dell 1900, 2900, 2950, 6900*, 6950* Stratus® ftServer® 4300, 4410, or 5700 (dual CPU)
Hard drive	Minimum three drives Minimum drive size 40 GB Minimum drive size 73 GB NAS/SAN connections also supported
RAM	4 GB minimum
Number of CPUs	Two or four* CPUs, 2 GHz minimum each
RAID	Embedded RAID (for onboard storage)
Tape backup	DAT 72 tape drive, if required for database backup
Video	Integrated video
DVD	Yes
Network interfaces	100/1000 Mbps
Modem	N/A

Component	Requirements
Power supplies	Redundant (additional)
Peripherals	Mouse and keyboard

* The use of four-CPU socket servers for IMPAX is supported but not recommended.

** Stratus Servers are no longer supported for new installs.

Additional AS300 hardware requirements: Storage requirements
(Topic number: 6733)

Additional hardware can be used to meet archive requirements.

IMPAX AS300 Server: Non-SCSI CD/DVD burner and controller cards
(Topic number: 58044)

OEM-supplied CD/DVD writer

IMPAX AS300 Server: HSM storage requirements
(Topic number: 6686)

Note:

Direct attached libraries are not supported in IMPAX 6.5.1.

The following HSM storage devices are supported:

- EMC
- HP
- QStar

Note:

To use QStar HSM with IMPAX, open port 160 for UDP messages.

IMPAX AS300 Server: Storage requirements
(Topic number: 6616)

Manufacturer	Model	Manufacturer	Model
IBM	Shark ESS Series FastT Series	HP	MSA1000 series EVA series
NetApp	R series F series FAS series	Hitachi	9000 series
EMC	CX-3 series	StorageTek (STK)	D series

Manufacturer	Model	Manufacturer	Model
	Symmetrix DMX series		B series
	Centera		
	Centera Universal Access		

IMPAX Server: External software requirements

(Topic number: 6695)

The following software is required for most IMPAX AS300 servers. Unless otherwise indicated, Agfa does not provide the software as part of the IMPAX AS300 Server installation package.

Component	Requirements
Operating system	**For upgrades:** Windows Server 2003 R2 SP2, Standard or Enterprise Editions, 32-bit or 64-bit (only a dedicated Database Server can be run on Windows 64-bit) or **For new installs:** Windows Server 2008 SP2, Standard or Enterprise Editions, 32-bit or 64-bit (only a dedicated Database Server can be run on Windows 64-bit)
Database software	One of the following: • Oracle 10g 32-bit Server and Client (provided on Oracle for Windows 32-bit DVD) or • Oracle 10g 64-bit Server (provided on Oracle for Windows 64-bit DVD) or • Microsoft SQL Server 2005, Standard or Enterprise Edition, with Service Pack 3 (upgrades only) or Microsoft SQL Server 2008, with Service Pack 1 (upgrades only)
Browser	Internet Explorer 8.0
Java	
Documentation	Latest version of Adobe® Reader®
Remote access (optional)	Symantec pcAnywhere version 12.5
Antivirus	McAfee Antivirus 4.5 or higher

IMPAX AS3000 Server hardware and software requirements

(Topic number: 6675)

The following lists the hardware and software requirements for an IMPAX AS3000 Server. Where a specific manufacturer is identified, only that manufacturer's device is supported.

IMPAX AS3000 Server: Supported hardware configurations

(Topic number: 6689)

The four general categories of servers are:

- Single-host server—Database Server/Archive Server/Network Gateway
- Database Server hosting the Oracle database
- Archive Server or combined Archive Server/Network Gateway
- Network Gateway

The hardware requirements for each of these are outlined in the sections that follow.

IMPAX AS3000 Server: Hardware requirements

(Topic number: 6622)

We recommend the following components for each AS3000 server:

Component	Requirements
Validated systems	The following Sun servers can be used in any combination as required: For new installations: • T5120, T5220, T5140, T5240 For upgrades: • V240/V440 or newer • T2000, T5120, T5220, T5140, T5240 **Solaris 10u8 or later only.** We do not recommend Sun T1000, V210, and V215 because of the single power supply limitation. When planning upgrades, note all end-of-sales and end-of-support dates published on MedNet. **Note:** These servers must have a DVD-ROM drive present for IMPAX installation purposes.

Component	Requirements
Number of CPUs	A minimum of two CPUs should be used in any of the server categories, after which the number of CPUs should be determined by server usage. General recommendations: • Database Server: Two to six CPUs • Archive Server/Network Gateway: Two to four CPUs • Network Gateway: Two CPUs • Single-host server: Two to eight CPUs Does not apply to the multi-core processors used in T-series Sun servers.
RAM	A minimum of 2 GB per CPU should be used in any of the server categories, after which the amount of RAM should be determined by server usage. General recommendations: • Database Server: 2GB per CPU • Archive Server/Network Gateway: 2GB to 4GB per CPU • Network Gateway: 2GB to 4GB per CPU • Single-host server: 2GB to 8GB per CPU
Hard drive	A minimum of two hard drives should be used in any of the server categories, after which the number of drives should be determined by server usage and configuration. We recommend having data available on an external disk subsystem and not an internal drive.
RAID	Required • RAID 1 + 0 is mandatory for the database (along with ForceDirectIO)—See the partitioning recommendations in the *IMPAX 6.5.1 AS3000 Installation and Configuration Guide*. • RAID 5 or better for image cache.
Tape backup	Optional for Database Server but not recommended—not required if using file system backups.
Modem	Not required.
DVD-ROM	Required—One per cluster is required.
Floppy	No.
Network interface	Sun 10/100/1000 Mbps NICs. A 1 gigabit network should be considered the minimum for server interconnections. Consider segregating network traffic in order to improve overall throughput.

Component	Requirements
Jukebox	Direct attached archives are not supported.
Other	UPS that meets the region's safety approval standards and the power requirements of the machines it supports.

IMPAX AS3000 Server: Database backup requirements
(Topic number: 10319)

For file system backup, the following are supported:

- Back up to NFS or SAN

For tape backup (upgraded systems only, not new installations), the following are supported:

- SUN DAT-72
- Standalone DLT 8000
- Standalone LTO2
- Standalone SDLT
- Standalone L8 with LTO or LTO2 or SDLT

Important!

Oracle disk-to-tape backup requires significant disk space, as a minimum of two backups must be kept on disk. To accommodate disk-to-tape backups of the Oracle database, ensure that you define a Flashback partition that is at least 3 times the expected size of the database.

Operating systems disks should be configured as RAID 1, preferably with hardware mirroring; however, on platforms that do not support hardware mirroring, Solstice DiskSuite is acceptable. For more information regarding disk management strategies, refer to "Disk management strategies" (topic number 103117) in the *IMPAX 6.5.1 AS3000 Installation and Configuration Guide*.

IMPAX AS3000 Server: External storage requirements
(Topic number: 10321)

When planning upgrades, note all end-of-sales and end-of-support dates published on MedNet. A comprehensive list of currently supported storage products is available through Agfa Professional Services.

For external storage, the following are supported:

EMC CX Series

EMC DMX series

EMC NS NAS

HP EVA series

HBAs supported by storage vendor and operating system

IMPAX AS3000 Server: Software requirements

(Topic number: 6620)

The following software is required for an IMPAX AS3000 cluster:

Component	Requirements
Operating system	Solaris™ 10u8 or later.
Database software	Oracle 10.2.0.4.0 Standard or Enterprise Editions (supplied with IMPAX)
Solaris patches	As recommended by Sun.
Other software	• Java Runtime (included with Solaris) • Apache Server (included with Solaris) • Adobe® Reader® for Solaris (for documentation)
Supported software	The following software is supported but not required: • SUN SAM-FS 4.5/4.6/5.0 on Solaris 10, NFS or local • IBM Tivoli Storage Manager—NFS only • QStar • EMC Centera

Curator hardware and software requirements

(Topic number: 6714)

We recommend the following hardware and software for a dedicated Curator and CD Export server.

IMPAX Server: Hardware requirements

(Topic number: 6690)

The following hardware configuration is recommended for IMPAX AS300 servers (including single-server configurations).

Important!

When installing or upgrading to IMPAX 6.5.1 on Windows machines, all Servers and Application Servers must have Pentium 4 or later CPUs. CPUs previous to Pentium 4 do not support the SSE2 instruction set required for FIPS-compliant versions of the OpenSSL library used for authentication, encryption, and decryption.

Component	Requirements
Example systems	**Preferred:** HP ML370, DL380 (may be deployed with VMware ESX 3.5) **Supported:** Dell 1900, 2900, 2950, 6900*, 6950* Stratus® ftServer® 4300, 4410, or 5700 (dual CPU)
Hard drive	Minimum three drives Minimum drive size 40 GB Minimum drive size 73 GB NAS/SAN connections also supported
RAM	4 GB minimum
Number of CPUs	Two or four* CPUs, 2 GHz minimum each
RAID	Embedded RAID (for onboard storage)
Tape backup	DAT 72 tape drive, if required for database backup
Video	Integrated video
DVD	Yes
Network interfaces	100/1000 Mbps
Modem	N/A
Power supplies	Redundant (additional)
Peripherals	Mouse and keyboard

* The use of four-CPU socket servers for IMPAX is supported but not recommended.

** Stratus Servers are no longer supported for new installs.

IMPAX Server: External software requirements

(Topic number: 6695)

The following software is required for most IMPAX AS300 servers. Unless otherwise indicated, Agfa does not provide the software as part of the IMPAX AS300 Server installation package.

Component	Requirements
Operating system	**For upgrades:** Windows Server 2003 R2 SP2, Standard or Enterprise Editions, 32-bit or 64-bit (only a dedicated Database Server can be run on Windows 64-bit) or **For new installs:**

Component	Requirements
	Windows Server 2008 SP2, Standard or Enterprise Editions, 32-bit or 64-bit (only a dedicated Database Server can be run on Windows 64-bit)
Database software	One of the following: • Oracle 10g 32-bit Server and Client (provided on Oracle for Windows 32-bit DVD) or • Oracle 10g 64-bit Server (provided on Oracle for Windows 64-bit DVD) or • Microsoft SQL Server 2005, Standard or Enterprise Edition, with Service Pack 3 (upgrades only) or Microsoft SQL Server 2008, with Service Pack 1 (upgrades only)
Browser	Internet Explorer 8.0
Java	
Documentation	Latest version of Adobe® Reader®
Remote access (optional)	Symantec pcAnywhere version 12.5
Antivirus	McAfee Antivirus 4.5 or higher

IMPAX Client hardware and software requirements

(Topic number: 6679)

The following lists the recommended hardware and software for an IMPAX Client workstation.

IMPAX Client: Hardware requirements

(Topic number: 7793)

The following hardware configuration is recommended for new workstations. While IMPAX Client should work on an equivalent platform, optimal results can be guaranteed only on the recommended platform.

To use the CT-MR navigation tools, we strongly recommend that, due to the high volume of data being manipulated, Client systems be equipped with a high-end video subsystem that is PCIe X16 based.

CAUTION!

For official diagnostic interpretation, we recommend setting the display to 32-bit color or more.

Component	Requirements	
System	The Agfa preferred supplier is HP. HP xw4400, xw4600, xw6400, xw6600, z400, or z600 Dell Precision™ 490 or 690, T5400, T7400, or T7500 Motion LE1600 Tablet PC (Non-diagnostic)	
CPU	2 x 2.0GHz or higher 1 x Dual/Quad Core 2.8GHz or higher 1 x Intel® Pentium® M 1.5GHz (Tablet PC – Non-diagnostic)	
RAM	Windows XP: 1 GB minimum Windows Vista and Windows 7: 4 GB minimum 4 GB recommended for all new systems for optimal performance and viewing of large volume image sets 4 GB recommended for IMPAX Clinical Applications such as IMPAX Virtual Colonoscopy, IMPAX PET-CT Viewing, and IMPAX Reporting (embedded speech recognition)	
RAM (Tablet OS)	512 MB min (Non-diagnostic Tablet PC only)	
Hard drive space	80 GB minimum	
Modem	Not applicable	
DVD-ROM drive	Yes	
Floppy drive	Not applicable	
Network interfaces	System comes with an integrated 100/1000 Mbps Ethernet adapter	
Power supply	Default	
Peripherals	Scroll mouse and keyboard For North America, the Logitech MX518 is used with the MA3000.	
Other	Microsoft supported DVD RW/CDRW	
Video		
Diagnostic review workstations and high-end diagnostic review workstations	**Windows 7 (WDDM)*:** MXRT1150, 2150 MXRT5200 (covers 98% of the diagnostic requirements) MXRT7200 (high end board for IMPAX Clinical Applications such as Oasis for IMPAX) MXRT7300 (high end board for IMPAX Clinical Applications such as Oasis for IMPAX. Supported from WDDM v1.1 May/June 2010)	**Windows XP and Vista:** BarcoMed PCIe for Coronis BarcoMed PCIe for Nio BarcoMed PCIe 5MP2FH (only with monitor MF GD-5621HD) MXRT 2100/5100/7100 (not sold anymore but still supported) MXRT5200 (covers 98% of the diagnostic requirements)

Component	Requirements	
		MXRT200 and 7300 (high-end board for IMPAX Clinical Applications such as Oasis for IMPAX)
RIS/Administrator stations and Clinical review stations	**Windows 7 (WDDM):**	**Windows XP and Vista:**
	NVIDIA FX 1700, FX 1800, FX 4800	NVIDIA FX 1700, FX 1800, FX 4800
	ATI 3700, 3750, V3800 (third monitor board)	ATI 3700, 3750, V3800 (third monitor board)
	MXRT 1150/2150 (third monitor board)	MXRT 1150/2150 (third monitor board)

*Windows 7 and WDDM drivers do not support the BarcoMed and older MXRT (2100, 5100. and 7100) boards.

IMPAX Client: External software requirements

(Topic number: 6694)

The following software is required for all new stations. Unless otherwise indicated, Agfa does not provide the software as part of the IMPAX Client installation package.

Component	Requirements
Operating system	Microsoft Windows XP Professional SP3 may be used for upgrades but is no longer available for shipment
	Microsoft Windows Vista™ / Windows Vista x64 (Business and Ultimate) SP2
	Windows 7 Professional 64-bit (single language support), Windows 7 Ultimate 64-bit (multi-language support) SP1 for Diagnostic review stations
	Note that other versions of Windows 7 can be used for non-diagnostic review stations.
Other software	Microsoft Internet Explorer 7.0 and 8.0
	.NET 3.5 SP1
	Latest version of Adobe® Reader®
	Antivirus software such as Norton Antivirus 6.1 or higher, Trend Micro, or McAfee Antivirus 4.5 or higher
	Note that Oracle 11 Client is required for IMPAX Reporting and IMPAX for Cardiology.

The IMPAX Client will run on 64 bit operating systems in 32bit compatibility mode. The IMPAX Client is not a 64bit application and therefore does not take advantage of 64bit processing or memory addressing.

Note:

We recommend upgrading Windows Vista to Windows 7 for systems that will be used as diagnostic workstations.

Preparing to upgrade

2

Important!

Before proceeding with the upgrade of the AS3000 server components, ensure that you have completed the tasks outlined in the *IMPAX 6.5.1 Preparing to Upgrade Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.1*.

Before upgrading from an IMPAX 5.2 or 5.3 cluster to an IMPAX 6.5.1 AS3000 configuration, you must complete certain preparatory tasks, such as taking a system snapshot, stopping the transmission of data to IMPAX 5.2 or 5.3, redirecting studies to the traveling server, and halting queues.

1. Gathering information and equipment

(Topic number: 6884)

Before performing the AS3000 server upgrade and migration, gather the information and equipment needed when migrating and upgrading the stations.

IMPAX 5.2 or 5.3 upgrades: Necessary information and equipment

(Topic number: 10128)

Equipment and information	Notes
Whether the Cross-Cluster Dictation Interlock tool needs to be run	
Which version of Solaris is being used: Solaris 9 or Solaris 10	
Sun Solaris maintenance agreement and login details, for installing patches	
Whether Oracle Data Guard is being used	

Equipment and information	Notes
Whether a traveling server is being used	
The type of archiving being done: DLT, MOD, HSM, 9840 tape, or PACS archive (IMPAX 6.5.1 supports HSM and PACS archiving only)	
Fully qualified domain name of the main Application Server	
Microsoft Windows Server 2003 R2 SP2 or Windows Server 2008 SP2 software (if not already installed on Windows-based servers)	
Whether to install a Curator and CD Export server	
Which standard time server to synchronize the server clocks against	
Whether using an Audit Record Repository	

2. Running the Cross-Cluster Dictation Interlock tool

(Topic number: 47379)

Before it can be run, the Cross-Cluster Dictation Interlock tool must be installed and configured. Refer to "Installing and running the Cross-Cluster Dictation Interlock tool" (topic number 48033) in the appropriate version of the *IMPAX Preparing to Upgrade Guide*.

The Cross-Cluster Dictation Interlock tool synchronizes both the dictation status and the claim status of studies between the previous version of IMPAX and IMPAX 6.5.1, when these are running in parallel—such as may happen when using a training server, when using a traveling server (AS3000 sites), or if planning to run the upgraded IMPAX cluster alongside the previous-version IMPAX cluster for a transition period.

Note:

Synchronization of the claim status of studies occurs only between versions of IMPAX that support shared workflows from which radiologists can then claim ownership of studies.

To run the Cross-Cluster Dictation Interlock tool

1. On the 6.5.1 Application Server where the Relay service is running, open a command prompt.
2. Type the following command:

   net start StudyStatusRelayService
3. Exit the command prompt.

3. Taking a pre-migration system snapshot

(Topic number: 6844)

Before upgrading to IMPAX 6.5.1, use the migration_inventory tool to capture the current state of the system for later comparison. Perform this task on any computer with access to the AS3000 database and on which the Migration Tools have been installed.

To take a pre-migration system snapshot

1. Log in as mvf.
2. In a terminal window, change to the directory containing the migration_inventory tool.
3. Type

   ./migration_inventory -s -d *database_name* -U *database_user_name* -P *database_password* -D *Database_Server_host_name*

   The output is stored in the migration_info table. It lists the number of IMPAX studies, total objects, and objects in cache. It also lists all IMPAX source stations and DICOM printers.
4. To create a report file with this information, type

   ./mig-reporter -t system_inventory_tool

   This command writes the output of the migration_inventory command to a report file in the /usr/mvf-mig6/reports directory. (For other parameters you can use with this command, refer to the "mig-reporter" reference topic, topic number 10635, in the appropriate version of the *IMPAX Preparing to Upgrade Guide*.)

Tip:

For ease of reading this report, you can open it in Microsoft Excel, if you have access to this program.

4. Emptying Connectivity Manager queues

(Topic number: 113307)

You can manage queues through Service Tools, which is the Connectivity Manager interface. Service Tools consists of a series of Managers. The Queue Manager displays a list of devices with queues, and provides queue management functionality.

Before shutting down IMPAX to upgrade the system, empty all DM Out or impax_report_server queues. Consult Connectivity Manager service personnel to discuss queues that have error transactions.

To empty Connectivity Manager queues

1. In Connectivity Manager, open Service Tools and click **Queue Manager**.
2. Select any device with either pending or error transactions and empty the queues.
3. Retry recent messages and delete older messages since newer transactions may have updated patient, study, and report data after these transactions entered an error state.

5. Stopping Connectivity Manager interfaces

(Topic number: 113766)

During the IMPAX upgrade, you can prevent the loss of clinical patient updates from hospital information systems by stopping data bound for the Connectivity Manager, or by stopping the Connectivity Manager's outbound queues. The preferred method is to stop inbound interfaces, which prevents the Connectivity Manager from receiving incoming messages.

Coordinate with hospital information system personnel to confirm that they are capable of holding messages in queues. If the information system queues can be stopped, also stop the Connectivity Manager's inbound interfaces.

To stop Connectivity Manager interfaces

1. In the Connectivity Manager, open **Service Tools**.

   The Device Manager displays a list of devices and interfaces and their status.
2. To resort and group all device classes, click **Class**.
3. Scroll down to view CMSI and HL7 class devices.
4. Note which **HL7 In** and **CMSI In** interfaces are started. These interfaces must be restarted after the IMPAX upgrade.
5. Select the checkbox beside each of the started inbound interfaces.
6. Click **Stop**.

The status of each selected interface changes to Stopped.

6. Stopping Connectivity Manager queues

(Topic number: 67550)

If the Connectivity Manager's inbound devices have not been stopped, stop the IMPAX outbound DM Out and impax_report_server queues prior to shutting down IMPAX for the upgrade. Messages in stopped queues are not processed and remain in the queue until the queue is restarted. Outbound queues are restarted automatically if the Agfa Connectivity service is restarted, or if the Connectivity Manager is rebooted.

To stop Connectivity Manager queues

1. In the Connectivity Manager, open **Service Tools** and click **Queue Manager**.

2. In the Queue List table, select the checkbox beside each queue belonging to a device with a DM Out or impax_report_server component.
3. Click **Stop**.

   The status of the queues changes to Stopped.

Connectivity Manager outbound message queues must be configured with the new server settings before messages are added to the queues. Consult a Connectivity integrator to create a device for the destination IMPAX server. Report updates can be sent to only one IMPAX server, after all reports have been copied to that server. This applies to the traveling server, if used, and also the migrated IMPAX server.

7. Updating study status between servers

(Topic number: 51514)

Important!

This topic applies only when using an AS3000 traveling server as part of the upgrade and migration.

When studies are dictated on the production server, a delay occurs before the traveling server is updated with the new status. Due to this delay, when switching to the traveling server during the migration process, some studies that have already been dictated will switch back to status `New`. To avoid this problem, synchronize the study status before redirecting studies to the traveling server.

To update study status between servers

1. Log in as oracle user on the production Database Server, log into sqlplus as **dbadmin** and type

   create public database link travel connect to dbadmin identified by *admin_password* using '*traveling_server_name*';

   where *admin_password* is the password for the dbadmin user on the traveling server and *traveling_server_name* is the name of the traveling server.
2. In a text editor such as vi, edit the /var/opt/oracle/tnsnames.ora file to add the traveling server.

```
traveling_server_name.world =
 (DESCRIPTION =
     (ADDRESS_LIST =
         (ADDRESS =
            (COMMUNITY = impax.world)
            (PROTOCOL = TCP)
            (Host = traveling_server_name)
            (Port = 1521)
         )
     )
     (CONNECT_DATA = (SID = MVF)
     )
)
```

3. Perform the report status update by typing the following into sqlplus:

declare

the_counter number := 0;

cursor study_cursor is

select t.study_ref, s.status from dosr_study s, dosr_study@travel t

where s.patient_id = t.patient_id and s.accession_number = t.accession_number

and s.status <> t.status;

begin

for study_record in study_cursor LOOP

update dbadmin.dosr_study@travel set status = study_record.status where study_ref = study_record.study_ref;

the_counter := the_counter +1;

if mod (the_counter, 100) = 0 then

commit;

end if;

end loop;

commit;

end;

/

4. Drop the link to the traveling server database by typing the following in sqlplus:

   drop public database link travel;

8. Redirecting studies to the traveling server

(Topic number: 10132)

You can now configure the modalities to redirect studies to the traveling server system, so that they remain accessible while the migration continues. In the absence of a traveling server, studies may be redirected to the training server instead.

How studies are redirected is modality-specific and is not documented in this guide.

9. Deleting cache locations for studies

(Topic number: 7707)

If you are replacing the 5.2 or 5.3 servers and are not restoring the files in the cache directory after the upgrade, to prevent database inconsistencies, remove all database references to images in cache. You must also do this for studies in Client caches, because IMPAX 6.5.1 no longer supports cached Clients—only cacheless and standalone Clients.

To remove references to images in cache, find all study_refs that are in the cache and delete them.

Note:

Images in the cache are archived and, if necessary, can be retrieved after the upgrade is complete.

To delete cache locations for studies

1. On a station with a cache containing database references to remove, log in as mvf user and launch CLUI and type the following:

   cache query

   A list of caches and their volume_refs is displayed.

2. To store all study_refs into variable *a*, type

   save_refs a select distinct ds.study_ref from dosr_study ds, dosr_object do where ds.study_ref = do.study_ref and do.object_ref in (select object_ref from osr_location where volume_ref = *volume_ref*)

   where *volume_ref* is the volume reference of the cache.

3. To enter menu mode, type

   Go menu

4. Select **Study Manager**.
5. Select **Delete Studies Menu**.
6. Select **Delete Study from Cache**.
7. To process the study_refs stored in the variable *a*, at the command prompt, type **a**.

   All studies in the volume_ref's cache are removed.

8. Repeat this process on each station in the cluster that has a cache and whose database references you want to remove.

10. Archiving remaining unarchived studies

(Topic number: 7742)

Important!

This topic applies only to an Archive Server or to the Archive component of a single-host server (including standalone with archive and single-server configurations).

Use the information from the latest report on archiving studies to identify remaining unarchived studies (for details, refer to the appropriate version of the *IMPAX Preparing to Upgrade Guide*). You must store these studies to the archive.

Verifying unverified studies

(Topic number: 58295)

Before archiving studies, verify all unverified studies.

To verify unverified studies

1. In the Service Tools, on the Daily tab, click **Study Manager**.
2. From the location list, select **Failed Verification**.
3. Set other search criteria to **Any** value.
4. Click **Refresh**.
5. In the search results, select all studies.
6. To fix up the studies that have failed HIS verification, click **Fix All Studies**.
7. Review the results presented in the dialog.

Storing unarchived studies

(Topic number: 58298)

When no studies are returned by the Failed verification query, archive all remaining studies.

To store unarchived studies

1. In the Service Tools, on the Daily tab, click **Study Manager**.
2. From the location list, select **Cached** (or another value that will return the unarchived studies).
3. Set other search criteria to **Any** value (or set to appropriate values).
4. Click **Refresh**.
5. In the search results, select the studies to archive.

   The Location column on the results list shows the current location of the study, and indicates which studies are only in cache (C for system cache, L for local station cache, W for web cache) and not also in an archive location (such as P for PACS archive).
6. Click **Store to Archive**.
7. To update the status of the selected studies, click **Refresh**.
8. Ensure that all studies are archived.

Note:

To store unarchived studies, you could also use the Migration Toolbox and run the study_archive_report tool. Refer to the “Running an initial report on study archiving status”

topic in the *IMPAX 6.5.1 Preparing to Upgrade Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.1*.

11. Stopping SMMS server alerts

(Topic number: 10136)

If using an SMMS (PACSWatch) server, prevent it from sending alerts before shutting down IMPAX, so that the GSC (Global Support Center) does not get false alerts.

To stop SMMS server alerts

1. On the SMMS server, double-click the **Disable GSC Notifications** icon.
2. Open the **C:\agfa\config\emailcmd.cfg** file for editing.
3. Change the line `enabled = 'true'` to **enabled** = **'false'**.
4. Save the file and close it.

Alerts are no longer sent about that server, but the rest of the system continues to be monitored.

12. Uninstalling the IMPAX 5.2 or 5.3 Knowledge Bases

(Topic number: 6837)

If the IMPAX 5.2 or 5.3 Knowledge Bases were installed on the AS3000 servers, uninstall the 5.2 or 5.3 Knowledge Bases. In the IMPAX 6.5.1 cluster, all IMPAX documentation is installed on the Application Server.

To uninstall the IMPAX 5.2 or 5.3 Knowledge Bases

1. Log into the server as the **root** user.
2. To remove the Server documentation package, type

   pkgrm IMPAXsrkb
3. To continue with removing the package, type **y**.
4. To remove the Client documentation package, type

   pkgrm IMPAXclkb
5. To continue with removing the package, type **y**.
6. To remove any translated Client Knowledge Bases, change to the **/usr/mvf/documents/client** directory and type **rm -rf *client_translations_directory***.

13. Dropping Heartlab triggers

(Topic number: 60542)

This topic is applicable to Heartlab-integrated systems only.

Drop the Heartlab triggers before upgrading the database.

To drop Heartlab triggers

1. On the Database Server, log in as mvf user and using SQLPLUS, log in as user **dbadmin**.
2. Type the following:

   SQLPLUS> **drop trigger TRG_DOSR_STUDY_UPD;**

   SQLPLUS> **drop trigger TRG_DOSR_SERIES_UPD;**

   SQLPLUS> **drop trigger TRG_DOSR_OBJECT_UPD;**

   SQLPLUS> **exit;**

14. Stopping antivirus software

(Topic number: 7616)

If you have antivirus software installed on any Windows-based servers, ensure that no scan jobs are running that would interfere with the upgrade process. Stop the antivirus services.

To stop antivirus software

1. On a Windows server to upgrade, launch the antivirus software.
2. Halt the scan operation according to the vendor's instructions.

15. Shutting down the IMPAX system

(Topic number: 10140)

All components of the IMPAX system must be shut down before upgrading the database software.

Stopping all IMPAX queues

(Topic number: 10142)

Allow remaining SEND jobs to continue until they have finished, then stop any more studies from moving around the IMPAX system.

To stop all IMPAX queues

1. Launch the Service Tools and log in as the **service** user.
2. On the Daily tab, select **Job Manager**.
3. Select **All Queues**.
4. Click **Halt Queue**.

All queues are now halted.

Stopping IMPAX services on AS300 servers

(Topic number: 60527)

If using any AS300 (Windows-based) Network Gateways or Archive Servers in a mixed-host configuration, you must stop IMPAX services on these servers before upgrading the AS3000 Database Server. Perform this task on each AS300 server.

To stop IMPAX services on AS300 servers

1. On the AS300 server, in Windows Explorer, navigate to C:\mvf\bin.
2. Double-click **stopall.bat**.
3. Double-click **removeall.bat**.

This stops then removes IMPAX services from that server.

Stopping IMPAX on AS3000 servers

(Topic number: 10150)

You must disable IMPAX on each IMPAX AS3000 server, including any IMPAX 6.5.1 servers that you have staged in advance.

Important!

Perform this task on any Archive Server or Network Gateway servers first, then on the Oracle Database Server.

To stop IMPAX on AS3000 servers

1. Log into the AS3000 server as the **root** user.
2. To stop IMPAX, type

   stop_impax
3. Then type

   disable_impax

   `No such file or directory` error messages may be displayed. You can safely ignore them.

This stops then disables IMPAX on that server.

16. Disabling IMPAX crontab entries

(Topic number: 10152)

If Oracle processes such as database backup, task scheduler, or database analysis start to run while Oracle is being upgraded, the database will be damaged. To prevent this from happening, comment out any entries in crontab that would launch such processes.

To disable IMPAX crontab entries

1. Log into the Database Server as the **mvf** user.
2. To open the crontab file, type **crontab -e**.
3. Check the file carefully for any entries related to IMPAX.
4. Comment out any IMPAX entries that you find.
5. Save and close the file.

17. Stopping CLUI and ISQL

(Topic number: 6848)

You must stop CLUI and ISQL before upgrading the database. If either application is running, the automated upgrade script cannot continue. The Oracle installation fails and leaves the database in an unusable state.

Checking for the CLUI and ISQL processes

(Topic number: 58303)

Check whether the CLUI and ISQL processes and need to be stopped before the upgrade.

To check for the CLUI and ISQL processes

1. Log into the Database Server as the **mvf** user.
2. Type

   psg clui

   psg isql

   If these processes are not running, nothing is returned.

   But if either process is running, you see the row of headers along with a row of data; for example:

   ```
   USER PID %CPU %MEM SZ RSS TT S START TIME COMMAND
   mvf 26409 3.2 4.8 3518 1184 pts/7 T 13:12:53 0:00 clui
   ```

3. If processes are running, record the PID number from the returned header.

Stopping the CLUI and ISQL processes

(Topic number: 58306)

If the CLUI and ISQL processes are running, stop them before the upgrade.

To stop the CLUI and ISQL processes

1. Log into the Database Server as the **mvf** user.
2. Type

   kill -9 *PID_number*

   For the PID, look in the output of the previous procedure. In the preceding example, the PID is 26409.

Ensuring that the CLUI and ISQL processes are stopped

(Topic number: 58309)

After stopping CLUI and ISQL, verify that they are no longer running.

To ensure that the CLUI and ISQL processes are stopped

1. Log into the Database Server as the **mvf** user.
2. Type

   psg clui

   psg isql
3. Ensure that nothing is returned.

18. Shutting down the Database Server

(Topic number: 10156)

Run these commands on the Database Server before upgrading the software or restaging the server.

To shut down the Database Server

1. Log into the Database Server as the **mvf** user.

   or

   When restaging a Database Server already running Oracle 10.2.0.4.2, log in as the **oracle** user.
2. To shut down the database, type

   dbshutmvf
3. To shut down the listener, type

lsnrctl stop

4. To confirm that all IMPAX and Oracle processes have stopped, type

   psg mvf

   psg ora

   psg tns

5. Verify that, in each of these cases, nothing is returned.

19. Storing a cold backup of the database and other Oracle configuration files

(Topic number: 59281)

Back up the Oracle data and configuration files immediately before the start of the upgrade or restage. This procedure can take a significant amount of time. To estimate how long it will be, check the duration of warm backups as recorded in the /data/logs/backup.log file.

To store a cold backup of the database and other Oracle configuration files

1. If using a NFS share to store the backup, start the NFS service on the server where the backup files will be stored.

   On Solaris 10, type

   su -

   svcadm -v enable -r network/nfs/server

   or

   On Solaris 9, type

   su -

   cd /etc/rc3.d

   ./s15nfs.server start

2. To share the directory that the IMPAX server will be writing to use a Unix text editor such as vi. For example, type

   su -

   vi /etc/dfs/dfstab

3. Add the following line

   share -F nfs -o rw,anon=0 *path_to_backup_location_directory*

4. Save and close the file.

5. On the IMPAX server, mount the share as the **root** user. For example, type

   mkdir /*backup_location*

mount -o rw,bg,hard,rsize=32768,wsize=32768,vers=3,forcedirectio,nointr,suid *server_containing_backup*:*absolute_path_to_backup_location_directory* /*backup_location*

6. As the **root** user, copy the appropriate files to the backup location.

Original directory	File	IMPAX 6.5.1 directory	Description
/dbase	all files under this directory	/dbase	Oracle data files and control files
/usr/oracle/current/dbs or /opt/oracle/current/dbs (if replacing an IMPAX 6.4 or later server)	orapw	/opt/oracle/current/dbs	Oracle password file location
	initMVF.ora		Oracle text initialization parameter file
	spfileMVF.ora		Oracle binary initialization parameter file (only if running Oracle 10.2)
	dr1MVF.dat		Oracle Data Guard configuration file (only when Oracle Data Guard is configured)
	dr2MVF.dat		Oracle Data Guard configuration file (only when Oracle Data Guard is configured)
/var/opt/oracle	tnsnames.ora	/var/opt/oracle	Oracle Naming Configuration
	listener.ora		Oracle Listener Configuration
	sqlnet.ora		Oracle SQLNET Configuration
	listener.ora.dg*xx*		IMPAX 6.4 or later Oracle Listener Configuration backup
	tnsnames.ora.dg*xx*		IMPAX 6.4 or later Oracle Naming Configuration backup

Original directory	File	IMPAX 6.5.1 directory	Description
	tnsnames.ora.client		Oracle Listener Configuration for clients (only when Oracle Data Guard is configured)
/cache/mvfcache	all files under this directory	/cache/mvf/cache	IMPAX cache—only if the cache directory is physically on the Database Server
/usr/mvf	dg_info	/usr/mvf	Oracle Data Guard cluster information for IMPAX

For example:

cp -r /dbase /*backup_location*

cp -r /usr/oracle/current/dbs/orapw /*backup_location*

cp -r /usr/oracle/current/dbs/initMVF.ora /*backup_location*

cp -r /usr/oracle/current/dbs/spfileMVF.ora /*backup_location*

cp -r /usr/oracle/current/dbs/dr1MVF.dat /*backup_location*

cp -r /usr/oracle/current/dbs/dr2MVF.dat /*backup_location*

cp -r /var/opt/oracle/tnsnames.ora /*backup_location*

cp -r /var/opt/oracle/listener.ora /*backup_location*

cp -r /var/opt/oracle/sqlnet.ora /*backup_location*

cp -r /var/opt/oracle/listener.ora.dg*xx* /*backup_location* where *xx* is the IMPAX version

cp -r /var/opt/oracle/tnsnames.ora.dg*xx* /*backup_location* where *xx* is the IMPAX version

cp -r /var/opt/oracle/tnsnames.ora.client /*backup_location*

cp -r /usr/mvf/dg_info /*backup_location*

cp -r /cache/mvfcache /*backup_location*

20. Removing System DSN entries for Oracle ODBC drivers

(Topic number: 67668)

A Data Source Name (DSN) is the name used by Open Database Connectivity (ODBC) to refer to the system required to access data. The name is used by Internet Information Services (IIS) for a connection to an ODBC data source, such as the Oracle database.

Before upgrading Oracle Server (and changing the Oracle home), remove the existing mvf and mvf_ora DSNs from all Windows-based servers, including any AS300 Archive Servers and Network Gateways, the Application Server, and Curator, but not on the IMPAX Client stations.

To remove System DNS entries for Oracle ODBC drivers

1. On the AS300 server or the Application Server, open the Windows Administrative Tools.
2. Select **Data Sources (ODBC)**.
3. Switch to the **System DSN** tab.
4. Select the **mvf** System Data Source.
5. Click **Remove**.
6. To confirm the removal, click **Yes**.
7. To save the changes and close the dialog, click **OK**.
8. On the Application Server, repeat the previous steps for the **mvf_ora** System Data Source as well.

Upgrading Oracle Server and the IMPAX database data and schema

3

Important!

Only specific IMPAX upgrade paths are supported, and it may not be possible to upgrade certain versions or SUs. More information is provided in *Valid IMPAX upgrade paths* (refer to page 9).

After completing all preparatory tasks, you can proceed with upgrading Oracle Server and the IMPAX database data and schema.

1. Upgrading to Oracle Server 10.2.0.4.2

(Topic number: 6829)

The upgrade-oracle script upgrades Oracle Server from versions 9.2.0.4, 10.1.0.2, 10.2.0.2.0, 10.2.0.3.0, or 10.2.0.4.0 to Oracle 10.2.0.4.2.

You can upgrade Oracle either from the Oracle for Solaris DVD or by creating a repository to work from.

Tip:

If you are upgrading an Oracle Data Guard server, the following procedure does not apply and you can skip ahead to *Upgrading the primary Data Guard server to 10.2.0.4.2* (refer to page 44).

To upgrade to Oracle Server 10.2.0.4.2

1. Log into the Database Server as the **root** user.
2. If using a software repository that is not on the local machine, mount the repository.

   For example, if server1:/updates is the location of the repository, type

   mkdir /software

   mount server1:/updates /software

   Important!

   After mounting the repository, make sure to unmount the directories before proceeding any further. If the directories are not unmounted, the upgrade fails.

3. Change to the **/usr/mvf-mig6/bin** directory.
4. Type **./upgrade-oracle**.
5. To confirm that the latest patches have been applied, type

   $ORACLE_HOME/OPatch/opatch lsinventory
6. Type the path of the Oracle 10.2.0.4.2 software repository.

   For example, type ***/software_repository_path***
7. Type **y** when prompted to upgrade Oracle Server and when prompted to remove the existing Oracle package.
8. Type the path for the Oracle Flashback location.

   The Flashback location defines where backup data is stored.
9. Type the Flashback location size.

The upgrade may take over an hour to complete.

You can ignore the following errors:

- Any error messages regarding `mail: Invalid permissions on /var/mail/oracle`.

  These permissions are corrected during the upgrade.
- `Line 74: cat: cannot open /var/tmp/curver.out`
- `Line 103: ./upgrade-oracle: line 1170: log: command not found`

2. Upgrading the primary Data Guard server to 10.2.0.4.2

(Topic number: 67263)

Important!

This topic applies only when upgrading Oracle Data Guard servers.

Before running the upgrade script, ensure that Oracle has been started on both the primary and standby servers.

The upgrade-oracle-dg script upgrades an Oracle Data Guard server from version 10.2.0.2.0 to 10.2.0.4.2. You can upgrade Oracle either from the Oracle for Solaris DVD or by creating a repository to work from. Information about configuring Oracle Data Guard is available in the *IMPAX 6.5.1 Server Knowledge Base*.

Important!

Before proceeding with this upgrade, run the **check_standby** script on the primary Database Server to ensure that the Data Guard cluster is functioning correctly and that no archive gaps exist between the primary and standby servers. For more information, refer to "Tools for monitoring Oracle Data Guard" (topic number 66589) in the *IMPAX 6.5.1 Server Knowledge Base*.

To upgrade the primary Data Guard server to 10.2.0.4.2

1. Log into the primary Database Server as the **root** user.
2. If using a software repository that is not on the local machine, mount the repository.

   For example, if server1:/updates is the location of the repository, type

   mkdir /software

   mount server1:/updates /software

   Note:

   After mounting the repository, make sure to unmount all the repository directories before proceeding. If the directories are not unmounted, the upgrade fails.

3. Change to the **/usr/mvf-mig6/bin** directory.
4. Type **./upgrade-oracle-dg**.
5. Type the path of the Oracle 10.2.0.4.2 software repository.
6. Confirm that you are upgrading the *Primary Database*.

You can ignore any error messages regarding `mail: Invalid permissions on /var/mail/oracle`. These permissions are corrected during the upgrade.

The upgrade may take over an hour to complete.

Once the upgrade has started, you can begin the standby Database Server upgrade. Both upgrades can run simultaneously.

3. Upgrading the standby Data Guard server to 10.2.0.4.2

(Topic number: 67758)

Important!

This topic applies only when upgrading Oracle Data Guard servers.

Once the upgrade of the primary Database Server has started, you can begin the standby Database Server upgrade. Both upgrades can run simultaneously.

To upgrade the standby Data Guard server to 10.2.0.4.2

1. Log into the standby Database Server as the **root** user.
2. If using a software repository that is not on the local machine, mount the repository.

   Note:

   After mounting the repository, be sure to unmount the directories before proceeding any further. If the directories are not unmounted, the upgrade fails.

3. Change to the **/usr/mvf-mig6/bin** directory.
4. Type **./upgrade-oracle-dg**.
5. Type the path of the Oracle 10.2.0.4.2 software repository.
6. Confirm that you are upgrading the *Standby Database*.

   You can ignore any error messages regarding `mail: Invalid permissions on /var/mail/oracle`. These permissions are corrected during the upgrade.

The upgrade should not take as long as the upgrade of the primary Database Server.

If the `Database "MVF" possibly left running when system went down (system crash?). Notify Database Administrator.` error occurs, you can safely ignore it. The error occurs because the upgrade-oracle-dg script attempts to start the MVF database to check if the configuration is a Data Guard setup or not. The script at this point does not know about the configuration.

4. Incorporating Oracle tablespace enhancements

(Topic number: 6876)

For the database to correctly handle 6.5.1 data, it must be migrated to Locally Managed Tablespaces by using the migrate-to-lmt script.

Note:

The following procedure does not apply to an Oracle Data Guard Database Server.

To incorporate Oracle tablespace enhancements

1. Log into the Database Server as the **oracle** user.
2. Change to the **/usr/mvf-mig6/bin** directory.
3. To run the migrate-to-lmt script, type **./migrate-to-lmt**.

The script takes approximately 15 minutes to complete.

CAUTION!

Try not to interrupt the script while it is running. For example, do not press **Ctrl** + **C** during the process or you may have to restart the entire migration sequence. If necessary, contact Agfa Service for assistance.

5. Increasing the tablespace size on Solaris

(Topic number: 6875)

If required, run the monitor_add script to add 2 GB of MVFL, MVFLINDX, MVF, MVFINDX, and UNDO tablespaces to aid the upgrade process.

Important!

For Oracle Data Guard servers, increase the tablespace size only on the primary Database Server.

To increase the tablespace size on Solaris

1. Log into the Database Server as the **oracle** user.
2. Start the database by typing

   sqlplus / as sysdba

   startup

Note:

If Oracle has already been upgraded, the error *SQL> SP2-0310: unable to open file "/usr/oracle/current/rdbms/admin/dbmspool.sql"* can be ignored, as long as the database is able to start.

3. Start the listener. Type

   lsnrctl start
4. Change to the **/usr/mvf-mig6/bin** directory.
5. To see whether 2–3 GB of space is available for the MVFL tablespaces, type

   /usr/mvf/bin/monitor_update

   /usr/mvf/bin/monitor_stats
6. If additional space is needed, to run the monitor_add script, type

   /usr/mvf/bin/monitor_add
7. To continue, type **C**.
8. Type the tablespace name, **MVFL**.
9. Type the path name for the data file.
10. Type the size of the file in megabytes, **2000**.

    The file is created.
11. Repeat these steps for the MVFLINDX, MVF, MVFINDX, and UNDO tablespaces, substituting the appropriate tablespace name each time.

6. Upgrading the IMPAX database data and schema to IMPAX 6.5.1

(Topic number: 6864)

To upgrade the IMPAX 5.2 or 5.3 database data and schema to IMPAX 6.5.1, run the database-upgrade-script file. As a first step, check your database redo files to ensure that they are of sufficient size.

Checking the database redo files

(Topic number: 58312)

The IMPAX Database Server has three redo logs, each of which is 25 MB, which may not be big enough. If the database to upgrade is large, you can add three or four 100 MB redo logs as a precaution.

Do not add redo logs that are too large, such as 512 MB; otherwise, crash recovery, log archiving, and checkpoint times may increase. Add three to five 100 MB logs, as needed.

Tip:

While the database-upgrade-script is running, to find out whether the current redo log size is big enough, check alert_MVF.log for the frequency of log switching. If it is at the seconds/minute (<10) level, the log size is too small; otherwise, it is fine. Look for “checkpoint incomplete” messages (cannot switch log). If you find them, add redo log files.

To check the database redo files

1. To check the existing redo logs, log in as oracle user and type

   [**oracle@*database_server_name*:/usr/mvf**] **$ sqlplus *dbadmin_user_name*/*dbadmin_password***

   `SQL>` **select GROUP#, MEMBER from v$logfile;**

   This returns the log file locations. You can check their sizes by listing the directory’s contents; for example: [**oracle@*database_server_name*:/usr/mvf**] **$ ls –la /usr/mvf/data/dbase/system**

2. To add more redo logs, log in as oracle user and type

   sqlplus *sysdba_user_name*/*sysdba_password* as sysdba

   For example:

   sqlplus sys/stayoutas sysdba

   `SQL>` **alter database add logfile '/usr/mvf/data/dbase/system/redo04.log' size 100M;**

   ```
   alter database add logfile '/usr/mvf/data/dbase/system/redo04.log' size 100M;
   ```

   Make sure that sufficient disk space exists for this change.

3. Drop the old redo logs.

Note:

For Oracle Data Guard servers, add the redo logs to the primary Database Server. After upgrading, remember to synchronize redo changes from the primary database to the standby database, as described “Synchronizing redo changes from the primary database to the standby database” (topic number 67142) in the *IMPAX 6.5.1 Server Knowledge Base*.

Upgrading the IMPAX 5.2 or 5.3 database data and schema to IMPAX 6.5.1

(Topic number: 58315)

Important!

Only specific IMPAX upgrade paths are supported, and it may not be possible to upgrade certain versions or SUs. More information is provided in *Valid IMPAX upgrade paths* (refer to page 9).

Upgrading the 5.2 or 5.3 database schema to 6.5.1 requires the IMPAX Migration Tools. For Migration Tools installation instructions, refer to the "Installing the IMPAX 6.5.1 Migration Toolbox" section in the *IMPAX 6.5.1 Preparing to Upgrade Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.1*.

During the schema upgrade, a MAP_EVENT_AUDIT.dmp file is created in the /usr/mvf-mig6/data directory. Ensure that there is enough space for this file, upwards of 10 GB depending on the size of the database and the MAP_AUDIT_EVENT table.

CAUTION!

Any customization to the database—such as extra indexes, stored procedures, or triggers—may affect the schema upgrade. We recommend removing such customizations prior to the upgrade.

To upgrade the IMPAX 5.2 or 5.3 database data and schema to IMPAX 6.5.1

1. Log into the Database Server as the **oracle** user.

   Important!

   For Oracle Data Guard servers, upgrade the database data and schema only on the primary Database Server.

2. Start the listener. Type

   lsnrctl start

3. Change to the **/usr/mvf-mig6/bin** directory.

4. Type

   database-upgrade-script [**-v** {**52** | **53**}]

   The following prompt appears:

   ```
   Ready to upgrade database from current system version version-number.
   Do you want to proceed [q to quit]?
   ```

5. Verify that the *version-number* listed is correct—for example, that it says **52** if upgrading from IMPAX 5.2. If so, press **Enter** to continue.

   If the version is not correct, type **q**, then repeat step 4 with the correct version number specified.

6. When prompted for the fully qualified host name of the login server, type the fully qualified host name of the Application Server.

7. When prompted for a report source, refer to *Identifying the report source* in the *Preparing to Upgrade Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5*. The report source is the Connectivity Manager requesting_service value in the mcf_service_request table. If there are multiple values in this field, consult Connectivity Manager support prior to the upgrade.

8. Respond appropriately to any other prompts that appear.

   The database is upgraded.

9. In the IMPAX database, confirm that the values of the requesting_service field match those in the Connectivity Manager (from step 7) by connecting to the database on the IMPAX Database Server; type

sqlplus / as sysdba

select distinct requesting_service from dosr_study;

Or, to connect to the database via isql, type

isql -U mvf -P mvf

select distinct(requesting_service) from dosr_study;

go

Checking the upgrade status

(Topic number: 10196)

After upgrading the database, check the log file to ensure that the upgrade was successful.

Important!

We recommend checking the migration log file after each leg of an upgrade before moving onto the next leg.

To check the upgrade status

1. On the Database Server, log in as the oracle user and open the log file **/usr/mvf-mig6/data/logs/migrate_database_to6.5.log**.

   If the following message appears in the log file, disregard it.

   ```
   E 2010.03.14 11:53:25.972(1)/mig6-database-upgrade table_add:add_sind_default:
   Column PATIENT_ID is indexed, no action is taken.
   ```

2. Ensure that `Migration Complete Successful` appears at the end of the log file.
3. If this message does not appear, something went wrong with the upgrade.
   a. Review the rest of the log file to see where the upgrade failed.
   b. Solve the problem.
   c. Rerun the upgrade script.

7. Upgrading the Oracle Data Guard package

(Topic number: 67662)

Important!

This topic applies only to servers running Oracle Data Guard.

To use Oracle Data Guard, the existing IMPAXoradg package must be removed after an upgrade and replaced with the new version.

For information about configuring Oracle Data Guard, see Configuring Oracle Data Guard.

To upgrade the Oracle Data Guard package

1. Log into the primary Database Server as the **root** user.
2. Change to the IMPAX software repository directory.
3. To remove the existing package, type **pkgrm IMPAXoradg**.
4. Change to the **IMPAX_R6.5.1-build_number** directory.
5. Type **pkgadd -d . IMPAXoradg**.
6. To verify that the upgraded package was installed, type **pkginfo -l IMPAXoradg**.
7. Repeat all previous steps on the standby Database Server.

Upgrading Solaris 10 AS3000 components to IMPAX 6.5.1

4

Important!

If upgrading IMPAX servers on Solaris 9, perform the Upgrading Solaris 9 AS3000 components to IMPAX 6.5.1 tasks instead.

If upgrading IMPAX servers on Solaris 10, run the impax_install script to upgrade the Database Server, AS3000 (Solaris) Network Gateways, and AS3000 (Solaris) Archive Servers to IMPAX 6.5.1. This applies to both single-host and dedicated Database Server configurations.

If you are replacing the existing Database Server with a new server, first back up the database files. After installing the IMPAX 6.5.1 server software on the new server, copy the backed-up database files from the previous release of IMPAX onto the new server (refer to page 62).

1. Installing Solaris 10 patches

(Topic number: 58098)

To download and install Solaris 10 patches, you need a Solaris maintenance agreement and login details, which you can obtain from Oracle.

You must install the Solaris 10 patches recommended by Oracle on all IMPAX servers running Solaris 10.

To install Solaris 10 patches

1. Log into the Solaris support website using your maintenance agreement credentials.
2. Under Patches and Updates, select the **Solaris 10** patch set.

3. Review the Readme file associated with this patch set and make note of the password which is needed to run the installation script.

   Note:

   The latest, most complete patch installation information, including the password needed to run the installation script, is included in the Readme file provided. You must review it.

4. Download the patch file to a directory of your choice, such as the /agfa directory.

   The patch file is called 10_Recommended.zip.

5. Log in as root and change to the directory containing the patch file. (Mount the location, if necessary.)
6. Unzip the patches. Type

   unzip -q 10_Recommended.zip

7. Delete the 10_Recommended.zip file. Type

   rm 10_Recommended.zip

8. Change to the **10_Recommended/** directory.
9. Switch to single-user mode by typing **init s** and providing the root password.

   Important!

   Do not skip this step; doing so can create problems in Solaris.

10. Run the patch installation script. Type

    ./installcluster *password*

    where *password* is the password provided in the Readme file.

11. When the process is complete, reboot the server. Type

    shutdown -y -i6 -g0

12. When the server is restarted, in a browser, go to the Solaris support website again.
13. Under Patches and Updates, select the **J2SE Solaris 10** patch set.
14. Review the Readme file associated with this patch set.
15. Download the patch file to the same directory as the previous patch.

    The patch file is called J2SE_Solaris_10_Recommended.zip.

16. Change to the directory containing the patch file. (Mount the location, if necessary.)
17. Unzip the patches. Type

    unzip -q J2SE_Solaris_10_Recommended.zip

18. To delete the J2SE_Solaris_10_Recommended.zip file, type

    rm J2SE_Solaris_10_Recommended.zip

19. Change to the **J2SE_Solaris_10_Recommended/** directory.
20. Switch to system administrator mode by typing **init s** and providing the root password.
21. Execute the patch installation script. Type

    ./install_cluster
22. When the patch installation is complete, reboot the server. Type

    shutdown -y -i6 -g0

All the patches needed for IMPAX 6.5.1 are now installed.

2. Upgrading a Solaris server to Oracle Client 10.2.0.4.0

(Topic number: 10162)

In a multi-host configuration, you must upgrade the Oracle Client software to version 10.2.0.4.0. Perform this task on all AS3000 Network Gateway and Archive Server machines to be upgraded.

The upgrade-oracle script upgrades Oracle Client to Oracle 10.2.0.4.0 from versions 9.2.0.4, 10.1.0.2, 10.2.0.2.0, or 10.2.0.3.0.

You can upgrade Oracle either from the Oracle for Solaris DVD or a software repository.

To upgrade a Solaris server to Oracle Client 10.2.0.4.0

1. On the server running the Oracle Client, log in as root user and change to the **/usr/mvf-mig6/bin** directory.
2. Type **./upgrade-oracle**
3. When prompted, type the path to the Oracle 10.2.0.4.0 software repository.

   For example, ***/software_repository_path***
4. If the following error message appears:

   ```
   Unable to stop the cron process. Stop it manually as user root in /etc/init.d
   and execute ./cron stop before re-running this script.
   ```

   Manually disable the cron process. As the **root** user, type

   svcadm disable svc:/system/cron:default

   Note:

   Re-enable cron after the upgrade has completed. Type **svcadm enable svc:/system/cron:default**.

The upgrade takes approximately 30 minutes to complete. You can ignore the following warnings:

```
chmod: WARNING: can't access /usr/oracle/current/lib/ libagtsh.so
chmod: WARNING: can't access /usr/oracle/current/lib32/ libagtsh.so
```

3. Verifying that Solaris patches are installed

(Topic number: 60379)

Since Solaris patches have already been installed, confirm that the Sun_rec_patches_installed file (it is a hidden file) exists in the /root partition of all the Solaris servers. When the IMPAX application is being upgraded, the program checks for the existence of this file. If this file is not found, the script requires the user to install the Solaris patches again.

To verify that Solaris patches are installed

1. Log in as the **root** user.
2. Change to the root directory.
3. Type

   showrev -p
4. Check whether the Sun_rec_patches_installed file exists.
5. If the file does not exist, type the following command:

   touch .Sun_rec_patches_installed

4. Upgrading an IMPAX 5.2 or 5.3 on Solaris 10 server

(Topic number: 106220)

Important!

Only specific IMPAX upgrade paths are supported, and it may not be possible to upgrade certain versions or SUs. More information is provided in *Valid IMPAX upgrade paths* (refer to page 9).

You can upgrade an IMPAX 5.2 or 5.3 on Solaris 10 server to IMPAX 6.5.1 by running the *impax_install* script.

Important!

Oracle Data Guard Database Servers should be dedicated Database Servers without any Network Gateway, Archive Server or cache components installed as well.

To upgrade an IMPAX 5.2 or 5.3 on Solaris 10 server

1. To upgrade the Database Server, log into the Database Server as the **root** user.

To upgrade an AS3000 Network Gateway or Archive Server station, from the Database Server hosting the repository, log into the remote station as the **root** user.

2. Navigate to the IMPAX software repository location.
3. At the prompt, type **./impax_install upgrade**.
4. Respond appropriately to all prompts.

   After the upgrade installation process is complete, the bash executable is replaced. After rebooting, logging in is not possible and a "no shell" message appears because the upgrade changes the shell for "root" to /bin/bash.
5. Modify **/etc/passwd** and change the shell for "root" from /bin/bash to **/sbin/sh**.
6. Type the following to clear volatile memory (RAM) to disk and reboot:

   sync ; sleep 10 ; init 6
7. Log into the server as the **root** user.
8. Change to the **/usr/bin** directory and replace the existing bash file with **bash.Solaris9**.
9. Check the log file **/usr/mvf/data/logs/IMPAX_install.log** for any error messages.
10. Repeat this process for any other servers to be upgraded.
11. To start the Oracle database, log in as the **oracle** user and create the spfile from pfile using SQLPlus.
12. Start the Oracle database, type **dbstartmvf**.
13. Start the listener. Type **lsnrctl start**.
14. Recreate the password file mvf.psd. Type **/usr/mvf/bin/create-service-passwords**.
15. Generate the portable password file again (refer to page 151).

5. Testing the AS3000 Database Server upgrade

(Topic number: 60533)

After upgrading the AS3000 Database Server, we recommend performing a quick test to ensure that the upgrade was successful.

To test the AS3000 Database Server upgrade

1. Log into the Database Server as the **oracle** or **service** user.
2. Change to the **/usr/mvf/bin** directory.
3. Type

   ldd mvf-* | grep -i "file not found"
4. Confirm that error messages such as `File not found` do not appear.

   If any of the libraries are missing, contact Agfa support for emergency recovery processes.
5. Verify that CLUI works.

Upgrading Solaris 9 AS3000 components to IMPAX 6.5.1

5

Important!

If upgrading existing IMPAX servers on Solaris 10, perform the *Upgrading Solaris 10 AS3000 components to IMPAX 6.5.1* (refer to page 52) tasks previously described instead.

To complete the upgrade of IMPAX AS3000 stations on Solaris 9, including the Database Server and any Archive Servers or Network Gateways, the servers must be restaged with Solaris 10 and IMPAX 6.5.1.

Before the servers are restaged, the Database Server is shut down again and another cold backup of the database is performed.

After the restaging, the backup of the Oracle database is restored on the newly staged Database Server.

Note:

For Oracle Data Guard Database Servers, both the primary and standby servers must be restaged and have their backups restored.

1. Shutting down the Database Server

(Topic number: 10156)

Run these commands on the Database Server before upgrading the software or restaging the server.

To shut down the Database Server

1. Log into the Database Server as the **mvf** user.

or

When restaging a Database Server already running Oracle 10.2.0.4.2, log in as the **oracle** user.

2. To shut down the database, type

   dbshutmvf

3. To shut down the listener, type

   lsnrctl stop

4. To confirm that all IMPAX and Oracle processes have stopped, type

   psg mvf

   psg ora

   psg tns

5. Verify that, in each of these cases, nothing is returned.

2. Storing a cold backup of the database and other Oracle configuration files

(Topic number: 59281)

Back up the Oracle data and configuration files immediately before the start of the upgrade or restage. This procedure can take a significant amount of time. To estimate how long it will be, check the duration of warm backups as recorded in the /data/logs/backup.log file.

To store a cold backup of the database and other Oracle configuration files

1. If using a NFS share to store the backup, start the NFS service on the server where the backup files will be stored.

   On Solaris 10, type

   su -

   svcadm -v enable -r network/nfs/server

   or

   On Solaris 9, type

   su -

   cd /etc/rc3.d

   ./s15nfs.server start

2. To share the directory that the IMPAX server will be writing to use a Unix text editor such as vi. For example, type

   su -

   vi /etc/dfs/dfstab

3. Add the following line

share -F nfs -o rw,anon=0 *path_to_backup_location_directory*

4. Save and close the file.
5. On the IMPAX server, mount the share as the **root** user. For example, type

   mkdir /*backup_location*

   mount -o rw,bg,hard,rsize=32768,wsize=32768,vers=3,forcedirectio,nointr,suid *server_containing_backup*:*absolute_path_to_backup_location_directory* /*backup_location*
6. As the **root** user, copy the appropriate files to the backup location.

Original directory	File	IMPAX 6.5.1 directory	Description
/dbase	all files under this directory	/dbase	Oracle data files and control files
/usr/oracle/current/dbs or /opt/oracle/current/dbs (if replacing an IMPAX 6.4 or later server)	orapw	/opt/oracle/current/dbs	Oracle password file location
	initMVF.ora		Oracle text initialization parameter file
	spfileMVF.ora		Oracle binary initialization parameter file (only if running Oracle 10.2)
	dr1MVF.dat		Oracle Data Guard configuration file (only when Oracle Data Guard is configured)
	dr2MVF.dat		Oracle Data Guard configuration file (only when Oracle Data Guard is configured)
/var/opt/oracle	tnsnames.ora	/var/opt/oracle	Oracle Naming Configuration
	listener.ora		Oracle Listener Configuration
	sqlnet.ora		Oracle SQLNET Configuration

Original directory	File	IMPAX 6.5.1 directory	Description
	listener.ora.dg*xx*		IMPAX 6.4 or later Oracle Listener Configuration backup
	tnsnames.ora.dg*xx*		IMPAX 6.4 or later Oracle Naming Configuration backup
	tnsnames.ora.client		Oracle Listener Configuration for clients (only when Oracle Data Guard is configured)
/cache/mvfcache	all files under this directory	/cache/mvf/cache	IMPAX cache—only if the cache directory is physically on the Database Server
/usr/mvf	dg_info	/usr/mvf	Oracle Data Guard cluster information for IMPAX

For example:

cp -r /dbase /*backup_location*

cp -r /usr/oracle/current/dbs/orapw /*backup_location*

cp -r /usr/oracle/current/dbs/initMVF.ora /*backup_location*

cp -r /usr/oracle/current/dbs/spfileMVF.ora /*backup_location*

cp -r /usr/oracle/current/dbs/dr1MVF.dat /*backup_location*

cp -r /usr/oracle/current/dbs/dr2MVF.dat /*backup_location*

cp -r /var/opt/oracle/tnsnames.ora /*backup_location*

cp -r /var/opt/oracle/listener.ora /*backup_location*

cp -r /var/opt/oracle/sqlnet.ora /*backup_location*

cp -r /var/opt/oracle/listener.ora.dg*xx* /*backup_location* where *xx* is the IMPAX version

cp -r /var/opt/oracle/tnsnames.ora.dg*xx* /*backup_location* where *xx* is the IMPAX version

cp -r /var/opt/oracle/tnsnames.ora.client /*backup_location*

cp -r /usr/mvf/dg_info /*backup_location*

cp -r /cache/mvfcache /*backup_location*

3. Completing the restaging of the AS3000 stations

(Topic number: 67230)

Important!

This topic applies when upgrading IMPAX stations on Solaris 9 to IMPAX 6.5.1 or restaging existing Solaris 10 servers.

To set up Solaris 10 servers and install and configure IMPAX 6.5.1 on the servers, refer to the instructions in the *IMPAX 6.5.1 AS3000 Installation and Configuration Guide*, specifically the "Setting up a Solaris server", "Creating the Database Server", "Creating the Network Gateway", and "Creating the Archive Server" sections.

To complete the restaging of the AS3000 stations

1. Install and configure the Database Server, restaging it with Solaris 10 and IMPAX 6.5.1.

   Important!

   For Oracle Data Guard Database Servers, both the primary and standby servers must be restaged. Ensure that the directory location for the Flashback area matches that of the old server.

2. Install and configure any other AS3000 servers, such as Archive Servers or Network Gateways.
3. Shut down the Database Server again, stopping all IMPAX and Oracle processes.
4. Restore the database (refer to page 62) by copying all the database files from the previous cold backup to the newly staged Database Server. (For Oracle Data Guard Database Servers, restore the backups on both the primary and the standby servers.)
5. Check and restart the database after restaging (refer to page 65).

   or

   Check and restart the Oracle Data Guard servers (refer to page 66).

4. Copying the backed-up database files to a new or restaged IMPAX 6.5.1 server

(Topic number: 6892)

Important!

This topic applies only if you are replacing the existing server with a new server, or are restaging the existing server.

When replacing the existing server with a new server, or restaging the existing server, first back up the database files (refer to page 58). After installing the IMPAX 6.5.1 server software on the new (or restaged) servers, copy the backed-up database files from the previous release of IMPAX to the new servers, as described in this topic.

CAUTION!

Be very careful not to delete any live database files. Only perform this procedure on a new or restaged Database Server that has not had any clinical use, even as a training server. Do not perform this procedure on *any* production, training, or traveling servers. When files are being copied, take care to preserve file and directory ownership and permissions.

To copy the backed-up database files to a new or restaged IMPAX 6.5.1 server

1. On the new IMPAX 6.5.1 Database Server, stop all IMPAX processes. As the **root** user, type

   stop_impax

2. Stop all Oracle processes. As the **mvf** user or **oracle** user (if running IMPAX 6.4 or later), type

   lsnrctl stop listener

   lsnrctl stop listener_public (for Oracle Data Guard server)

   dbshutmvf

   Note:

   For Oracle Data Guard servers, stop Oracle processes on both the primary and standby servers.

3. Log in as **root** and change to the **/dbase** directory.
4. To remove all the database files in the directory, type

   rm -f data1/*

5. Repeat the previous step for any subdirectories. Be sure to delete only the files—leave the directory structure intact.

6. Restore every file from the backup location. If a backup is stored on a NFS share, first mount the share. As the **root** user, type

   mount -o rw,bg,hard,rsize=32768,wsize=32768,vers=3,forcedirectio,nointr,suid *server_containing_backup*:*absolute_path_to_backup_location_directory* /*backup_location*

   Restore the following files to the indicated IMPAX 6.5.1 directory.

Original directory	File	IMPAX 6.5.1 directory	Description
/dbase	all files under this directory	/dbase	Oracle data files and control files
/usr/oracle/current/dbs or /opt/oracle/current/dbs (if replacing an IMPAX 6.4 or later server)	orapw	/opt/oracle/current/dbs	Oracle password file location
	initMVF.ora		Oracle text initialization parameter file
	spfileMVF.ora		Oracle binary initialization parameter file (only if running Oracle 10.2)
	dr1MVF.dat		Oracle Data Guard configuration file (only when Oracle Data Guard is configured)
	dr2MVF.dat		Oracle Data Guard configuration file (only when Oracle Data Guard is configured)
/var/opt/oracle	tnsnames.ora	/var/opt/oracle	Oracle Naming Configuration
	listener.ora		Oracle Listener Configuration
	sqlnet.ora		Oracle SQLNET Configuration
	listener.ora.dg*xx*		IMPAX 6.4 or later Oracle Listener Configuration backup

Original directory	File	IMPAX 6.5.1 directory	Description
	tnsnames.ora.dg*xx*		IMPAX 6.4 or later Oracle Naming Configuration backup
	tnsnames.ora.client		Oracle Listener Configuration for clients (only when Oracle Data Guard is configured)
/cache/mvfcache	all files under this directory	/cache/mvf/cache	IMPAX cache—only if the cache directory is physically on the Database Server
/usr/mvf	dg_info	/usr/mvf	Oracle Data Guard cluster information for IMPAX

For example:

cp -r /*backup_location*/dbase/* /dbase

cp -r /*backup_location*/orapw /opt/oracle/current/dbs

cp -r /*backup_location*/initMVF.ora /opt/oracle/current/dbs

cp -r /*backup_location*/spfileMVF.ora /opt/oracle/current/dbs

cp -r /*backup_location*/dr1MVF.ora /opt/oracle/current/dbs

cp -r /*backup_location*/dr2MVF.ora /opt/oracle/current/dbs

cp -r /*backup_location*/tnsnames.ora /var/opt/oracle

cp -r /*backup_location*/listener.ora /var/opt/oracle

cp -r /*backup_location*/sqlnet.ora /var/opt/oracle

cp -r /*backup_location*/tnsnames.ora.dg*xx* /var/opt/oracle where *xx* is the IMPAX version

cp -r /*backup_location*/listener.ora.dg*xx* /var/opt/oracle where *xx* is the IMPAX version

cp -r /*backup_location*/listener.ora.client /var/opt/oracle

cp -r /*backup_location*/dg_info /usr/mvf

cp -r /*backup_location*/mvfcache /cache

7. Ensure that all copied files are owned by the oracle user, with the exception of the cache directory, which must be owned by mvf:mitra. To change the ownership, log in as the **root** user, and type

   chown -R oracle:dba *file_or_directory_name*

   For example:

   chown -R oracle:dba /dbase

   chown -R oracle:dba /opt/oracle/current/dbs/orapw

   chown -R oracle:dba /opt/oracle/current/dbs/initMVF.ora

chown -R oracle:dba /opt/oracle/current/dbs/spfileMVF.ora

chown -R oracle:dba /opt/oracle/current/dbs/dr1MVF.ora

chown -R oracle:dba /opt/oracle/current/dbs/dr2MVF.ora

chown -R oracle:dba /var/opt/oracle/tnsnames.ora

chown -R oracle:dba /var/opt/oracle/listener.ora

chown -R oracle:dba /var/opt/oracle/tnsnames.ora.dg*xx* where *xx* is the IMPAX version

chown -R oracle:dba /var/opt/oracle/listener.ora.dg*xx* where *xx* is the IMPAX version

chown -R oracle:dba /var/opt/oracle/tnsnames.ora.client

chown -R oracle:dba /var/opt/oracle/sqlnet.ora

chown -R oracle:dba /usr/mvf/dg_info

5. Checking and restarting the database after restaging

(Topic number: 68248)

Important!

This topic applies when a server has been staged or restaged with IMPAX 6.5.1 on Solaris 10.

Make sure that you have already restored the database (refer to page 62) by copying all the database files from the previous cold backup to the newly staged Database Server.

If checking and restarting an Oracle Data Guard database, skip these instructions and proceed with *Checking and restarting the database after restaging, for Oracle Data Guard* (refer to page 66).

To check and restart the database after restaging

1. Confirm that all restored files have *oracle:dba* ownership.
2. Start the database and confirm that no errors appear.
3. Reboot the Database Server.

6. Checking and restarting the database after restaging, for Oracle Data Guard

(Topic number: 113612)

Important!

This topic applies when a Oracle Data Guard server has been staged or restaged with IMPAX 6.5.1 on Solaris 10.

Make sure that you have already restored the database (refer to page 62) by copying all the database files from the previous cold backup to the newly staged Database Server.

To check and restart the database after restaging, for Oracle Data Guard

1. Start up Oracle on both the primary and standby Database Servers.
   a. As the **oracle** user, type **sqlplus as / sysdba**
   b. At the sql prompt, type **startup mount**
   c. Confirm that there are no errors on the console.
2. Start the listener on both Database Servers.
   a. On the primary server, as the **oracle** user, type

      lsnrctl start listener

      lsnrctl start listener_public
   b. On the standby server, as the **oracle** user, type

      lsnrctl start listener
   c. After a few seconds, to list both the private and public listener processes, type

      psg tns
3. Check the Data Guard configuration.
   a. On the primary server, as the **oracle** user, type

      dgmgrl sys/stayout@mvf1
   b. At the DGMGRL prompt, type

      show configuration
   c. Confirm that SUCCESS is reported.
   d. To quit, type **exit**.
4. Confirm that there are no problems with the standby archive logs. On the primary server, as the **oracle** user, type

   check_standby

5. Confirm that clui can connect to the database. On the primary server, as the **oracle** user, type **clui**
6. To exit clui, type **exit**.
7. Reboot both the primary and standby Database Servers.
8. After the servers have rebooted, start the public listener on the primary server.

Completing the upgrade of Solaris components to IMPAX 6.5.1

6

Some additional tasks must be performed to complete the upgrade of the IMPAX servers on Solaris to IMPAX 6.5.1.

1. Updating odbc.ini after upgrading an AS3000 Network Gateway or Archive Server

(Topic number: 110722)

After upgrading an Oracle Data Guard cluster, update the odbc.ini file on any AS3000 Network Gateway or Archive Server station.

Important!

This update applies only after upgrading an Oracle Data Guard cluster and applies only to AS3000 Network Gateway and Archive Server stations.

To update odbc.ini after upgrading an AS3000 Network Gateway or Archive Server

1. On an AS3000 Network Gateway or Archive Server station, log in as the **root** user.
2. Change to the **/usr/mvf/odbc32v52** directory.
3. In a text editor, open the **odbc.ini** file.
4. In the [MVF] section, update the AlternateServers attribute (it may be initially blank) with the standby server name (a fully qualified domain name may be used). For example:

   ```
   AlternateServers=(Hostname=sopron:PortNumber=1521:SID=MVF)
   ```

5. Save the file and close it.

After updating the file, no reboot is necessary.

6. Repeat the steps for any other AS3000 Network Gateway or Archive Server station.

2. Restarting SMMS server alerts

(Topic number: 58318)

After the database has been upgraded or restored, you can restart SMMS (if applicable).

To restart SMMS server alerts

1. On the SMMS server, double-click the **Enable GSC Notifications** icon.
2. Open the file **C:\agfa\config\emailcmd.cfg** for editing.
3. Change the line `enabled = 'false'` to **enabled** = **'true'**.
4. Save the file and close it.

Alerts can now be sent about the Database Server.

3. Re-enabling IMPAX crontab entries

(Topic number: 58321)

After the database has been upgraded or restored, you can re-enable the IMPAX crontab entries.

To re-enable IMPAX crontab entries

1. Log into the Database Server as the **oracle** or **service** user.
2. To open the crontab file, type **crontab -e**.
3. Locate all entries related to IMPAX that have been commented out.
4. Remove the # marks to re-enable these entries.
5. Save and close the file.

4. Re-enabling archive logging

(Topic number: 60399)

Archive logging was disabled during the Database Server upgrade. Re-enable it after the IMPAX upgrade.

To re-enable archive logging

1. Log into the Database Server as the **oracle** user.

2. Type the following commands:

   ```
   mvf@os1spar:/usr/mvf$ sqlplus /nolog
   SQL> connect /as sysdba
   SQL> shutdown immediate
   SQL> startup mount exclusive
   SQL> alter database archivelog;
   SQL> alter database open;
   SQL>  archive log list;
   SQL> exit;
   ```

Archive logging is enabled.

5. Performing a warm backup of the database

(Topic number: 15588)

After all database data and software are upgraded or restored, reconfigure and perform a warm backup of the database.

To perform a warm backup of the database

1. Log into the Database Server as the **oracle** user.
2. If backing up to tape, record the date on the tape jacket and insert the tape into the tape drive.
3. Change to the **/usr/mvf** directory.
4. To reconfigure the database, type

   configure_backup

   Note:

   You must rerun this command after upgrading from all versions of IMPAX. For more details on using this command, refer to “Configuring backups to disk” (topic number 8904) or “Configuring backups using Flashbackup on Solaris” (topic number 66399) in the *IMPAX 6.5.1 Server Knowledge Base*.

5. Type **runbackup**

The backup may take a significant amount of time.

If you ever need to restore the database from a backup, follow the instructions in the Oracle Server component of the *IMPAX 6.5.1 Server Knowledge Base*.

6. Generating the portable password file

(Topic number: 58324)

When installing IMPAX on the Database Server, the impax_install script uses a passkey utility to save the AgfaService password to a password file: /usr/mvf/mvf.psd. Next the utility creates a *portable* version of this password file: /usr/mvf/mvf.portable.psd.

When installing IMPAX AS3000 Network Gateway or Archive Server software, the IMPAX installation script imports mvf.portable.psd, re-encrypts it using a machine-specific key, and creates the file /usr/mvf/mvf.psd on the target server.

In some cases the mvf.portable.psd file is not available on the Database Server. This does not prevent any of the initial Network Gateway or Archive Server installs, but you must manually generate and import the password key to the target server. This file is also needed by the Curator and Application Server components, and by AS300 Network Gateway and Archive Servers (if used).

To generate the portable password file

1. Log into the AS3000 Database Server as the **root** user.
2. Change to the **/usr/mvf** directory.
3. To export the passkey for installing IMPAX on remote machines, type

   ./bin/passkey -M EXPORT -k *temporary_password*

   where *temporary_password* is a password to be used to import the portable password file later. Use a password that you will remember.
4. To copy the portable password file from the Database Server to the target server, type

   scp /usr/mvf/mvf.portable.psd service@*target_host_name*:/usr/mvf/mvf.portable.psd

   where *target_host_name* is the host name of the server where the password file is needed.
5. When you are finished copying the password file to the target servers, delete /usr/mvf/mvf.portable.psd from the Database Server.

7. Installing license keys on AS3000 servers

(Topic number: 6966)

IMPAX 5.2 or 5.3 server license key files cannot be reused with IMPAX 6.5.1 software. MVF license keys must be installed on each single-host and Network Gateway station. Archive license keys must be installed on each single-host, Archive Server/Network Gateway, and Archive Server station.

If you do not have license keys, you must obtain them from the Agfa Account Manager for each machine on the system. For more information, including details about obtaining the MAC address, refer to "Obtaining Server licenses for Solaris stations" in the *IMPAX 6.5.1 Preparing to Upgrade Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.1*.

Installing the mvf license key on a Solaris server

(Topic number: 58053)

MVF license keys must be installed on each single-host, Archive Server/Network Gateway, and Network Gateway station.

To install the mvf license key on a Solaris server

1. Match up the correct license key with the machine's MAC address.

   The license key name is the MAC address with a .lic file extension.
2. Change to the **/usr/mvf** directory.
3. Copy the license key file to the mvf directory on the hard drive.
4. Rename the license key file to:

   mvf.lic

Installing the archive license key on a Solaris server

(Topic number: 58056)

Archive license keys must be installed on each single-host, Archive Server/Network Gateway, and Archive Server station.

To install the archive license key on a Solaris server

1. Match up the correct license key with the machine's MAC address.

   The license key name is the MAC address with a .lic file extension.
2. Change to the **/usr/mvf** directory.
3. Copy the license key file to the mvf directory on the hard drive.
4. Rename the license key file to:

   mvfarch.lic

8. Installing and starting Compressor

(Topic number: 10168)

If lossy compression was not enabled when IMPAX was installed, and you want to enable it now, you must manually install and start the Compressor Scheduler package on the Database Server (or single-host server). For instructions, refer to "Installing Compressor Scheduler manually on Solaris" (topic number 6969) in the *IMPAX 6.5.1 AS3000 Installation and Configuration Guide*.

The Compressor files are already installed on those systems with the IMPAXmvfc package (such as Network Gateways and Archives); however, Compressor is not actively running and must be manually

started, if required. For instructions, refer to “Starting Compressor manually on Solaris” (topic number 6925) in the *IMPAX 6.5.1 AS3000 Installation and Configuration Guide*.

Upgrading AS300 Archive Server and Network Gateway stations

7

Important!

Only specific IMPAX upgrade paths are supported, and it may not be possible to upgrade certain versions or SUs. More information is provided in *Valid IMPAX upgrade paths* (refer to page 9).

By installing Oracle Client on the servers, AS300 (Windows-based) Archive Servers and Network Gateways can be used with an AS3000 (Solaris) Database Server. This is called a *mixed-host* configuration. All such stations must be upgraded to IMPAX 6.5.1.

1. AS300 Network Gateway and Archive Server upgrade prerequisites

(Topic number: 6739)

Before installing IMPAX 6.5.1 on the Archive Server or Network Gateway stations to be upgraded, ensure that you have done the following:

- Obtained and properly renamed the mvf and mvf archive license keys. Rename the mvf licence file to mvf.lic, and the mvf archive licence key to mvfarch.lic. The installation script copies them under C:\mvf. The license key name is the machine's MAC address with a .lic extension.
- Installed or upgraded all required external software.

- Completed the preparatory tasks described in *Preparing to upgrade* (refer to page 25).
- Upgraded the IMPAX Database Server to IMPAX 6.5.1.
- Copied the mvf.portable.psd file (from the Database Server) to an accessible location. During the installation, the software requests this file and imports the file under C:\mvf.

CAUTION!

The mvf.portable.psd file contains sensitive information. To ensure that the security of the system is maintained, delete the password file after all required components are installed.

2. Uninstalling the previous version of Oracle Client

(Topic number: 65367)

CAUTION!

Serious problems might occur if you modify the registry incorrectly. These problems might require that you reinstall your operating system and there is no guarantee that these problems can be solved. We recommend that you back up the registry before you change it, so that you can back out the changes if necessary.

To export all or part of the registry to a text file

1. To open the Registry Editor, select **Start** > **Run**.
2. In the Run dialog, type **regedit**. Click **OK**.
3. Click **File** > **Export**.
4. In the File Name field, type a name for the registry file.
5. In the Export Registry File dialog, to back up the entire registry, select **All**.
6. Click **Save**.

To retain the correct entries on the tnsnames.ora file, ensure that it is backed up prior to uninstalling Oracle Client. The tnsnames.ora file is in the **C:\oracle\product\10.2.0*client_1*\NETWORK\ADMIN** directory where *client_1* can be any arbitrary name.

If an earlier version of Oracle Client is installed on the system, uninstall that version before installing Oracle 10g Client.

To uninstall the previous version of Oracle Client

1. Select **Start** > **All Programs** > **Oracle - ohome** > **Oracle Installation Products** > **Universal Installer**.
2. Click **Deinstall Products**.

3. In the Inventory dialog on the Contents tab, select the **OraClient10_*home1*** checkbox, where *home1* can be any text.

4. Click **Remove**.
5. In the Confirmation dialog, to confirm the uninstall, click **Yes**.
6. After the uninstall is complete, to close the Universal Installer, click **Close**, then **Cancel**.
7. Open the Windows Administrative Tools and select **Services**.
8. Select the **Distributed Transaction Coordinator** service. If it started, click **Stop** to stop it.
9. From Windows Explorer, delete the ***drive_letter*:\oracle** directory.

   Drive_letter is the name of the drive where Oracle is installed.
10. From Windows Explorer, delete the **C:\Program Files\Oracle** directory.
11. Run regedit and delete the **HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE** key.
12. Restart the computer.

After the server restarts, log into Windows as an administrator-level user.

3. Installing and configuring the Oracle 10g Client for Windows

(Topic number: 6790)

Before installing the Oracle 10g Client, log into the server as a local administrator, and ensure that the network and TCP/IP are properly installed and configured.

Install the Oracle 10g Client software when using the Oracle Database Server, either on Solaris (AS3000) or Windows (AS300), and before connecting to an IMPAX RIS. The Oracle Client software is available for Windows 32-bit systems. It is installed on dedicated Application Servers, dedicated Curators, and dedicated AS300 Network Gateways and Archive Servers.

Important!

Before installing the Oracle Client, disable virus protection software.

To install and configure the Oracle 10g Client for Windows

1. Insert the IMPAX Oracle for Windows 32-bit DVD.

2. From the DVD drive, run **setup.bat**.

   Cygwin is automatically installed before Oracle is.

3. At the `Install Oracle "client" or "server"?` prompt, type **client**.
4. At the `Hostname of the Oracle server [] ?` prompt, type the correct host name of the IMPAX Database Server.
5. At the `What machine is the repository host? [localhost]` prompt, if it is the localhost, press **Enter**. Otherwise, specify the appropriate IP address.
6. At the `Where is the software repository?` prompt, if installing from the DVD drive on F, press **Enter**. Otherwise, type the DVD drive or software repository directory.
7. At the `Where is the temporary work directory? [ C:\cygwin\temp] ?` prompt, click **Enter** to accept the default location. Otherwise, type the directory to use.

   A series of messages appears as Oracle is installed and configured.

8. After the `Oracle installation complete` message appears, restart the server.

When the server restarts, log into Windows as administrator-level user.

Note:

The tnsnames entry is not added to the tnsnames.ora file during the Oracle 10g Client installation. This entry is added after installing the IMPAX AS300 or AS3000 package.

4. Setting up a connection to the Oracle database

(Topic number: 46341)

The Oracle 10g Client (version 10.2.0.4) software installs the drivers and programs required to communicate with the Oracle Server. Ensure that the network and TCP/IP are properly installed and configured.

To set up a connection to the Oracle database

1. If the Net Configuration Assistant is not open, select **Start** > **All Programs** > **Oracle - ohome** > **Configuration and Migration Tools** > **Net Configuration Assistant**.
2. In the Oracle Net Configuration Assistant Welcome dialog, select **Local Net Service Name configuration** and click **Next**.
3. If the Naming Methods Configuration dialog appears, select **Local Naming**. Click **Next**.
4. In the Net Service Name Configuration screen, select **Add**. Click **Next**.
5. In the Service Name field, type **MVF**. Click **Next**.
6. From the list of protocols, select **TCP**. Click **Next**.
7. In the TCP/IP dialog, type the hostname of the Oracle server.
8. Accept the default port number (1521). Click **Next**.

9. Select **Yes, perform a test**. Click **Next**.

   The first time the test runs, you see an error message. Ignore the error.

10. Click **Change Login**.
11. In the Username field, type **mvf**, and type the password for the mvf user.
12. Click **OK**.

    The test is performed again. The connection should be successful.

13. Click **Next**.
14. In the Net Service Name field, ensure that **MVF.world** appears. Click **Next**.
15. If you do not want to add a net service name for RIS, select **No**. Click **Next**.

    or

    To add a net service name for RIS, at the prompt to configure another net service name, select **Yes**. Click **Next**. Then repeat all previous steps using a different service name (for example, qprod), as well as a different host name, login, and net service name (for example QPROD.WORLD).

16. In the Net Service Name Configuration Complete dialog, click **Next**.
17. In the Naming Methods Configuration Complete dialog, click **Next**.
18. To close the Net Configuration Assistant dialog, click **Finish**.

5. Reconfiguring ODBC data source names

(Topic number: 67665)

A Data Source Name (DSN) is the name used by Open Database Connectivity (ODBC) to refer to the system required to access data. The name is used by Internet Information Services (IIS) for a connection to an ODBC data source, such as the Oracle database.

Before upgrading Oracle Server (and changing the Oracle home) on the Database Server, the existing mvf and mvf_ora DSNs were removed from all Windows-based servers (but not on the IMPAX Client stations) and may now need to be reconfigured.

To reconfigure ODBC data source names

1. Open the Windows Administrative Tools.
2. Select **Data Sources (ODBC)**.
3. Switch to the **System DSN** tab.
4. Click **Add**.
5. In the Create New Data Source dialog, select **Oracle in *Oracle_instance_name***

   where *Oracle_instance_name* is the name typed when *Installing and configuring the Oracle 10g Client for Windows* (refer to page 100).

6. Click **Finish**.

7. In the Data Source Name field, type **mvf**.
8. Type a description, if needed.
9. In the TNS Service Name field, type **MVF.world**.
10. In the User Name field, type **mvf**.

    The user ID must be lowercase.
11. To save the changes and close the dialog, click **OK**.
12. To save the new sources and exit the ODBC Data Source Administrator dialog, click **OK**.
13. If reconfiguring the Application Server, repeat the previous steps for the **mvf_ora** DSN as well.

6. Retrieving the portable password file from the target server

(Topic number: 58327)

The portable password file synchronizes passwords between components. The file contains all of the user IDs and passwords for all default IMPAX users.

To retrieve the portable password file from the target server

1. On the server (Application Server, Curator, Network Gateway, or Archive Server), open a command prompt.
2. Type

   scp service@*target_host_name*:/usr/mvf/mvf.portable.psd /cygdrive/c/mvf.portable.psd

   where *target_host_name* is the host name of the Database Server where the portable password was generated.
3. Exit the command prompt.

7. Uninstalling the previous IMPAX software packages

(Topic number: 6744)

If you are upgrading an existing server, before installing the IMPAX 6.5.1 AS300 server packages, uninstall the previous-version IMPAX packages.

To uninstall the previous IMPAX software packages

1. Open Control Panel.
2. Select **Add or Remove Programs**.
3. Under Currently installed programs, select **Agfa IMPAX 5.2 *version*** or **Agfa IMPAX 5.3 *version***.

4. Click **Change/Remove**.
5. When prompted, type your name (minimum three characters). Click **Next**.
6. In the Confirmation dialog, click **OK**.
7. On the Maintenance Complete screen, click **Finish**.
8. Restart the server.

After the server restarts, log into Windows as an administrator-level user.

32-bit AS300 installer packages reference

(Topic number: 7682)

The standard (32-bit) IMPAX AS300 installer groups the packages to install under four sections: default, database, archive, and optional. The following tables explain each package.

Default

Default packages	Purpose
MVFCore	Installs the DICOM services for IMPAX and contains several core Windows services and database tables used by IMPAX.
MVFCache	Installs the DICOM SCU and autopilot services used by IMPAX and spftp services. MVFCache includes mvf_compressor, used for lossy compression, and cache_migration, used to migrate cache volumes from a flat to a hierarchical structure.
MVFNetworkGateway	Installs the SCP and APIP-SCP services used by IMPAX. Install this package only on stations that require Network Gateway functionality. Servers that support only internal transfers, not incoming DICOM communications, do not require it.
AdministrationTools	Installs the Java Administration Tools application for configuring and managing IMPAX. It also copies the Java Runtime Environment (JRE) self-extracting executable onto the system. This package is not available in the 64-bit installer, but must be installed as part of the IMPAX cluster. Therefore, if installing a 64-bit dedicated Database Server under Oracle, be sure to install this package on another AS300 server in the cluster. The package can be installed on more than one server, but run only one instance at a time (by disabling the other Administration Tools services).
MVFocr	Installs the files necessary to enable Optical Character Recognition. This is an optional installation that works in conjunction with the MVFNetworkGateway package. Install it only if your system requires OCR. The OCR package installs default OCR templates to handle many different modality vendors. OCR training tools are not included with IMPAX.

Default packages	Purpose
VaultAgfa	Includes specific requirements and database extensions. Not required on 64-bit systems.

Database

Only one of the two Database Packages can be installed. Install these only on single-host servers or dedicated Database Servers. For new IMPAX standalone installations, only the Oracle Server package is supported.

Database packages	Purpose
Oracle Server Extension	Contains the files necessary to build an Oracle Server database to be used by IMPAX.
SQL Server Extension	Contains the files necessary to build a SQL Server 2008 database to be used by IMPAX. SQL Server 2000 is not supported.

Archive

Archive packages	Purpose
MVFhsm	Installs the HSM package.

Archiving considerations:

- If the server is used for viewing only (no archiving), do not install any archive package.
- PACS Store and Remember archiving is available but does not require an installation package. It does require an archive license. For details on setting up PACS Store and Remember archiving, refer to the *IMPAX 6.5.1 Server Knowledge Base*.

Optional

Depending on the configuration of IMPAX being implemented, certain packages may not be supported.

Optional packages	Purpose
MVFCompressor	Installs the MVF Compressor package, which includes mvf_compressor_scheduler. The mvf_compressor_scheduler process is responsible for scheduling the lossy compression of images.
MVFCurator	Installs the Curator package. The Curator process compresses incoming images into Mitra wavelet format and stores them in the web cache. Studies compressed by the Curator process are served locally or over a network to display clients.
MVFcdexport	Installs the CD Export server, used with the CD Export feature in the IMPAX Client. The CD Export server processes local burn jobs created

Optional packages	Purpose
	by the IMPAX Client and prepares the zip files containing the data for the burn job. For instructions on using CD Export, refer to "Exporting and viewing images from CD or DVD" (topic number 8209) in the *IMPAX 6.5.1 Client Knowledge Base: Extended*.
MVFchangeaccepter	Installs a package related to the processing of change context (cc) objects. This feature is not required and we recommend that this package not be installed.
MVFpap	Installs the PAP package. A PACS Archive Provider (PAP) acts like a Service Class Provider (SCP) by receiving studies and allows sites to have their studies mirrored at another site through PACS Store and Remember archiving. This mirroring protects against data loss and enables studies at one PACS to be viewed at another. For instructions on configuring a PAP, refer to "Configuring a PACS Archive Provider (PAP)" (topic number 11586) in the *IMPAX 6.5.1 Server Knowledge Base*.
MVForadg	Installs a set of scripts and tools for configuring and monitoring Oracle Data Guard. Data Guard is Oracle's high-availability solution. **Important!** Data Guard works **only** on servers running Oracle Enterprise Edition. Do not install it on a database server using SQL Server or Oracle Standard Edition, and do not include it on other types of servers (Archive Server, Network Gateway, Curator, standalone).

8. Installing the IMPAX 6.5.1 AS300 Network Gateway and Archive Server packages

(Topic number: 6782)

To install IMPAX AS300 software, you must be logged into Windows as an administrator-level user.

Important!

When upgrading IMPAX AS300 software, you must be logged into Windows with the same administrator-level user account used during installation.

Use the IMPAX installer to install the necessary packages on the system (refer to page 80).

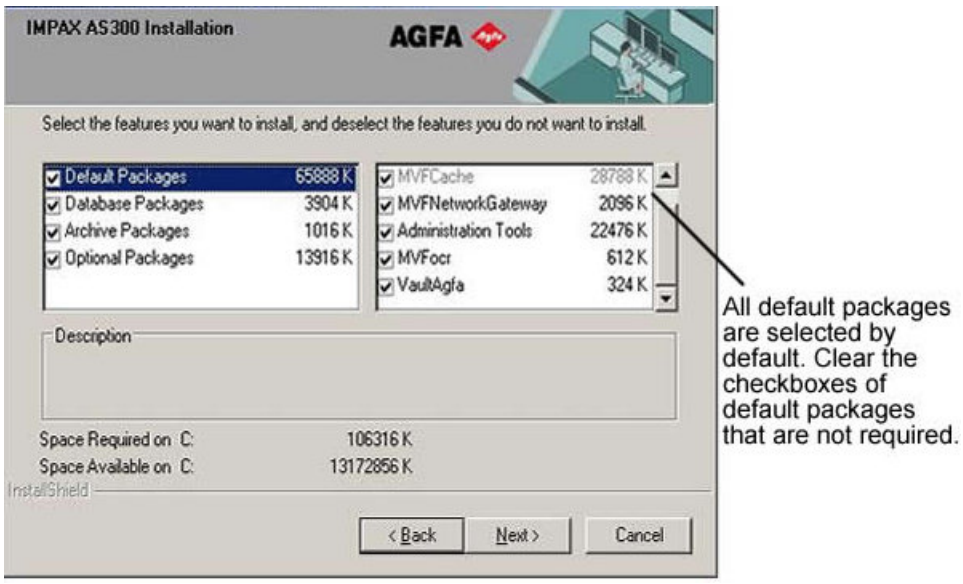
To install the IMPAX 6.5.1 AS300 Network Gateway and Archive Server packages

1. Insert the IMPAX AS300 DVD.
2. Navigate to D:\programs\mvf and double-click **as300-installer.exe**.
3. Type your name (minimum three characters).

   This information is recorded in the installer log file.
4. On the Welcome screen, click **Next**.
5. On the Select features screen, all Default Packages are selected. Clear the checkboxes of any packages that should not be installed.

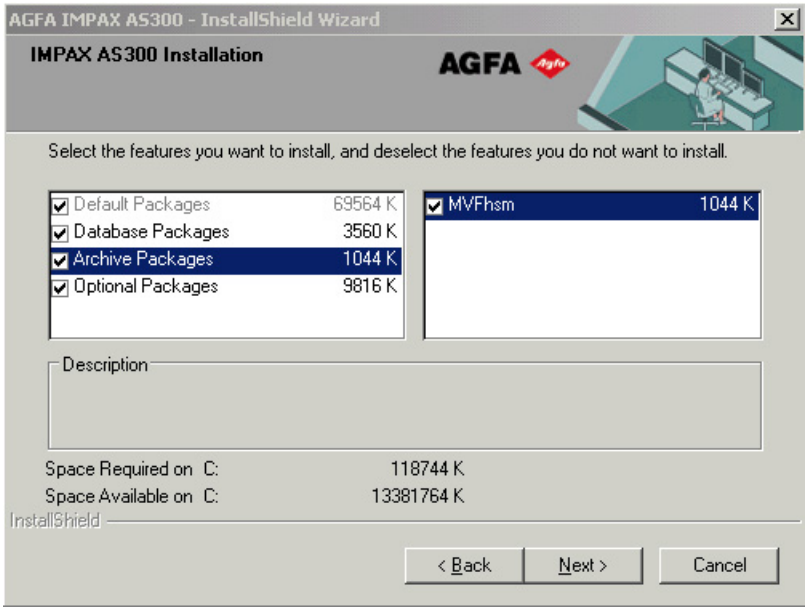
   If installing a Network Gateway or an Archive Server/Network Gateway combination, you can normally leave all the default packages selected.

   If installing a dedicated Archive Server, clear the **MVFNetworkGateway** and **MVFocr** checkboxes.

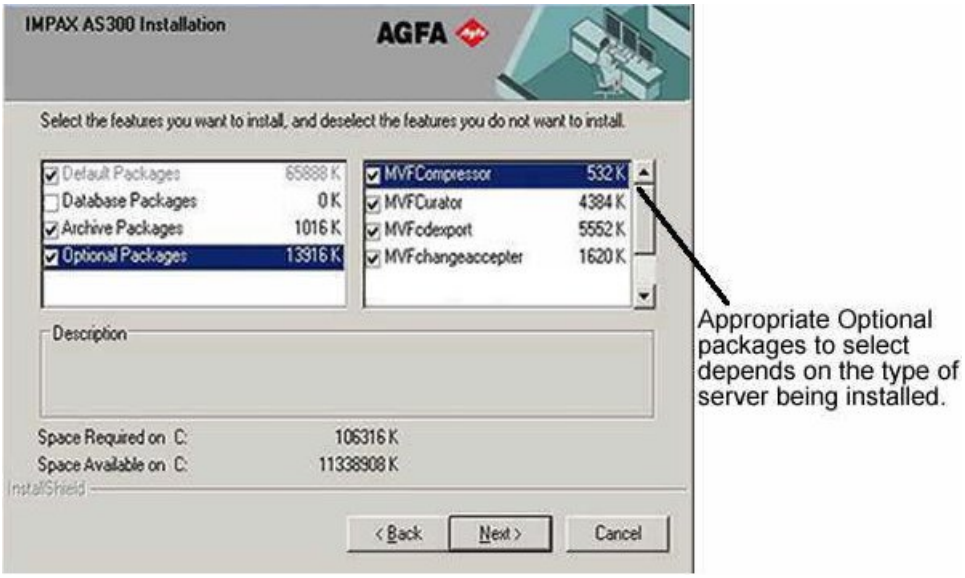


6. Clear the **Database Packages** checkbox.
7. For Archive Servers, select the **Archive Package** label. The MVFhsm is the only archive package listed and is selected by default. If not using an HSM archive, clear the **MVFhsm** checkbox; otherwise, keep it selected.

   For dedicated Network Gateway servers, clear the **Archive Packages** checkbox.



8. Select the **Optional Packages** label.
9. Select any optional packages that should be installed, and clear the other checkboxes.



Unless intending to use this station as a Curator and CD Export server, clear the **MVFCurator** and **MVFcdexport** checkboxes.

MVFCompressor and **MVFPap** may be useful on an Archive Server.

Clear the **MVFchangeaccepter** checkbox.

Do **not** select the **MVForadg** package. This is only for Database Servers using Oracle Data Guard.

10. Click **Next**.

11. If installing a Network Gateway or Archive Server/Network Gateway combination, browse to the location of the MVF license file and click **OK**.

    If the mvf.lic file is not located in C:\mvf, the file is copied to that location. A dialog informs you of the success of the copy task.

12. If installing an Archive Server or Archive Server/Network Gateway combination, browse to the location of the MVF archive license file and click **OK**.

    If the mvfarch.lic file is not located in C:\mvf, the file is copied to that location. A dialog informs you of the success of the copy task.

13. Browse to the location of the portable password file and click **OK**.
14. Type the temporary password used to create the portable password file and click **Next**.

    The mvf.psd file is imported under C:\mvf.

    Important!

    If the mvf.psd file already exists, do not remove it; otherwise, IMPAX services cannot start.

15. On the Summary screen, click **Next**.

    The files are copied.

16. After all the packages have been installed, click **Yes, I want to restart my computer now**.

    If you are not prompted to restart the computer, manually restart it.

After the server restarts, log into Windows as an administrator-level user.

9. Installing and configuring Store and Remember archiving

(Topic number: 15546)

Important!

This topic applies only to an Archive Server or to the Archive component of a single-host server (including standalone with archive and single-server configurations).

Some sites may want to have their studies mirrored at another site through PACS Store and Remember archiving. This mirroring protects against loss of data and allows studies from one PACS to be viewed at another. This can be achieved effectively using the PACS Archive Provider (PAP).

For instruction on installing and configuring a PACS Archive Provider, refer to "Configuring a PACS Archive Provider (PAP)" (topic number 11586) in the *IMPAX 6.5.1 AS300 Installation and Configuration Guide*.

10. Configuring Data Execution Prevention (DEP)

(Topic number: 7192)

Data Execution Prevention (DEP) is on by default for all Windows programs. DEP is designed to help prevent damage from viruses and other security threats by marking some memory locations "non-executable" so that malicious code cannot be executed from memory locations that only Windows and other programs should use. This increased security, however, can cause problems with some programs that require this memory space, including IMPAX. If DEP remains on, you may encounter problems with Curator, ddo_store, or CD burns, among other features.

Note:

To successfully configure DEP, the directory C:\mvf\bin must already exist. Also, not every executable listed in step 7 may appear in the directory.

To configure Data Execution Prevention (DEP)

1. Right-click **Computer** and select **Properties**.
2. Under Tasks in the left pane, select **Advanced system settings**.
3. If not selected, switch to the **Advanced** tab.
4. Under Performance, click **Settings**.
5. Switch to the **Data Execution Prevention** tab.
6. In the Performance Options dialog, select **Turn on DEP for all programs and services except those I select**.
7. For each IMPAX executable in the list that follows, click **Add**, navigate to C:\mvf\bin, select the executable, and click **Open**:
    a. **curator.exe**
    b. **ddo_create.exe**
    c. **ddo_store.exe**
    d. **mvf_scp.exe**
    e. **mvf_scu.exe**
    f. **mvf_compressor.exe**
    g. **mvf_autopilot.exe**
8. Click **OK** and close all open dialogs.
9. Restart the system.

When the server restarts, log into Windows as an administrator-level user.

11. Installing Server license keys on an upgraded AS300 server

(Topic number: 10245)

Note:

IMPAX 5.2 and 5.3 server license key files cannot be reused with IMPAX 6.5.1 software. For information on obtaining license keys, refer to the *IMPAX 6.5.1 Preparing to Upgrade Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.1*.

If you have not already installed the appropriate license keys on the servers, do so now. MVF license keys must be installed on each AS300 single-host and Network Gateway station. Archive license keys must be installed on each AS300 single-host and Archive Server station.

Installing the mvf license key on a Windows server

(Topic number: 40452)

If you have not installed the license key with the software, you can do so afterward by following this procedure.

To install the mvf license key on a Windows server

1. Match up the correct license key with the machine's MAC address.

   The license key file name is the MAC address with a .lic file extension.
2. Open Windows Explorer.
3. Copy the license key file to **C:\mvf**.
4. Rename the license key file to **mvf.lic**.

Installing the archive license key on a Windows server

(Topic number: 15609)

Using PACS Store and Remember archiving (or any other type of archiving) requires that an archive license key be installed on the server.

To install the archive license key on a Windows server

1. Match up the correct license key with the server's MAC address.

   The license key file name is the MAC address with a .lic file extension.
2. Open Windows Explorer.
3. Copy the archive license key to the C:\mvf directory.

4. Rename the license key to **mvfarch.lic**.

Reconfiguring the Application Server and Curator

8

Important!

If you have upgraded AS3000 Server components on Solaris 10 to IMPAX 6.5.1, after the Application Server is reconfigured, the Administration Tools may not launch completely and fail at 50%; if this is the case, reboot the Oracle Database Server and the Application Server, and then relaunch the Administration Tools.

After the Server components are upgraded, you must configure the Application Server to work with the production server instead of the training server and possibly convert the training server into a Curator.

1. Migrating data from the training server

(Topic number: 10200)

If you have configured worklists on the training server during the preparing to upgrade period, you can migrate these from the training server to the production server, instead of having to re-create them.

Taking the training server offline

(Topic number: 10239)

Before migrating data from the training server system, take the system offline.

To take the training server offline

1. On the training server system, launch the Administration Tools and log in as the **service** user.
2. On the Daily tab, select **Job Manager**.
3. Select **All Queues**.
4. Click **Halt Queue**.
5. Monitor each **Transmit** queue and wait for all outgoing jobs to finish.

   You cannot delete jobs in progress.
6. Select each Transmit queue and click **Halt Queue**.
7. To confirm that you want to halt the queue, click **Yes**.
8. To stop and disable all IMPAX services:
   a. Open a command prompt.
   b. Change to the **C:\mvf\bin** directory.
   c. Type **stopall.bat**.
   d. Type **removeall.bat**.
   e. Exit the command prompt.
9. To prevent Client interaction, open the Windows Administrative Tools and select **Services**. Stop the **World Wide Web Publishing Service** (**IIS**).

Backing up the training server database

(Topic number: 10241)

CAUTION!

To mitigate the risk of selecting the wrong database when migrating worklist data and overwriting the training server database data, back up the training server database before migrating data from it.

To back up the training server database

1. Log into the training server as the **AgfaService** user.

   If you do not know the AgfaService password, you can run the passkey utility to find it: **passkey -M QUERY -u AgfaService**.
2. Stop the database by stopping the OracleServiceMVF Windows Service.
3. From the C:\oracle\product\10.2.0\db_1\database directory, copy the **PWDMVF.ora** and **spfileMVF.ora** to a different system.
4. Determine where the data files are located; for example, in E:\data\dbase.
5. Copy the entire **dbase** folder to a different system.

Migrating worklist data

(Topic number: 10206)

Worklists cannot be migrated after the production server goes online - for example, after new worklists have been created on the production server.

Note:

To ensure that failures do not occur, tools like SQLPlus, WinSQL, or Isql cannot be left connected to the MVF database (both the source and target MVF) when the MigrateTRServer tool is in use.

Before migrating worklist data from the training server to the production server, ensure that you have completed the following preparatory tasks:

- Installed the Migration Tools on the Application Server component of the training server cluster
- Created the pre-migration schema on the Database Server component of the training server cluster

These tasks are described in the *IMPAX 6.5.1 Preparing to Upgrade Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.1*.

Note:

This topic assumes that the training server is running Oracle.

To migrate worklist data

1. Log into the production system as the **oracle** user.
2. On the production server, set up an entry for the training server in the tnsnames.ora file. For example, to set up a training server link called mvf_ts.world, add the following to /var/opt/oracle/tnsnames.ora

```
mvf_ts.world =
(DESCRIPTION =
(ADDRESS_LIST =
(ADDRESS = (COMMUNITY = impax.world)(PROTOCOL = TCP)(HOST =
name_of_training_server)(PORT = 1521)))
(
CONNECT_DATA =
(SID=MVF)
))
```

3. Log into SQLPlus as **sysdba** user by typing

sqlplus / as sysdba

4. To create public database link travelling, type

   create public database link travelling using 'mvf_ts.world';

   grant create materialized view to dbadmin;

5. Log into SQLPlus as the **dbadmin** user.
6. To migrate worklists from the training server, type
   @/usr/mvf-mig6/etc/training-server-worklist.sql
7. After the worklists have migrated successfully, clean up the database link and the materialized view permission by logging in to SQLPlus as the **sysdba** user and typing

   drop public database link travelling;

   revoke create materialized view from dbadmin;

   The Application Server caches the ref for the worklists. To update the refs from the migrated worklists, an IISRESET of the Application Server is needed; otherwise, when creating worklists, failures occur. You must be logged in as the local administrator and perform the IISRESET from a command prompt to verify that IIS restarts.

Training server worklist data is now included in the production server database.

Note:

The worklist migration script can be run again. If you choose to rerun the script, missing database entries will be added - no data will be removed from the production database.

2. Retrieving the portable password file from the target server

(Topic number: 58327)

The portable password file synchronizes passwords between components. The file contains all of the user IDs and passwords for all default IMPAX users.

To retrieve the portable password file from the target server

1. On the server (Application Server, Curator, Network Gateway, or Archive Server), open a command prompt.
2. Type

   scp service@*target_host_name*:/usr/mvf/mvf.portable.psd /cygdrive/c/mvf.portable.psd

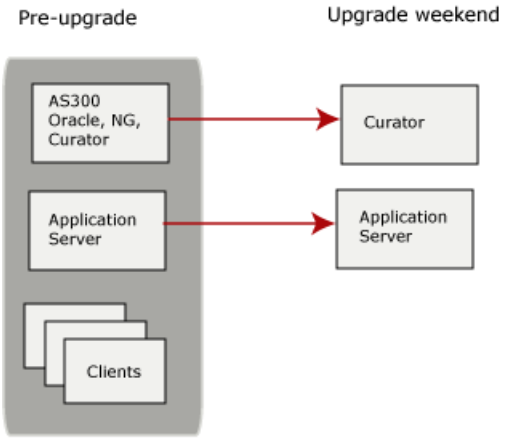
   where *target_host_name* is the host name of the Database Server where the portable password was generated.
3. Exit the command prompt.

3. Reconfiguring the Application Server

(Topic number: 6893)

During the preparing to upgrade period, the station intended to serve as the new Application Server for the site is connected to a temporary AS300 single-host station. (This configuration option is described in the "Installing a training server cluster" section of the *IMPAX 6.5.1 Preparing to Upgrade Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.1*; also refer to the *Training server configurations* diagram that follows.)

Training server configurations



User migrations and configurations are performed on the Application Server (as described in the *IMPAX 6.5.1 Preparing to Upgrade Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.1*) and worklist data can be migrated from the training server (described in *Migrating data from the training server* (refer to page 89)).

After these migrations are complete, reconfigure the Application Server to connect to the production database instead of the training server. A high-level overview of the reconfiguration tasks follows.

To reconfigure the Application Server

1. Change the Oracle Client settings on the station to point to the upgraded 6.5.1 production Database Server (refer to page 94).
2. If applicable, disable the SQL Server connection to the WEB1000 Server (refer to page 95).
3. Import the portable password file from the production 6.5.1 Database Server (refer to page 96).
4. Set the password and account lockout policies (refer to page 96).
5. Connect to a non-queryable RIS (refer to page 97).

   To connect to another type of RIS (local or remote Agfa RIS or a queryable RIS), refer to the *IMPAX 6.5.1 Application Server Installation, Upgrade, and Configuration Guide* or the *IMPAX 6.5.1 Application Server Knowledge Base*.

6. Perform other Application Server configurations that could not be completed during the preparing to upgrade period, such as managing web services, setting up Healthcheck, and managing SSL certificates.

Changing the Application Server Oracle Client settings

(Topic number: 6896)

The Oracle Client software on the Application Server is currently configured for the IMPAX 5.2 or 5.3 AS3000 Database Server and possibly the traveling or training server as well. You now must configure it for the IMPAX 6.5.1 AS3000 Database Server.

To change the Application Server Oracle Client settings

1. Select **Start** > **All Programs** > **Agfa Healthcare** > **Business Services** > **Configuration Tool**.
2. In the IMPAX Business Services Configuration tool, switch to the **Database** tab.
3. In the Database Type area, select **Oracle**.
4. Under Database Connection Settings, in the Oracle Database Server name field, type the name of the 6.5.1 Database Server (MVF.world).
5. Click **Configure ODBC**.
6. In the ODBC Data Source Administrator dialog, switch to the **System DSN** tab.
7. Click **Add**.
8. In the Create New Data Source dialog, select **Oracle in *Oracle_instance_name***.
9. Click **Finish**.
10. In the Data Source Name field, type **mvf_ora**.
11. Type a description, if needed.
12. In the TNS Service Name field, type **MVF.world**.
13. In the **User ID** field, type **mvf**.

    The user ID must be lowercase.
14. Click **Test Connection**.
15. In the Oracle ODBC Driver Connect dialog, type the Service Name **MVF.world**, User Name **mvf**, and Password **mvf**. Click **OK**.
16. When the message `Connection to Oracle database successful` appears, click **OK**.

    If the test fails, verify that the information is correct and test the connection again.
17. To save the changes and close the dialog, click **OK**.
18. Repeat steps 6 to 17 for the *mvf* Data Source Name.
19. To save the new sources and exit the ODBC Data Source Administrator dialog, click **OK**.
20. In the IMPAX Business Services Configuration tool, click **Test**.
21. When the message `Connection to Oracle database successful` appears, click **OK**.

If the test fails, verify that the Oracle Server Name is correct and test the connection again.

22. Click **Apply**.

Reconfiguring ODBC data source names

(Topic number: 67665)

A Data Source Name (DSN) is the name used by Open Database Connectivity (ODBC) to refer to the system required to access data. The name is used by Internet Information Services (IIS) for a connection to an ODBC data source, such as the Oracle database.

Before upgrading Oracle Server (and changing the Oracle home) on the Database Server, the existing mvf and mvf_ora DSNs were removed from all Windows-based servers (but not on the IMPAX Client stations) and may now need to be reconfigured.

To reconfigure ODBC data source names

1. Open the Windows Administrative Tools.
2. Select **Data Sources (ODBC)**.
3. Switch to the **System DSN** tab.
4. Click **Add**.
5. In the Create New Data Source dialog, select **Oracle in *Oracle_instance_name***

   where *Oracle_instance_name* is the name typed when *Installing and configuring the Oracle 10g Client for Windows* (refer to page 100).
6. Click **Finish**.
7. In the Data Source Name field, type **mvf**.
8. Type a description, if needed.
9. In the TNS Service Name field, type **MVF.world**.
10. In the User Name field, type **mvf**.

    The user ID must be lowercase.
11. To save the changes and close the dialog, click **OK**.
12. To save the new sources and exit the ODBC Data Source Administrator dialog, click **OK**.
13. If reconfiguring the Application Server, repeat the previous steps for the **mvf_ora** DSN as well.

Disabling SQL connections

(Topic number: 6888)

If the Application Server is currently connected to a WEB1000 Server station, disable that connection now.

To disable SQL connections

1. Open the Windows Administrative Tools and select **Data Sources (ODBC)**.

2. Switch to the **System DSN** tab.
3. Select the name of the WEB1000 Server.
4. Click **Remove**.
5. When asked to confirm the removal, click **Yes**.

Importing the portable password file to the Application Server

(Topic number: 6877)

You must now import the portable password file generated from the migrated IMPAX 6.5.1 Database Server to the Application Server.

To import the portable password file to the Application Server

1. Select **Start** > **All Programs** > **Agfa Healthcare** > **Business Services** > **Configuration Tool**.
2. In the IMPAX Business Services Configuration tool, switch to the **Security** tab.
3. Click **Import Password**.
4. Navigate to the mvf.portable.psd file and click **Open**.
5. At the prompt, enter the temporary password identified when creating the portable password. Click **OK**.
6. At the confirmation message, click **OK**.
7. Click **Apply**.

CAUTION!

The mvf.portable.psd file contains sensitive information. To maintain the security of the system, delete the password file after all required components are installed.

Setting the password and account lockout policies

(Topic number: 6853)

To perform the user migrations, the password and account lockout policies were disabled. You can now reset these according to the site's IT department policies.

For information on what these policies are and how to reset them, refer to "Setting the password and account lockout policies" (topic number 11372) and "Password and account lockout policies: Reference" (topic number 11366) in the *IMPAX 6.5.1 Application Server Knowledge Base*.

Connecting the Application Server to a non-queryable non-IMPAX RIS

(Topic number: 11343)

A non-queryable RIS supports only one-way communication between the RIS and IMPAX. A non-queryable RIS sends unsolicited HL7 messages for orders and reports to the Connectivity Manager, and the Connectivity Manager parses the HL7 messages and sends them to the IMPAX database for storage. To display the information available from a non-queryable RIS in the IMPAX Client Text area, connect to a non-queryable RIS through the Connectivity Manager.

Note:

To connect to another type of RIS (local or remote IMPAX RIS or a queryable RIS), refer to instructions in the *IMPAX 6.5.1 Application Server Knowledge Base*.

To connect the Application Server to a non-queryable non-IMPAX RIS

1. Configure the custom RIS mappings in Connectivity Manager.
2. Open the Business Services Configuration Tool.
3. Switch to the **Web Services** tab.
4. In the Report Info Sources area, click **Add**.
5. To check the value of the requesting_service field in the Connectivity Manager database, type

   use mcf;

   select distinct requesting_service from mcf_service_request;

   Note:

   If this query returns a single value, make note of it. If this query returns multiple values for the requesting_service field, consult a Connectivity Manager integrator, as mappings may also have to be changed. If this Connectivity Manager receives data from multiple report sources, there may be several requesting_service values that match each report source.

6. In the Edit Report Source dialog, type the requesting_service value returned in the previous step into the Report Source Provider field.

   Note:

   This field is case-sensitive. A maximum of 64 characters can be entered in this field.

7. From the RIS Type list, select **Connectivity Manager Non-Queryable RIS**. Click **OK**.
8. Under Connectivity Manager IP Filtering, in the Grant Access to IP field, type the IP address of the Connectivity Manager and click **Add**.

If the Connectivity Manager uses a proxy server, type the IP address of the proxy server. To specify multiple IP addresses, separate each with a comma.

9. To close the Business Services Configuration Tool, click **OK**.

Performing other Application Server configurations

(Topic number: 6858)

At this point, you can complete any other Business Service configurations you could not complete during the preparing to upgrade period, such as managing web services, setting up Healthcheck, and configuring the image upload server. For details on these configurations, refer to the *IMPAX 6.5.1 Application Server Knowledge Base*.

4. Reconfiguring the Curator

(Topic number: 10172)

For IMPAX 5.2 or 5.3 upgrades, the Curator station has likely been set up as a single-host station, for use as part of the training server cluster during the preparing to upgrade period. In this case, you must uninstall the AS300 software from it, then reinstall the AS300 software with only the Curator packages selected.

If the Curator was not initially set up as a single-host station, you can install Curator now by following the procedures in the *IMPAX 6.5.1 Curator and CD Export Server Installation Guide*.

Uninstalling IMPAX 6.5.1 Server

(Topic number: 7605)

If the Curator station was initially staged as an IMPAX 6.5.1 AS300 single-host station during the pre-upgrade period, change the AS300 software installation to remove the database packages and add the Curator packages.

To uninstall IMPAX 6.5.1 Server

1. Ensure that the training server (the future Curator station) is offline (refer to page 89).
2. Open Control Panel.
3. Depending on the version of Windows, select **Add or Remove Programs** or **Programs and Features**.
4. Under Currently installed programs, select **AGFA IMPAX AS300**.
5. Click **Change**.
6. At the prompt, type your name and click **Next**.
7. At the Welcome dialog, select **Modify**. Click **Next**.
8. Clear the checkboxes of all AS300 packages other than **MVFCore**, **MVFCurator**, and **MVFcdexport**.

Where a single-host Database Server has almost all available AS300 packages installed, a Curator server requires only these three packages.

9. Click **Next**.
10. In the Maintenance Complete dialog, select **Yes, I want to restart my computer now** and click **Finish**.
11. If no longer required on this server, you can also delete any Server license files stored in the C:\mvf directory.

    Licenses are required if the MVFNetworkGateway package is installed, or if the server is being used for archiving (HSM or PACS Store and Remember).

Uninstalling Oracle on Windows

(Topic number: 65064)

Oracle Server is no longer required on the Curator server (though Oracle Client is, if using an Oracle database). Remove the Oracle Server software.

CAUTION!

Serious problems might occur if you modify the registry incorrectly. These problems might require that you reinstall your operating system and there is no guarantee that these problems can be solved. We recommend that you back up the registry before you change it, so that you can back out the changes if necessary.

To uninstall Oracle on Windows

1. Delete the MVF, or mvf_ora, System Data Source Name (DSN).
2. Select **Start** > **Oracle - ohome** > **Oracle Installation Products** > **Universal Installer**.
3. Click **Deinstall Products**.
4. Select **ohome** and click **Remove**.
5. Confirm the removal by clicking **Yes**.
6. When the uninstall is complete, to exit out of the Oracle Universal Installer, click **Close**, then **Cancel**.
7. Reboot the server.
8. If the Distributed Transaction Coordinator Service is running, stop it.

   Perform this step in the Windows Administrative Tools > Services.
9. If the following directories exist, delete them.

   C:\oracle

   C:\Program Files\Oracle

   C:\OracleDatabase (keep only if reinstalling the same version of oracle)
10. Run regedit and delete the **HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE** key.

11. Delete all files in the C:\cygwin\tmp directory.
12. Delete all files in C:\cygwin\var\tmp directory.
13. Delete the **C:\installOracleInfo** file.
14. Restart the server.

When the server restarts, log into Windows as an administrator-level user.

You can now install Oracle Client for Windows (refer to page 100) on this server.

Installing and configuring the Oracle 10g Client for Windows

(Topic number: 6790)

Before installing the Oracle 10g Client, log into the server as a local administrator, and ensure that the network and TCP/IP are properly installed and configured.

Install the Oracle 10g Client software when using the Oracle Database Server, either on Solaris (AS3000) or Windows (AS300), and before connecting to an IMPAX RIS. The Oracle Client software is available for Windows 32-bit systems. It is installed on dedicated Application Servers, dedicated Curators, and dedicated AS300 Network Gateways and Archive Servers.

Important!

Before installing the Oracle Client, disable virus protection software.

To install and configure the Oracle 10g Client for Windows

1. Insert the IMPAX Oracle for Windows 32-bit DVD.
2. From the DVD drive, run **setup.bat**.

   Cygwin is automatically installed before Oracle is.
3. At the `Install Oracle "client" or "server"?` prompt, type **client**.
4. At the `Hostname of the Oracle server [] ?` prompt, type the correct host name of the IMPAX Database Server.
5. At the `What machine is the repository host? [localhost]` prompt, if it is the localhost, press **Enter**. Otherwise, specify the appropriate IP address.
6. At the `Where is the software repository?` prompt, if installing from the DVD drive on F, press **Enter**. Otherwise, type the DVD drive or software repository directory.
7. At the `Where is the temporary work directory? [ C:\cygwin\temp] ?` prompt, click **Enter** to accept the default location. Otherwise, type the directory to use.

   A series of messages appears as Oracle is installed and configured.
8. After the `Oracle installation complete` message appears, restart the server.

When the server restarts, log into Windows as administrator-level user.

Note:

The tnsnames entry is not added to the tnsnames.ora file during the Oracle 10g Client installation. This entry is added after installing the IMPAX AS300 or AS3000 package.

Reconfiguring ODBC data source names

(Topic number: 67665)

A Data Source Name (DSN) is the name used by Open Database Connectivity (ODBC) to refer to the system required to access data. The name is used by Internet Information Services (IIS) for a connection to an ODBC data source, such as the Oracle database.

Before upgrading Oracle Server (and changing the Oracle home) on the Database Server, the existing mvf and mvf_ora DSNs were removed from all Windows-based servers (but not on the IMPAX Client stations) and may now need to be reconfigured.

To reconfigure ODBC data source names

1. Open the Windows Administrative Tools.
2. Select **Data Sources (ODBC)**.
3. Switch to the **System DSN** tab.
4. Click **Add**.
5. In the Create New Data Source dialog, select **Oracle in *Oracle_instance_name***

   where *Oracle_instance_name* is the name typed when *Installing and configuring the Oracle 10g Client for Windows* (refer to page 100).
6. Click **Finish**.
7. In the Data Source Name field, type **mvf**.
8. Type a description, if needed.
9. In the TNS Service Name field, type **MVF.world**.
10. In the User Name field, type **mvf**.

    The user ID must be lowercase.
11. To save the changes and close the dialog, click **OK**.
12. To save the new sources and exit the ODBC Data Source Administrator dialog, click **OK**.
13. If reconfiguring the Application Server, repeat the previous steps for the **mvf_ora** DSN as well.

Setting up the Curator web cache

(Topic number: 7029)

If you did not create a web cache for Curator when you configured the Database Server, create the web cache now. The cache must be created from the Database Server.

Note:

For Autopilot to correctly monitor cache space, each cache must be on its own partition.

Although multiple Curators may be installed, each Curator places web representations of objects into the same web cache. This web cache is owned by the master Curator and is managed by the Autopilot running on the master Curator.

Creating a web cache volume

(Topic number: 7069)

You must manually create cache folders on the system. You can then configure the cache volume in Administration Tools on the Database Server.

To create a web cache volume

1. On the Database Server, log into the Administration Tools.
2. Click **Cache Manager**.
3. Click **New Cache Volume**.
4. Select **Web Cache**.
5. From the Station list, select the station where the master curator is installed.
6. In the Path field, type the path for the new cache volume.
   - Do not use a trailing slash or backslash at the end of the volume path, because this can create problems when retrieving images from the cache. For example, do not type **\\server\WEBCACHE1**; instead, use **\\server\WEBCACHE1**.
   - All caches on the system (image and web) must be shared. Shared caches are specified without the volume letter; for example, instead of **\\server\f$\CACHE1**, use **\\server\CACHE1**.
7. Click **Add**.
8. In the Warning dialog, verify that the path is correct and click **Yes**.

Configuring cache folder permissions for remote caches and NAS

(Topic number: 7068)

If the cache is hosted remotely or if you are setting up network area storage (NAS), after the cache is created, create a user account for the ImpaxServerUser on the system hosting the cache.

To configure cache folder permissions for remote caches and NAS

1. On the Database Server, open a command prompt or terminal window.
2. Change to the **C:\mvf\bin** (AS300) or **/usr/mvf/bin/** (AS3000, logged in as root user) directory.
3. To obtain the password for the ImpaxServerUser, type

passkey -M QUERY -u ImpaxServerUser (AS300) or **./passkey -M QUERY -u ImpaxServerUser**(AS3000)

This password is used for the ImpaxServerUser account on the remote machine.

4. If the remote web cache is hosted on a Windows-based system, log into the machine as an administrator-level user. Using the built-in Windows 2003 Server security configuration, create an account for the ImpaxServerUser that uses the same password as the account on the Database Server.

   If the web cache is hosted on a Solaris-based system, install and configure a subprocess such as NFS or SAMBA.

5. If an ImpaxServerUser account cannot be used on the remote cache but rather a domain user needs to be used, create the domain user and add this user to the ImpaxServerGroup on the IMPAX machines requiring access (for example, the Curator). Update the IMPAX services to log in as this new domain user.

Configuring web cache folder permissions

(Topic number: 7077)

If the Curator web cache is on a Windows folder location, to ensure that the cache is accessible, give the Administrators account and Group account full read, write, and execute permissions on the cache folder.

To configure web cache folder permissions on Windows Server 2003

1. On the Windows 2003 server hosting the cache, open Windows Explorer.
2. Navigate to the location of the cache.
3. Right-click the cache folder and select **Sharing and Security**.
4. Select **Share this folder**.
5. Type an appropriate Share name.
6. Click **Permissions**.
7. Select **Everyone**, then click **Remove**.
8. Click **Add**.
9. In the field for object names, type **Administrators; ImpaxServerGroup**, then click **Check Names**.
10. If the names are not found, click **Advanced**, then click **Find Now**. Select the **Administrators** and **ImpaxServerGroup** accounts and click **OK**.
11. To close the Select Users or Groups dialog, click **OK**.
12. In the Permissions for *share_name* dialog, to give each user full read, write, and execute access to the cache volume folder, select each user and select **Full Control**.
13. Close the permissions and properties dialogs.

To configure web cache folder permissions on Windows Server 2008

1. On the Windows 2008 server hosting the cache, open Windows Explorer.
2. Navigate to the location of the cache.
3. Right-click the cache folder and select **Properties**.
4. Switch to the **Sharing** tab.
5. Click **Advanced Sharing**.
6. Select **Share this folder**.
7. Type an appropriate Share name.
8. Click **Permissions**.
9. Select **Everyone**, then click **Remove**.
10. Click **Add**.
11. In the field for object names, type **Administrators; ImpaxServerUser**, then click **Check Names**.
12. If the names are not found, click **Advanced**, then click **Find Now**. Select the **Administrators** and **ImpaxServerUser** accounts and click **OK**.
13. To close the Select Users or Groups dialog, click **OK**.
14. In the Permissions for *share_name* dialog, to give each user full read, write, and execute access to the cache volume folder, select each user and select **Full Control**.
15. Close the permissions and properties dialogs.

Preparing the web cache

(Topic number: 10178)

Using CLUI, you can prepare the last few weeks of studies, so that recent wavelets are readily available in the Curator web cache. You can do this by date range or based on a list of study references.

Preparing studies within a date range

(Topic number: 58333)

One way to prepare studies in the web cache is to specify them by date range.

To prepare studies within a date range

1. To store all study_refs into variable *a*, in CLUI, type

   save_refs a select study_ref from dosr_study where study_date >= '*start_date*' and study_date <= '*end_date*'

   where the date format to use is *yyyymmdd*; for example, **20080928** for 28 September 2008.
2. To enter menu mode, type **Go menu**.
3. Select **1** for Study Manager.
4. Select **5** for Prepare Study.

5. At the prompt for the list of studies to process, enter **a** to reference the save_refs list of studies.

Preparing studies based on a list of study references

(Topic number: 58336)

Another way to prepare studies for the Curator web cache is to specify them based on study reference.

To prepare studies based on a list of study references

1. In CLUI, specify the files to prepare with this command:

   study prepare *study_ref_1 study_ref_2... study_ref_n*

In both cases, a set of PREPARE jobs is created to be processed over time.

Performing other Curator configurations

(Topic number: 60423)

Depending on site requirements, other Curator configurations may be required, or slave Curators may need to be installed. For details on these, refer to the *IMPAX 6.5.1 Curator and CD Export Server Installation Guide* and the Curator component of the *IMPAX 6.5.1 Server Knowledge Base*.

Completing the upgrade and migration

9

To complete the migration, Clients need upgrading, and various other configurations and upgrades must be performed.

1. Migrating a cache volume from a flat to a hierarchical structure

(Topic number: 102251)

Note:

If upgrading from IMPAX 6.5, the caches may have already been migrated to a hierarchical structure; this task can then be skipped.

Before starting the migration, verify the condition of the caches:

1. Install the MVFcachecheck package.
2. Run the mvf-clean-cache tool.
3. If the mvf-clean-cache output indicates that there are problems, resolve them.

IMPAX stores DICOM objects in cache so that they can be displayed, transmitted to other DICOM devices, and archived. Prior to IMPAX 6.5, the cache structure was flat (each cache volume contained one directory), which limited the cache size because once a certain number of objects are in the directory, access to the cache can become very slow. Large sites may resolve this by deploying numerous cache volumes, which can be difficult to manage.

As of IMPAX 6.5, a hierarchical cache structure is supported for image and web caches, permitting larger cache volumes. The old flat cache structure continues to be supported; only new images arriving in the system or existing images retrieved from archive are written to cache using the

hierarchical structure. However, the cache migration tool allows a site to migrate its existing caches if it would like to immediately take advantage of the hierarchical structure.

Note:

The cache migration tool is included in the MVFCache (Windows) and IMPAXmvfc (Solaris) packages, which are part of the standard IMPAX install packages.

To migrate a cache volume from a flat to a hierarchical structure

1. At a command prompt on the system where the cache volume is local, type

   cache_migration.exe *parameters* (Windows)

   or

   cache-migration *parameters* (Solaris, logged in as mvf user)

   where *parameters* are as follows:

Parameters	Values	Default value
-S	The cache volume to migrate from. If a source_volume_ref is not specified, you are prompted to choose from a list. If the destination volume is different from the source volume, make sure that the source cache volume is closed before running the cache-migration tool. When closed, new images cannot be received by this volume, which will likely be removed after the migration. To close the cache volume, start the CLUI tool and type **cache close *volume_ref***	Not applicable
-D	The cache volume to migrate to. It can be the same as the source volume. There should be enough space in the destination volume for all the studies in the source volume. If a destination_volume_ref is not specified, you are prompted to choose from a list.	Not applicable
-X	***number***—The delay in seconds before the original files are deleted. If not specified, the original files are not deleted. If 0, the original files are deleted immediately.	Not applicable
-F	***number***—The maximum number of cache files to be handled by each thread in the application; a performance-tuning parameter.	`100`
-T	***number***—The number of threads to handle the copying of files; a performance-tuning parameter.	`3`
-I	***number***—How often to report on the progress of the migration, in minutes.	`5`
-f	***log_file***—Log file name.	Not applicable

Tip:

Use the **-?** parameter to view usage or help information.

Example:

```
cache_migration.exe -F 500 -T 4 -I 2 -f migration.log
List of eligible cache volumes
1000 : /cache/mvfcache
1001 : /cache/vcacheRSNA2003
1002 : /cache/newcache
Source volume_ref? 1000
Destination volume_ref? 1000
Delete original files (Y/N)? y
How long to wait to delete (sec)? 10
```

After the migration, verify the condition of the caches:

1. Run the mvf-clean-cache tool.
2. If the mvf-clean-cache output indicates that there are problems, resolve them.

For details about configuring the cache directory structure, see "Configuring the hierarchical cache directory structure" (topic number 102687) in the *IMPAX 6.5.1 Server Knowledge Base*.

2. Configuring the Audit Record Repository database connection

(Topic number: 32237)

After installing or upgrading the database and adding an Audit Record Repository, you must update certain entries in the database to ensure that auditing functions correctly.

To configure the Audit Record Repository database connection

1. On the IMPAX Database Server, open a command prompt or terminal window.
2. Change to the **C:\mvf\bin** (AS300) or **/usr/mvf/bin** (AS3000, logged in as mvf user) directory.
3. Type **clui**.
4. To check if the entry already exists in the database, type

   ```
   select * from map_ini where ini_key='ARR_INSTALLED' and
   ini_section='MAP_EVENT'
   ```

5. If the entry exists, to update the entry, type

   ```
   update map_ini set ini_value='T' where ini_key='ARR_INSTALLED' and
   ini_section='MAP_EVENT'
   ```

   or if the key does not exist, to insert it, type

   ```
   insert into map_ini (ini_section,ini_key,ini_value) values
   ('MAP_EVENT','ARR_INSTALLED','T')
   ```

The Application Server must also be connected to the Audit Record Repository. For details, refer to "Connecting IMPAX Application Server to Audit Manager" (topic number 11444) in the *IMPAX 6.5.1 Application Server Installation, Upgrade, and Configuration Guide*.

3. Synchronizing Windows servers to an external time source

(Topic number: 58717)

Synchronize the Windows Server 2003 and Windows Server 2008 servers on your network to an external time source to ensure that image data streaming operates correctly.

CAUTION!

Serious problems might occur if you modify the registry incorrectly. These problems might require that you reinstall your operating system and there is no guarantee that these problems can be solved. We recommend that you back up the registry before you change it, so that you can back out the changes if necessary.

To synchronize Windows servers to an external time source

1. To open Registry Editor, select **Start** > **Run**, type **regedit**, and click **OK**.
2. To change the synchronization server to NTP, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Parameters\Type** subkey, change the REG_SZ value from NT5DS to **NTP**.
3. To specify if the local machine is a local time server, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Config\AnnounceFlags** subkey, change the REG_DWORD value to **5**.
4. To enable the NTPServer, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\TimeProviders\NtpServer\Enabled** subkey, change the REG_DWORD value to **1**.
5. To specify where the computer obtains time stamps, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Parameters\NtpServer** subkey, enter the list of DNS names or IP addresses.

   If you use DNS names, append **,0x1** to the end of each DNS name.
6. To set the poll interval, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\TimeProviders\NtpClient\SpecialPollInterval** subkey, change the REG_DWORD value to the number of seconds between each poll.

   The recommended value is **900** Base **Decimal**, which polls the time server every 15 minutes.
7. To specify the maximum positive difference that triggers a synchronization, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Config**

MaxPosPhaseCorrection subkey, change the REG_DWORD value to the maximum number of seconds.

The recommended value is **3600** Base **Decimal**.

8. Similarly, to specify the maximum negative difference that triggers a synchronization, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Config\ MaxNegPhaseCorrection** subkey, change the REG_DWORD value to the maximum number of seconds.
9. Exit the Registry Editor.
10. To stop and restart the Windows Time server, at a command prompt, type **net stop w32time && net start w32time**.

    It may take up to an hour for this to take effect.

For more information, refer to the Microsoft Knowledge Base article KB 816042.

4. Upgrading Clients to IMPAX 6.5.1

(Topic number: 10176)

IMPAX Clients, both local and remote, are used to view study images. The Client software can be installed on any appropriate, networked workstation and be used by anyone who has a valid license. At least one Client should be upgraded to IMPAX 6.5.1 for migration testing purposes.

Important!

After upgrading IMPAX, you must enable any scheduled worklists to add them to the IMPAX 6.5.1 Client List area. In the List area, click **Worklists**. In the Active column next to the worklist, select the checkbox for each worklist to display, then press **Enter**. For more details, refer to "Adding worklists to the List area" (topic number 8433) in the *IMPAX 6.5.1 Client Knowledge Base: Extended*.

Manually uninstalling the IMPAX 5.2 or 5.3 Client software

(Topic number: 51525)

IMPAX 5.2 or 5.3 Client software must be uninstalled before the IMPAX 6.5.1 Client software can be installed.

To manually uninstall the IMPAX 5.2 or 5.3 Client software

1. Open Control Panel.
2. On Windows 2003 servers, select **Add or Remove Programs**. On Windows 2008 servers, select **Programs and Features**.
3. On Windows 2003 servers, under Currently installed programs, select **IMPAX Client ES** and click **Remove**.

or

On Windows 2008 servers, select **IMPAX Client ES** and click **Uninstall**.

4. At the `Are you sure you want to remove this program?` prompt, click **Yes**.
5. If a Files Not Removed dialog opens, to remove the remaining files, click **Yes**.
6. At the Uninstall Successful message, click **OK**.
7. Restart the computer.
8. After the computer has restarted, verify that the C:\mvf directory has been deleted. If the directory is still present, delete it.

Removing the IMPAX 5.2 or 5.3 Client Knowledge Base

(Topic number: 58578)

If the IMPAX 5.2 or 5.3 Client Knowledge Base is installed, you must uninstall it before upgrading.

To remove the IMPAX 5.2 or 5.3 Client Knowledge Base

1. Open Control Panel.
2. On Windows 2003 servers, select **Add or Remove Programs**.

   or

   On Windows 2008 servers, click **Programs and Features**.
3. On Windows 2003 servers, select **IMPAX Client Knowledge Base 5.2** or **IMPAX Client Knowledge Base 5.3** and click **Change/Remove**.

   or

   On Windows 2008 servers, select **IMPAX Client Knowledge Base 5.2** or **IMPAX Client Knowledge Base 5.3** and click **Uninstall**.
4. In the Confirmation dialog, click **OK**.
5. If also uninstalling the IMPAX Server Knowledge Base, in the Maintenance Complete dialog, select **No, I will restart my computer later**. Otherwise, select **Yes, I want to restart my computer now** and click **Finish**.
6. If you restarted the computer, log into Windows as an administrator-level user.
7. To remove any translations of the IMPAX 5.2 or 5.3 Client Knowledge Base, delete the **C:/impax/documents/client/translations** directory.

Removing System DSN entries for any Oracle ODBC driver

(Topic number: 57993)

Remove any existing system DSN entries.

To remove the System DSN entries for any Oracle ODBC driver

1. Open the Windows Administrative Tools.

2. Select **Data Sources (ODBC)**.
3. Switch to the **System DSN** tab.
4. Select **MVF**.
5. Click **Remove**.
6. At the confirmation message, click **Yes**.

Uninstalling the Oracle 9.2 Client software on an IMPAX Client workstation

(Topic number: 7993)

Note:

If IMPAX Reporting is integrated, the Oracle Client is required. For details on the required version and installation instructions, refer to the *IMPAX RIS InstallShield Technical Guide*.

You must perform two procedures to remove the Oracle 9.2 Client. First, you must remove the System DSN entries for any Oracle ODBC driver in the ODBC Data Source Administrator (refer to page 111). Second, you must uninstall the Oracle 9.2 Client software.

To uninstall the Oracle 9.2 Client software on an IMPAX Client workstation

1. To open the Universal Installer, click **Setup**.
2. Select **Deinstall Products**.
3. In the Inventory dialog, select **Oracle Homes** > **OraHome92** > **Oracle9i Client 9.*x***.
4. Under Independent Products, select **Java Runtime Environment**, **Oracle Universal Installer**, **and Oracle Snap-In Common Files** and any files under those headings.
5. Click **Remove**.
6. At the confirmation message, click **Yes**.

Oracle 9.2 Client is uninstalled from the workstation.

Installing the IMPAX Client

(Topic number: 7776)

The following explains how to install IMPAX Client using the default InstallShield package. An alternative is to automate the installation through a batch file. For instructions on installing IMPAX Client that way, refer to "Enabling automated installation of the IMPAX Client software from a command prompt" (topic number 7802) in the *IMPAX 6.5.1 Client Installation, Upgrade, and Configuration Guide*.

Note:

To install the IMPAX Client, you must be logged in as a user in a Administrators role that has permissions to the Windows Services.

To install the IMPAX Client

1. From the IMPAX Client CD or the IMPAX Client Installation web page (https://*install_server_name*/clientinstaller/*language_code*), start the IMPAX Client installation program, **IMPAXClientSetup.exe**.

   For information on setting up a Client installation server, refer to "Installing the IMPAX Installation Server" (topic number 7773) in the *IMPAX 6.5.1 Client Installation, Upgrade, and Configuration Guide* or the *IMPAX 6.5.1 Preparing to Upgrade Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.1*.

2. If a File Download dialog appears, click **Open** or **Run**.

   A `Preparing to Install` message appears.

   If on Windows Vista, a cscript.exe prompt may appear. To run it, click **OK**.

3. If a prompt appears about downloading and installing missing components, click **OK**.

4. Follow the prompts to download and install Microsoft .NET Framework 3.5, Microsoft .NET Framework 3.5 SP1, or all.

   Note:

   After installing a component, the installer may stop running or you may receive an `Installation is not yet complete` message. In either case, rerun the IMPAXClientSetup.exe program.

   Depending on network speed, downloading and installing the Microsoft .NET Framework can take over 30 minutes.

   For the .NET Framework 3.5 install, after the download, agree to the installation, accept the license agreement, and after the installation is complete click **OK**. If prompted, restart the computer.

   If you do not have a live Internet connection, the downloading will not work. Instead, install the Microsoft .NET Framework 3.5 from the Client Installer server (https://*install_server_name*/clientinstaller/redist/dotnetfx35.exe).

   For the .NET Framework 3.5 SP1 install, after the download, if prompted to start the installation, click **OK**. If prompted, restart the computer.

5. On the Welcome to the InstallShield Wizard for IMPAX Client screen, click **Next**.

6. On the License Agreement screen, read the license agreement. If you agree, select **I accept the terms in the license agreement**. Click **Next**.

7. To install the application into C:\Program Files\Agfa\IMPAX Client, on the Destination Folder screen, click **Next**.

   or

To install the application to another location, click **Change**. In the Change Current Destination Folder dialog, browse for the directory location to install into and click **OK**. On the Destination Folder screen, click **Next**.

8. On the IMPAX Application Server screen, in the Get or confirm application server name field, type the fully qualified domain name of the Application Server to use. Click **Next**.

   A *fully qualified domain name* is the full name of a system, including its local host name and complete domain name. For example, if the Application Server is called *radserver*, it is on the network domain called *radnet*, and radnet is within the *healthorg.com* domain, the name to type would be *radserver.radnet.healthorg.com*.

9. On the IMPAX Login Type screen, select the appropriate authentication method: Windows, IMPAX, or Smart Card.
   - **Windows Authentication**—Logs into IMPAX using the Windows session credentials after launching the IMPAX Client or logging in with a Windows smart card.
   - **IMPAX Authentication**—Logs into the IMPAX Client separately from Windows. (If unsure of which option to select, use **IMPAX Authentication**.)
   - **Smart Card Authentication**—Logs into the IMPAX Client with a smart card in the **National Health Service (NHS) environment only**.
10. Click **Next**.
11. On the Ready to Install the Program screen, click **Install**.

    The program is installed.
12. On the InstallShield Wizard Completed screen, click **Finish**.

The IMPAX Client software is installed. You do *not* have to restart the computer.

5. Redirecting studies to the production server

(Topic number: 10180)

Important!

This topic applies only when using an AS3000 traveling server as part of the upgrade and migration.

If necessary, you can now configure the modalities to redirect studies to the production server, rather than the traveling server. How studies are redirected is modality-specific and is not documented in this publication.

6. Migrating report data from the traveling server

(Topic number: 10182)

You can now migrate report data from the traveling server to the upgraded production server, if required, by using the MigrateTRServer tool.

Report migration from the traveling server is not required unless the reports were migrated to the traveling server and the Connectivity Manager was sending report updates to the traveling server during the migration weekend.

Note:

To ensure that failures do not occur, tools like SQLPlus, WinSQL, or Isql cannot be left connected to the MVF database (both the source and target MVF) when the MigrateTRServer tool is in use.

Backing up the traveling server database

(Topic number: 10184)

Before migrating report data, back up the traveling server database, to mitigate the risk of selecting the wrong database and overwriting its data.

To back up the traveling server database

1. If backing up to tape, insert the tape into the tape drive.
2. Log into the traveling server as the **mvf** or **service** user.
3. Type

   /usr/mvf/bin/runbackup
4. If backing up to tape, when the database is backed up and the tape is rewound, remove the tape from the tape drive.

Migrating report data

(Topic number: 10186)

When using the MigrateTRSserver utility to migrate Connectivity Manager report data from the IMPAX 5.2 or 5.3 traveling server to the production server, ensure the following:

- Before migrating reports between IMPAX servers, stop the appropriate Connectivity Manager RIS inbound interfaces or outbound report queues to IMPAX.
- Connectivity Manager should be configured to use the migrated IMPAX 6.5.1 server name when the queues are stopped. Any reports in Connectivity Manager report queues fail to store to IMPAX 6.5.1 if they are in the queue with the incorrect server name.

- Do not send live reports into the IMPAX 6.5.1 production system until the report migration from the traveling server to the production server is complete. This utility overwrites all reports.
- This utility requires .NET in order to run. Run the utility from the IMPAX 6.5.1 Application Server, where .NET is installed.

Note:

Reports cannot be migrated after the production server goes online - for example, after new reports have been created on the production server. Report data cannot be migrated from more than one source.

To migrate report data

1. On the production server, set up an entry for the traveling server in the tnsnames.ora file. For example, to set up a traveling server link called mvf_ts.world, add the following to /var/opt/oracle/tnsnames.ora

   ```
   mvf_ts.world =
   (DESCRIPTION =
   (ADDRESS_LIST =
   (ADDRESS = (COMMUNITY = impax.world)(PROTOCOL = TCP)(HOST =
   name_of_training_server)(PORT = 1521)))
   (
   CONNECT_DATA =
   (SID=MVF)
   ))
   ```

2. Log into the production system as the **oracle** user.
3. Log into SQLPlus as the **sysdba** user by typing

   sqlplus / as sysdba
4. To create public database link travelling, type

   create public database link travelling using 'mvf_ts.world';

   grant create materialized view to dbadmin;
5. Log into SQLPlus as the **dbadmin** user.
6. To migrate reports from the traveling server, type

   @/usr/mvf-mig6/etc/travelling-server-reports.sql
7. After the reports have migrated successfully, clean up the database link and the materialized view permission by logging into SQLPlus as **sysdba** and typing

   drop public database link travelling;

   revoke create materialized view from dbadmin;

Traveling server report data is now included in the production server database.

Note:

The report migration script can be run again. If you choose to rerun the script, missing database entries will be added - no data will be removed from the production database.

If you have migrated reports, you must next go to the Application Server, open the Business Services Configuration Tool, switch to the **Web Services** tab, and verify that the Report Info Sources settings are correct. For more information about these settings, refer to "Report source types: Reference" (topic number 11335) and "Modifying the settings of a report source" (topic number 11338) in the *IMPAX 6.5.1 Application Server Knowledge Base*.

Restarting Connectivity Manager queues

(Topic number: 60420)

During the report migration process, the Connectivity Manager queues are stopped.

Once the report migration is confirmed, restart the Connectivity Manager report queue or resume the HL7 message from the RIS or HL7 duplicator.

7. Migrating studies from the traveling server

(Topic number: 10188)

Important!

This topic applies only when using an AS3000 traveling server as part of the upgrade and migration.

Using the Service Tools or CLUI, you can send the studies on the traveling server to the production server.

Transmitting studies using the Service Tools

(Topic number: 60634)

You can use the Service Tools to send the studies on the traveling server to the production server.

To transmit studies using the Service Tools

1. On the traveling server Service Tools, on the Daily tab, click **Study Manager**.
2. Search for studies, and from the results list, select the studies to transmit.
3. Click **Transmit**.
4. In the station dialog, select the production server as the target.
5. Click **Transmit**.

Creating SEND jobs using CLUI

(Topic number: 58345)

To complete the migration of studies from the traveling server, you can create SEND jobs using CLUI.

To create SEND jobs using CLUI

1. In CLUI, specify the list of studies to transfer with the following command:

   study send *study_ref_1 study_ref_2... study_ref_n destination*

   or

   Generate the list of studies to transfer with the following query:

   save_refs a select study_ref from dosr_study where *column* = *constraint*

2. Go to menu mode by typing **go menu**.
3. Select **1** for Study Manager, then **9** for Send.
4. At the prompt for the list of studies to process, enter **a** to reference the save_refs list of studies.
5. At the prompt for the destination, enter the destination.

Post-migration tasks and stabilization

10

Some additional tasks must be performed after the database, the servers, and the Clients are upgraded to IMPAX 6.5.1.

1. Testing the installed software

(Topic number: 6842)

After installing the new version of IMPAX, perform the following tests to verify that the installation was successful.

To test the installed software

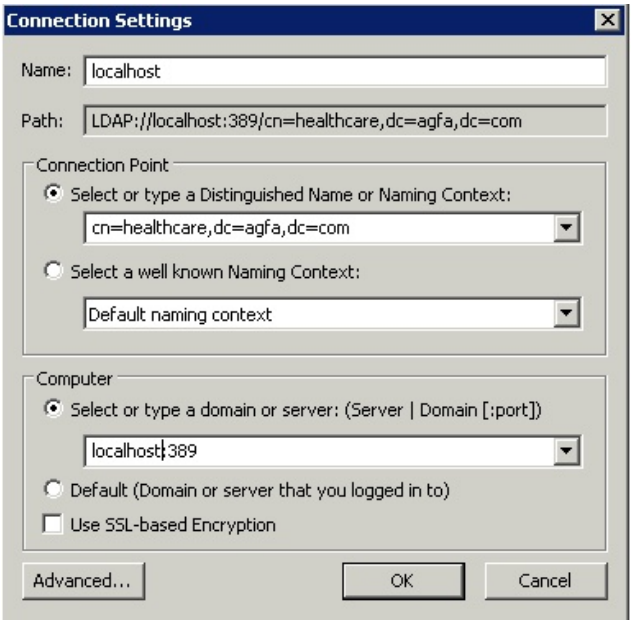
1. Ensure that the user migration was successful.
    a. On the Application Server, if Windows 2003 is the operating system, select **Start** > **All Programs** > **ADAM** and select **ADAM ADSI Edit**

    or

    On the Application Server, if Windows 2008 is the operating system, open the Windows Administrative Tools and select **ADSI Edit**.

    b. On Windows 2003, right-click **ADAM ADSI Edit** and select **Connect To**. On Windows 2008, right-click **ADSI Edit** and select **Connect To**.

    c. On the Connection Settings screen, fill in the values as shown in the following illustration.



d. To close the Connection Settings dialog, click **OK**.

e. Expand **application server node**.

f. Expand **distinguished name**.

g. Select **CN=users**.

h. Verify that the list of original IMPAX 5.2 or 5.3 migrated users is displayed.

2. Ensure that you can log into the IMPAX 6.5.1 software.

   a. On the IMPAX Database Server, run the Administration Tools and ensure that you can log in using the administration password.

   b. On the Application Server, open a web browser and connect to http://localhost. Ensure that the "Welcome to IMPAX" page is displayed.

   c. Run the IMPAX Client and ensure that you can log in using the administration password.

3. Test the status of Web Services by running a Healthcheck.

   a. Open a web browser and navigate to **http://*application_server_name*/AgfaHC.Healthcheck.Escrow/AuthenticationForm.aspx**.

   b. Log in with the administrator user and password.

2. Restarting antivirus software

(Topic number: 9916)

If you have antivirus software installed and have halted any scan jobs, restart the antivirus services.

To restart antivirus software

1. On a Windows server where scanning was stopped, launch the antivirus software.
2. Start the scan operation according to the vendor's instructions.

3. Restarting Connectivity Manager queues

(Topic number: 67610)

If Connectivity Manager is currently deployed, and you have stopped any queues, use the Queue Manager to restart them. Messages in a queue that is stopped are not processed and sit in the queue. Once the queue is restarted, messages are processed.

To restart Connectivity Manager queues

1. In the Connectivity Manager Service Tools, click **Queue Manager**.
2. In the Queue List table, select the checkbox beside the queue of any system device or real world device with a *DM Out* or *impax_report_server* Component.

   The Status of the queue should be Stopped.
3. Click **start**.

   The Status of the queue changes to Started.

4. Taking a post-upgrade system snapshot

(Topic number: 6845)

After upgrading to IMPAX 6.5.1, use the migration_inventory tool to capture the state of the system to compare it with the previous IMPAX system. Perform this task on any computer on which the Migration Tools have been installed that can access the 6.5.1 Database Server.

To take a post-upgrade system snapshot

1. In a command prompt or terminal window, change to the directory containing the migration_inventory tool.
2. On a Windows server, type

   migration_inventory -s -d *database_name* -U *database_user_name* -P *database_password* -D *database_server_host_name*

   On a Solaris server, log in as mvf user and type

   ./migration_inventory -s -d *database_name* -U *database_user_name* -P *database_password* -D *database_server_host_name*

   The output is stored in the migration_info table. It lists the number of IMPAX studies, total objects, and objects in cache. It also lists all IMPAX source stations and DICOM printers.
3. To create a report file with this information, in Windows, type

mig_reporter -t system_inventory_tool

In Solaris, type

./mig-reporter -t system_inventory_tool

This command writes the output of the migration_inventory command to a report file in the /usr/mvf-mig6/reports or C:\mvf\mig6 directory. (For other parameters you can use with this command, refer to the appropriate version of the *IMPAX Preparing to Upgrade Guide*.)

5. Comparing pre- and post-upgrade snapshots

(Topic number: 6895)

Open the report file that contains the pre- and post-upgrade snapshot information. Compare the pre- and post-upgrade information. Ensure that all expected studies, objects, stations, and DICOM printers are still listed.

6. Installing the PSARMT and cache tools on a Solaris server

(Topic number: 40844)

The PSARMT and cache tools are on the AS3000 DVD.

To install the PSARMT and cache tools on a Solaris server

1. Log in as the **root** user.
2. Insert the IMPAX AS3000 DVD.
3. For the cache check and repair tools, navigate to the IMPAX_R6.5-*impax_build_label* directory.
4. To install the cache check and repair tools, type **pkgadd -d IMPAXcchk**.
5. When asked to select packages, to install all packages, press **Enter**.
6. When asked if you want to continue with the installation, type **y**.

   The tools are installed in the /usr/mvf/bin directory.
7. For the PSARMT Migration Tools, navigate to the IMPAX_R6.5-*impax_build_label* directory.
8. To install the PSARMT Migration Tools, type **pkgadd -d IMPAXsrmt**.
9. When asked to select packages, to install all packages, press **Enter**.
10. When asked if you want to continue with the installation, type **y**.

    The tools are installed in the /usr/mvf/bin directory.
11. Remove the IMPAX AS3000 DVD.

7. Running PSARMT to mark studies as PACS archived

(Topic number: 40850)

Important!

If the site does not use an external PACS, you can skip this topic.

The PACS Store and Remember Migration Tools enable a site to migrate from an external PACS system to IMPAX by allowing the external system to act as an archive server to IMPAX.

Run these commands on the upgraded IMPAX Database Server.

For more information regarding the configuration and execution of the PSARMT Migration Tools, refer to the PSARMT readme document, which can be found in the /usr/mvf-mig6 directory.

To run PSARMT to mark studies as PACS archived

1. Log in as the **mvf** or **service** user.
2. Change to the **/usr/mvf/bin** directory.
3. To build the PSARMT database tables in IMPAX, run **build-mvf-psarmt-database**.
4. Specify the migration configuration by running **mvf-psarmt-config-manager**. Parameters are as follows:
   - **-C *configuration_file_with_parameters*** Default is installed as mvf-psarmt.cfg. The attributes of this file are described in the PSARMT readme document.
   - **-R *study_status*** Retries studies with the given status for migration. Possible *study_status* values are conflict (C), error (E), and unknown (U). To retry all at once, specify -R EUC.
   - **-A {STOP | RESTART | KILL}** Performs the specified action command, one of STOP, RESTART, or KILL.
5. Perform the migration, based on the configuration defined in step 4, by running **mvf_psarmt**.

   This tool halts automatically when the migration is complete.
6. Update the missing information in the database from incoming study objects by running **mvf-study-fixer**.

At some later date, when studies are retrieved from the PACS, update the missing information in the database from incoming study object by running **mvf-study-fixer**.

Once the migration is complete and all studies have been fixed by the Study Fixer tool—this may be several months later—the PSARMT services halt automatically.

8. Detecting and correcting IMPAX cache corruption

(Topic number: 40853)

The Cache Check and Repair Tools are used to identify missing cache files and to repair or remove damaged ones. These tools are normally run across all of the cache file systems on the affected server, because files missing from a damaged cache can sometimes be found on another cache. Performance of the tools is hardware-dependent.

Checking the integrity and identity of cache files

(Topic number: 58348)

You can use the cache check and repair tools to check the integrity and identity of cache files against the IMPAX database.

To check the integrity and identity of cache files

1. Log in as the **oracle** user.
2. Change to the location of the cache check and repair tools.
3. Run **mvf-check-cache** ***parameters path_to_cache***

   where *parameters* can be one or more of the following:

   -i *seconds* Interval between display of progress messages. Default is every 10 seconds.

   -g Gentle cache check. Causes the tool to sleep every other second (and take twice as long).

   -m *mv_command_file* Path to the script of the mv commands which move problem files out of the cache directory and to a set of sibling directories on the same file system. Do not run this script on a damaged file system.

   -q A quick check of file existence only, and a simple file size sanity check. Cannot be used with the -m parameter.

For example:

mvf-check-cache -q /cache3/mvfcache

A report and additional diagnostic messages are written to the log file.

Note:

If the cluster has only one local cache, you can invoke the tool without arguments. If the cluster has multiple caches, you must specify the path to the cache on the command line. If a cache is not specified and multiple caches exist, the tool lists the cache paths and exits. Cache files that do not have locations registered in the database are not detected.

Finding files in a cache directory that are unknown to the database

(Topic number: 58351)

Files in the cache directory that contain invalid file name formats or are not registered in the database must be identified and possibly moved to another location.

To find files in a cache directory that are unknown to the database

1. Run **mvf-clean-cache *parameters path_to_cache***

   where *parameters* can be one or more of the following:

   - **-i *seconds***—Interval between display of progress messages on stderr. Default is every 10 seconds.
   - **-g**—Gentle cache check. Causes the tool to sleep every other second (and take twice as long).
   - **-m *mv_command_file***—Path to the script of the mv commands that move problem files out of the cache directory and to a set of sibling directories on the same file system. Do not run this script on a damaged file system.
   - **-v**—Increased verbosity. Causes all progress and report messages to be prefixed with the current date and time.

A report and additional diagnostic messages are written to the log file.

For example, run:

mvf-clean-cache -m move_cmds.sh /cache4/mvfcache

Moving images from a cache directory

(Topic number: 58412)

You can move the images identified by the *mv_command_file*, used to identify problem files.

To move images from a cache directory

1. Run the ***mv_command_file***.

For example, run **move_cmnds.bat**.

Generating a report of lost images

(Topic number: 58357)

This procedure is designed to be run on a server that has suffered damage to one or more cache file systems. This procedure generates a report of studies that contain DICOM object files that have been lost from a server's cache and deregisters the missing files from the database.

To generate a report of lost images

1. Run **mvf-report-loss *parameters report_file_name***

   where ***parameters*** can be one or more of the following:

   - **-i *seconds***—Interval between display of progress messages on stderr. Default is every 10 seconds.
   - **-g**—Gentle cache check. Causes tool to sleep every other second (and take twice as long).
   - **-r**—Run in deregister mode, changing the visible field values from `'C'` to `'F'` and permanently deleting all database locations for missing files. This action cannot be undone. It has no effect if the tool has never been run in marking mode.

Note:

If you omit the -r parameter, the tool runs in marking mode and checks all of the caches on the local server. If a file is missing, the visible field on the osr_location table is set to `'C'`, effectively making the file location "invisible". If a tool is rerun and files have since been restored to cache, the visible field values are set back to `"T"`. This is a default mode.

For example:

mvf-report-loss loss-report.txt

IMPAX system consistency is restored by deregistering missing cache files from the database.

Restoring leftover files to cache

(Topic number: 58360)

After performing a cache check and a cache clean, the leftover files must be restored to the cache. The following procedure analyzes the files to see if they are damaged, duplicates or incorrectly labeled, then restores the good files to the cache.

To restore leftover files to cache

1. Run **mvf-ddo-rescue *parameters files_or_directories_to_restore***

   where *parameters* can be one or more of the following:

   -c Disable DICOM object integrity checking, forcing the tool to assume that the object is valid.

   -i *seconds* Interval between display of progress messages on stderr. Default is every 10 seconds.

   -g Gentle cache check. Causes tool to sleep every other second (and take twice as long).

   -m *mv_command_file* Path to script of mv commands which restores good files by moving them to the cache they are missing from and renaming them as appropriate.

Note:

You can use any number of file and directory arguments. If the argument is a directory, the tool analyzes all the files in that directory and recursively analyzes all files in all subdirectories. At least one file or directory argument is required. Before running the move command script, ensure that you are at the root directory of each cache file system.

For example:

mvf-ddo-rescue -m move_cmds.sh old_lost_and_found

A report and additional diagnostic messages are written to the log file.

Reference: Where restored files are moved

(Topic number: 60216)

If the -m parameter is not used, restored files are moved to directories as follows:

./duplicates_for_deletion/

Valid DICOM files that are identical to (or are hard links to) files currently in cache on this server. Can be deleted.

./different_from_cache/

Valid DICOM files that have the same identification as files currently in cache, but are not identical to the files in cache. Can usually be safely deleted.

./non_local_objects/

Valid DICOM files that the database knows about, but are not currently supposed to be in cache on this server; copies of these files exist elsewhere in the system, on another server or stored in the archive. Can be deleted if there is full confidence in the integrity of the other copies.

./non_dicom_objects/

These files are not in DICOM format or are outside the size range for a DICOM file.

./corrupt_objects/

Damaged DICOM objects. These files have internal format problems or have been truncated. Probably nothing useful can be recovered from these files.

./cannot_identify/

These files may be damaged or they do not contain one of the fields needed to identify a file: SOP Instance UID, Transfer Syntax, Accession Number, Patient ID, and Series Instance UID.

./unregistered_objects/

Valid DICOM files that the database apparently has never heard of. These files failed the tool's identification method, probably because they originally failed HIS verification when received from the modality.

9. Uninstalling the IMPAX Migration Tools from a Windows computer

(Topic number: 47239)

Once all migration tasks and post-migration checks are completed, you must uninstall the IMPAX Migration Tools from all Windows-based computers on which they are installed. This is a legal requirement.

To uninstall the IMPAX Migration Tools from a Windows computer

1. Open Control Panel.
2. On Windows 2003 servers, select **Add or Remove Programs**.

   On Windows 2008 servers, select **Programs and Features**.
3. Select **IMPAX 6.5.1 AS300 Migration 6.5.0.*xxx***

   where *xxx* is the build number.
4. On Windows 2003 servers, click **Change/Remove**. On Windows 2008 servers, click **Uninstall**.
5. In the Confirm File Deletion dialog, click **Yes**.
6. At the Uninstall complete prompt, click **Finish**.

10. Uninstalling the IMPAX Migration Tools from a Solaris computer

(Topic number: 58426)

Once all migration tasks and post-migration checks are completed, you must uninstall the IMPAX Migration Tools from all Solaris-based computers on which they are installed. This is a legal requirement.

To uninstall the IMPAX Migration Tools from a Solaris computer

1. Log in as the **root** user.
2. Type **pkgrm IMPAXmigration**.
3. Type **y** to remove the package.
4. Type **y** again to continue removing the package.

   At the end of the removal process, the message `Removal of <IMPAXmigration> was successful` is displayed.

11. Uninstalling the Cross-Cluster Dictation Interlock tool

(Topic number: 60390)

If you no longer have to synchronize the dictation status of studies between the 5.2 or 5.3 and the 6.5.1 IMPAX systems, you can uninstall the components of the Cross-Cluster Dictation Interlock tool.

To uninstall the Cross-Cluster Dictation Interlock tool

1. On the computer where the 5.2 or 5.3 Cross-Cluster Dictation Interlock components were copied, open the Windows Administrative Tools and select **Services**.
2. Right-click the **MVF Signal Relay** service and select **Stop**.
3. Close the Services window by selecting **File** > **Exit**.
4. Open a command prompt.
5. Change to the **C:\mvf\bin** directory.
6. Type

   mvf_signal_relay.exe -remove
7. Type **clui**.
8. In CLUI, type

   delete from map_ini where ini_section='signal-relay'
9. Exit CLUI by typing **exit**.
10. In Windows Explorer, navigate to C:\mvf\bin and delete the **mvf_signal_relay.exe** and the **install_relay-signal.bat** files.
11. Optionally, you can delete the **signal-relay** and **sig-relay-train** users from the IMPAX 5.2 or 5.3 Service Tools User Manager.
12. On the IMPAX 6.5.1 Application Server where the 6.5.1 Cross-Cluster Dictation Interlock components were copied, open the Windows Administrative Tools and select **Services**.
13. Right-click the **Impax Study Status Relay** service and select **Stop**.
14. Close the Services window by selecting **File** > **Exit**.
15. Open a command prompt.
16. Change to the directory containing the Cross-Cluster Dictation Interlock components—possibly C:\Program Files\Agfa\Impax Business Services.
17. Type

    uninstall_study_status_relay_service.bat.
18. Close the command prompt by typing **exit**.

19. From Windows Explorer, navigate to and delete the **study-status-signal-relay** folder (possibly from C:\Program Files\Agfa\Impax Business Service).
20. Log into an IMPAX 6.5.1 Client as an administrator user.
21. From the Configure area - Users and Roles section, delete the **remote-dictation** user from the Study Status Relay role, then delete the **Study Status Relay** role.

All components of the Cross-Cluster Dictation Interlock tool are now removed.

12. Stopping WEB1000 Data Currency service

(Topic number: 6755)

Important!

This topic applies only to migrations from WEB1000 systems.

Once a site is migrated to IMPAX 6.5.1, the Data Currency service between IMPAX and WEB1000 is no longer supported, so you must stop the service.

Stopping the exhibitSyncNotifier service on a Solaris server

(Topic number: 58431)

To stop WEB1000 Data Currency, you must stop the exhibitSyncNotifier service.

To stop the exhibitSyncNotifier service on a Solaris server

1. Log into the server as the **root** user.
2. Type the following command:

   /usr/mvf/sync/bin/stopExhibSyncNotifierService

The exhibitSyncNotifier service is stopped.

You can also uninstall Data Currency.

Uninstalling Data Currency from an AS3000 server

(Topic number: 58434)

To completely stop the WEB1000 Data Currency service, uninstall it from the server.

To uninstall Data Currency from an AS3000 server

1. Using Administration Tools, stop the PACS notify queue.
2. Log into the server as the **root** user.
3. Change to the **/usr/mvf/sync/bin/** directory.

4. Type the following commands:

   ./stopExhbitSyncNotifierService.

   ./removeSystemDate

   ./removeJobQueue

   pkgrm IMPAXsync

5. To confirm the removal of the package, type **y**.
6. To confirm the uninstall, type **y**.

Data Currency is uninstalled.

13. Removing Client queues from Job Manager

(Topic number: 11640)

IMPAX 6.5.1 no longer supports cached Clients—only cacheless and standalone Clients. You must therefore remove previous Client queues, which are now obsolete, from the Job Manager.

To remove Client queues from Job Manager

1. Retrieve the AE_REF of each cached 5.2 or 5.3 Client station. In CLUI, type

   select ae_ref from map_ae where ae_title = '*DISPLAY_STATION_AE*'

2. Generate a list of cache volumes for that AE. Type

   select * from osr_volume where volume_type = 'C' and ae_ref = *ae_ref_from_step_1*

3. To check if any images exist in those caches, type

   select count(*) from osr_location where volume_ref in (*list_of_volume_refs_from_step_2*)

4. If the count in step 3 is greater than 0, to check that those images exist elsewhere in the system, type

   select location_ref from osr_location ol1 where volume_ref in (*list_of_volume_refs_from_step_2*)

   To check that the images do not exist elsewhere in the system, type

   select location_ref from osr_location ol2 where ol1.object_ref = ol2.object_ref and ol2.volume_ref not in (*list_of_volume_refs_from_step_2*)

5. If images exist elsewhere in the system, delete them from this cache. Type

   update osr_location set visible = 'F' where volume_ref in (*list_of_volume_refs_from_step_2*)

   If images appear that do not exist elsewhere in the system, stop this process and determine whether these images should exist in another cache.

6. Signal the Autopilot and wait until it finishes. Type

   signal WAKE_AUTOPILOT 0 AUTOPILOT

7. Repeat the query in step 3 and once it returns zero, delete the caches. Type

cache remove *volume_ref*

8. Delete the services running on this AE. Type

   go service

   query

   delete *service_refs_for_AE_title*

14. Updating Heartlab polling procedures

(Topic number: 60384)

If integrating with Heartlab software, after the upgrade is completed, enable procedures to poll for Heartlab updates.

To update Heartlab polling procedures

1. On the Database Server, log in as the **oracle** user.
2. Run the following script from sqlplus:

   update map_ini set ini_value = 'T' where ini_key = 'HEARTLAB_ENABLED';

An Oracle job is now created on the Heartlab database server to poll for updates every 5 minutes.

15. Performing other post-migration tasks

(Topic number: 60445)

Complete the following post-migration tasks as required:

- Resend Connectivity Manager reports from the Connectivity Manager reporting queue
- Resume DICOM and reports communication with Connectivity Manager
- Enable Remote Desktop access on servers
- Confirm that the Archive Server is working
- Enable all queues and servers
- Confirm that archive retrieves are working
- Confirm that printing to all DICOM printers is possible
- Confirm that all licenses are valid

Troubleshooting IMPAX A

As you upgrade IMPAX servers, you may encounter various problems.

Troubleshooting: Reports not displaying on the IMPAX Client—no default report source

(Topic number: 120765)

Issue

Reports are not displaying on the IMPAX Clients.

Details

After upgrading to IMPAX 6.5.1 from a version prior to IMPAX 6.3, IMPAX Clients cannot retrieve reports because no default report source is configured. This situation may arise even when a valid report source is specified during the upgrade process.

Solution

On the IMPAX Client, if a user opens a study and the expected report is not displayed, check the Application Server's AgfaHC.Pacs.Web.Services.Log file for error messages that indicate a default report source could not be found. If you find this type of message in the log file, configure a default report source.

1. Log into the Application Server.
2. Select **Start** > **All Programs** > **Agfa Healthcare** > **Business Services** > **Configurator Tool**.
3. Switch to the **Web Services** tab.
4. If the Report Sources Info field contains entries, double-click one of the entries.

   or

If the Report Sources Info field is empty, click **Add**.

5. In the Report Source Provider field, type a name for the report source.
6. From the RIS type list, select the appropriate RIS type.
7. If you selected either Connectivity Manager Queryable RIS or Remote Agfa RIS in the previous step, in the URL field, enter the URL for the queryable RIS or the remote RIS.
8. If **Default Report Source** is not selected, select it.
9. To close the Edit Report Source dialog, click **OK**.
10. Click **Apply**. Click **OK**.

Troubleshooting: Images intermittently not being displayed

(Topic number: 60411)

Issue

Periodically the impax.log file registers aspftp errors reporting `cannot decode ticket contents` and `key not found`.

Details

This problem can occur if the portable password is missing, or if the server clocks are not synchronized.

Solution

1. Import the portable password file from the Database Server onto all cached servers.
2. Confirm that clocks are synchronized (refer to page 109) between the Application Server and all cached servers.

Troubleshooting: Database restores from disk are very slow

(Topic number: 60628)

Issue

Restoring the Oracle database from disk is extremely slow.

Details

When the disks containing the Oracle data files are mounted with the ForceDirectIO option, recovering an Oracle database from disk is extremely slow.

Solution

Perform the following procedure to mount the database without ForceDirectIO:

1. As user root, check to see whether the database is mounted with ForceDirectIO. At a terminal window, type:

   grep 'dbase' /etc/vfstab | grep 'forcedirectio'

   If this command does not return any output, the disks are not mounted with ForceDirectIO and are not the cause of the performance problem.

   But, if this command returns output similar to the following, the /dbase disks are mounted with the ForceDirectIO option:

   ```
   /dev/dsk/c2t5d0s7     /dev/rdsk/c2t5d0s7    /dbase/data1 ufs 2 yes
   forcedirectio
   /dev/dsk/c2t5d3s7     /dev/rdsk/c2t5d3s7   /dbase/index1 ufs 2 yes
   forcedirectio
   /dev/dsk/c2t5d1s7     /dev/rdsk/c2t5d1s7    /dbase/system ufs 2 yes
   forcedirectio
   dev/dsk/c2t5d2s7     /dev/rdsk/c2t5d2s7    /dbase/redo ufs 2 yes
   forcedirectio
   ```

2. Change directory to ensure that you are not in the /dbase directory.
3. To remount the /dbase disks without ForceDirectIO, type

   # mount -o remount,noforcedirectio /dbase/data1

4. Re-enable ForceDirectIO.

CAUTION!

Failure to re-enable ForceDirectIO negatively affects database performance.

Troubleshooting: Reports not displaying on the IMPAX client

(Topic number: 60414)

Issue

Reports are not being displayed, and the report source is listed as UNKNOWN.

Details

This indicates a problem in the report migration.

Solution

Fixing this problems requires updates on several servers.

1. On Connectivity Manager, using ISQL, type the following:

a. **use mcf; select distinct(issuer_of_patient_id) from mcf_patient_id where use_of_patient_id ='PRIMARY' = PrimaryDomain**

b. **select distinct(requesting_service) from mcf_service_request = site_identifier**

Consult Connectivity Manager support if there are multiple values for requesting_service.

2. On the Database Server, using CLUI, type the following:

a. **select distinct(domain_id) from agfahc_patient_id = *PrimaryDomain***

where *PrimaryDomain* matches the value used on Connectivity Manager.

Note:

In IMPAX, other domain_id values may exist for the global or alternate domains. Updates may be required in order to match the domain_id for the primary domain patient_ids to the Connectivity Manager's issuer_of_patient_id values for the PRIMARY use_of_patient_id.

b. **select requesting_service from dosr_study where accession_number='xxxxxxx' = *site_identifier***

The requesting_service value should match the Connectivity Manager site_identifier. Updates may be required in order to match the requesting_service to the Connectivity Manager requesting_service for reports associated with the specific report source.

Tip:

Use the accession_number of a study that is approved and was completed before the Broker to Connectivity Manager migration.

3. On the Application Server, using the Business Services Configuration tool:

a. Switch to the **Web Services** tab.

b. Under Report Information Sources, click **Add**.

c. In the Non-Queryable RIS Report Source Provider field, type the same *site_identifier* user previously.

d. Click **Apply**, and **OK**.

4. On the Database Server, using CLUI, type the following:

select * from agfahc_report_access_config

5. Verify that the Report Source is configured the same as in the Application Server.

6. Set the IMPAX Client to DEBUG mode and search for **ReportQuery,QueryReport: Checking for report on**.

Troubleshooting: Cannot reboot with the init 6 command

(Topic number: 6897)

Issue

When the **impax_install upgrade** finishes, you are prompted to reboot the machine by running **init 6**. This command does not reboot the machine; it appears to hang during shutdown.

Details

This problem is caused by a process stuck in a low level i/o request waiting for the kernel to receive an interrupt or dma transfer to complete. The kernel puts a process on a channel wait queue, waiting for an interrupt until the i/o is complete. If a disk never completes an i/o due to a hardware error, it does not go on the run queue to service the interrupt and become killable.

This state can be invoked by:

- Direct-attached disk or disk cabling errors causing an i/o to not complete.
- NFS synchronous i/o, where the network connection has failed.
- The console i/o and the master console (which may be typically a physical console or serial port) being disconnected. Console i/o is always direct and synchronous for security reasons and the lack of console i/o causes auditing problems.

Solution

Contact your Agfa HealthCare Support representative for assistance.

Troubleshooting: Oracle Server upgrade fails due to mounted repository

(Topic number: 68114)

Issue

After mounting the Oracle software repository, the Oracle Server upgrade script (upgrade-oracle or upgrade-oracle-dg) fails with the following error:

```
Error: /tmp/Oracle10.2.0.1.0/runInstaller exited with an error, exiting.
Error: Oracle installion (sic) failed, exiting.
There were problems installing Oracle Server. Please correct any problems
before re-running this script.
```

Details

The upgrade script fails if the mounted repository is not unmounted prior to running the script.

Solution

Refer to the following lines in the /var/sadm/Oracle_install.log file:

```
Error: OUI cannot be launched because the current working directory is set on
 the CD-ROM mount point.
Launching OUI from this directory will make it difficult to unmount the disk
later in the installation.
Please change the working directory and relaunch OUI. You can change the working
 directory by typing 'cd' (e.g. cd /home) and then execute the 'runInstaller'
 command by typing its full path (e.g. /mnt/cdrom/runInstaller)
Error: /tmp/Oracle10.2.0.1.0/runInstaller exited with an error, exiting.
Error: Oracle installion (sic) failed, exiting.
```

Troubleshooting: This is not a Data Guard configuration error message

(Topic number: 99770)

Issue

After running the upgrade-oracle-dg script which upgrades an Oracle Data Guard server, it fails with the following error:

```
This is not a Data Guard configuration. Please run upgrade-oracle instead.
```

Details

The message may be misleading; the upgrade script fails if Oracle has not been started on the primary and all standby Data Guard servers.

Solution

Ensure that Oracle has been started on the primary as well as all standby Data Guard servers.

Troubleshooting: After upgrading and rebooting, Oracle fails to start

(Topic number: 6907)

Issue

After running the impax_install upgrade script and rebooting, Oracle fails to start.

Details

This failure occurs when no semaphore allocation settings appear in /etc/system.

Solution

As user **root**, check for the following lines in the /etc/system file. If they do not exist, add them to the file and reboot.

```
*** Begin Oracle requirements ***
set shmsys:shminfo_shmmax=4294967295
set shmsys:shminfo_shmmni=100
set shmsys:shminfo_shmseg=10
set shmsys:shminfo_shmmin=1
set semsys:seminfo_semmni=100
set semsys:seminfo_semmns=2048
set semsys:seminfo_semmsl=256
set semsys:seminfo_semvmx=32767
set noexec_user_stack=1
*** End Oracle requirements ***
```

Troubleshooting: IMPAXarmr entries are missing after upgrading

(Topic number: 6879)

Issue

After running the impax_install upgrade script, IMPAXarmr entries are missing from the /etc/system file.

Details

The missing IMPAXarmr entries occur after upgrading to IMPAX 6.5.1 from a site that does not already have armoring installed. As a result, auditing information is not tracked. This does not affect machine security itself, but attempts to exploit the stack buffer overflow are not logged. This occurs only on the Database Server, and only when using Solaris 9. More information is available in *Understanding Solaris armoring* (refer to page 149).

Solution

The workaround is to add the following lines to the /etc/system file, as user root, before rebooting:

```
*** Begin IMPAXarmr modifications ***
set noexec_user_stack=1
set noexec_user_stack_log=1
*** End IMPAXarmr modifications ***
```

Troubleshooting: Import of portable password file failed during upgrade

(Topic number: 61095)

Issue

The portable password file was not available on the Database Server when the AS3000 Archive Server or Network Gateway was installed, so the AgfaService ID password file failed to import properly on these servers.

Details

Whenever the import of mvf.portable.psd to the target server fails during an installation, you see the following log message indicating that the required password file is not on the Database Server:

```
The AgfaService ID password file failed to import properly. You will
need to import the password file manually.
```

Solution

The Network Gateway or Archive Server upgrade completed successfully (unless other log messages indicate otherwise), but you must manually import the password key to the target server. Instructions on generating the portable password file are available in *Generating the portable password file* (refer to page 71).

To import the portable password file locally to the target server

1. Log into the target Network Gateway or Archive Server as **root**.
2. To import the portable password file, type

   /usr/mvf/bin/passkey -M IMPORT -k *temporary_password*

   where *temporary_password* is the password you gave when exporting the portable password file.

   This reads the mvf.portable.psd file, re-encrypts it using a machine specific key, and creates the local /usr/mvf/mvf.psd file.
3. To restrict permissions on the newly created mvf.psd file, type

   chmod 640 /usr/mvf/mvf.psd
4. Delete /usr/mvf/mvf.portable.psd from the target server.

CAUTION!

The mvf.portable.psd file contains sensitive information. To maintain the security of the system, delete the portable password file from all locations after all required components are installed.

Troubleshooting: IMPAX Client slow and erratic post-upgrade

(Topic number: 10210)

Issue

After upgrading, IMPAX Client display is very slow at a site using McAfee Antivirus software.

Details

A McAfee Antivirus setting called Buffer Overflow Protection (BOP) can cause this behavior.

Solution

Disable BOP in McAfee. Alternatively, use McAfee EPO or Protection Pilot to reconfigure the BOP to run only at fixed intervals, such as every five minutes.

IMPAX 5.2 tables obsolete in IMPAX 6.5.1

B

Some of the entries in the IMPAX 5.2 and 5.3 database tables have become obsolete in the IMPAX 6.5.1 database.

Obsolete tables in WSQL

(Topic number: 55025)

Table name	Module name
mitra_voice_command_keywords	activex-voice
mitra_display_pinned_studies	display-sql
mitra_display_special_format	display-sql
mitra_display_config	display-sql
mitra_ae_config	display-sql
mitra_display_markup_text	display-sql
mitra_display_modality_config	display-sql
mitra_display_worklist	display-sql
mitra_user_calibration	display-sql
mitra_display_modality_toolbar	display-sql
mitra_display_hanging_protocol	display-sql

Table name	Module name
mitra_display_site_hanging	display-sql
mitra_display_toolbar_buttons	display-sql
mitra_display_format	display-sql
mitra_display_user_wizards	display-sql
mitra_display_wizards	display-sql
mitra_display_site_wizards	display-sql
mitra_display_priv_wizards	display-sql
mitra_lut_tables	display-sql
mitra_display_snapshot	display-sql
mitra_display_mpr_vr_presets	display-sql
mitra_display_ordering	display-sql
mitra_display_study_sorting	display-sql
mitra_display_xml_config	display-sql
mitra_display_wizard_state	display-sql
mitra_display_echo_values	display-sql
mitra_display_echo_data	display-sql
jselect_data_dictionary	mvf-jselect-sql
jselect_user_script_button	mvf-jselect-sql
mitra_select_available_combos	mvf-select-sql
mitra_select_available_columns	mvf-select-sql
mitra_select_user_columns	mvf-select-sql
mitra_select_user_combos	mvf-select-sql
mitra_finder_wizards	mvf-select-sql
mitra_select_toolbar	mvf-select-sql
mitra_select_user_settings	mvf-select-sql
mitra_cerner_apps	mvf-select-sql
mitra_select_telerad_aes	mvf-select-sql
mitra_select_rond_items	mvf-select-sql
mitra_select_rond_config	mvf-select-sql
mitra_select_rond_departments	mvf-select-sql

Table name	Module name
mitra_select_rond_link	mvf-select-sql
mitra_select_rond_holidays	mvf-select-sql
mitra_select_user_toolbar	mvf-select-sql
mitra_study_arrive_rule_xml	mvf-select-sql
cd_burn_wizard	mvf-select-sql
cd_export_service	mvf-select-sql
mitra_window_positions	mvf-select-sql
mitra_select_avail_context	mvf-select-sql
mitra_select_user_context	mvf-select-sql
mitra_select_status_macros	mvf-select-sql
mitra_user_enumerated_attr	mvf-select-sql
mitra_avail_study_list_columns	mvf-select-sql
mitra_user_study_list_columns	mvf-select-sql
mitra_user_study_list_defaults	mvf-select-sql
mitra_mw_finder_wizards	mvf-select-sql
mitra_user_fixup_columns	mvf-select-sql
mitra_avail_fixup_columns	mvf-select-sql
mitra_user_rond_columns	mvf-select-sql
mitra_avail_rond_columns	mvf-select-sql
dosr_user.user.data.sql	display-sql
mitra_select_user_keyword	mvf-select-sql
mitra_user_tf_report_items	mvf-select-sql
mitra_avail_tf_report_items	mvf-select-sql

Obsolete tables in ORAS

(Topic number: 55124)

Table name	Module name
mf_staff	mtk
mf_procedure	mtk

Table name	Module name
mf_location	mtk
mtk_query_constraints	mtk
mtk_user_source	mtk
mtk_user_destination	mtk
mtk_user_layout	mtk
dosr_team	dosr
dosr_user_team	dosr
dosr_user_history	dosr
dosr_password_history	dosr
dosr_privileges	dosr
dosr_wl_presets	dosr
dosr_user	dosr

Cache check tools reference

C

IMPAX 6.5.1 includes four tools designed to ensure the integrity of the IMPAX cache directory. These tools check the cache directory, repair the cache directory, and then provide a 'Loss Report' for files missing from the cache.

mvf-check-cache

(Topic number: 60503)

This command checks that all the DICOM object files registered in the database for a particular cache volume actually exists in the cache. It also does a sanity check to determine whether the files are correct by comparing the sop_instance_uid to the value in the database. A report giving precise details of the problems found is produced and written to the log file. Optionally, a move-cmds.sh file is created to move the problematic files out of the cache. Files in the cache that do not have locations registered in the database are not detected by mvf-check-cache.

If there are multiple caches, the path name of the cache to be checked must be specified. Memory usage may be high if there are a large number of files, but mvf-check-cache displays the amount of memory required so that the operator can add more virtual memory if needed

Performance of mvf-check-cache is hardware dependant. For example, on a Sunfire 280R, mvf-check-cache can check about 130 files per second. With the quick check option enabled (checking only file existence and file size), about 30,000 files per second can be checked.

mvf-clean-cache

(Topic number: 60506)

This command scans an IMPAX cache directory containing DICOM object files and generates a report of files that do not belong there, either because the file name format is invalid or because this location for the object file is not registered in the database. While working, it writes messages to the

stderr stream to keep the tool operator informed of its progress. The path name of the cache to be scanned is specified on the command line. mvf-clean-cache begins by querying the database for the list of ordinals for the files in the cache. It keeps this list in memory. If there is a large number of files, memory usage may be high but mvf-clean-cache displays the amount of memory required and the operator can add more virtual memory if necessary.

mvf-clean-cache does not access the contents of the cache files. It works by examining the file names and reporting the problem. A copy of the report and additional diagnostic messages are written to the log file. Since mvf-clean-cache may be run on a live system, new files (less than one hour old) are skipped. Thus, temporary files created by the SCP are ignored.

Performance of mvf-clean-cache is hardware dependent. For comparison, on a Sunfire 280R, mvf-clean-cache can check approximately 50,000 files per second

mvf-ddo-rescue

(Topic number: 60521)

This command takes any number of files and directory arguments to determine whether they are DICOM objects. If the argument is a directory, it analyzes all the files in that directory and recursively analyzes all files in all subdirectories. If a file is a DICOM object, then mvf-ddo-rescue determines whether the DICOM object is damaged. If it is undamaged, then mvf-ddo-rescue attempts to find the object in the database. If the object is found in the database, mvf-ddo-rescue checks for a local cache location for the object. If a local cache location is found, then mvf-ddo-rescue compares the DICOM object file with the DICOM object file in the cache to see whether:

1. The cache file is missing
2. The cache file is a duplicate

   or
3. The cache file is different

If a problem exists, mvf-ddo-rescue attempts to give precise details. A copy of the report and additional diagnostic messages are written to the log file.

Performance of mvf-ddo-rescue is hardware dependent. For example, on a Sunfire 280R, mvf-ddo-rescue can analyze about 40 files per second. Performance also depends on how many files must be identified by searching the original_sop_instance_uid field in the database.

mvf-report-loss

(Topic number: 60524)

After repairs have been performed by mvf-check-cache (refer to page 146) mvf-clean-cache (refer to page 146), and mvf-ddo-rescue (refer to page 147), mvf-report-loss is used to perform the last two steps of the repair process:

1. It determines what cache files have been lost and generates a "Loss Report" for the customer. The body of the report contains one line for each study affected and the report is sorted by patient name and study date.

2. It unregisters the missing cache files from the database, preventing display, transmit, and archive errors that are caused when the product tries to access files that are missing from the cache.

mvf-report-loss has two corresponding modes of operation:

Marking mode

The default mode for the tool. In marking mode, the tool checks all the caches on the local server for the presence of the DICOM object files that the database says should be present. For missing files, the "visible" field in the database osr_location table is set to 'C'. (Normally this field contains the value 'T' for true, or 'F' for false). Changing this field makes these file locations invisible to the product software.

The reporting tool may be rerun after further recovery work has been completed (more files restored to cache). In these cases the tool also checks locations with visible value 'C'. If any files have been restored to cache since the last run of the tool, it sets those locations' visible values back to 'T' to indicate that they are now valid.

After the missing DICOM object file locations are marked, a report is generated for the studies that contain lost objects. Each comma-delimited line in the report lists the patient name, patient ID, modality, accession number, study description, study date, total number of objects, and number of lost objects for an affected study.

Note:

In the report, any commas in these fields are replaced by a semicolon.

Deregister mode (-r)

In deregister mode, the tool changes the 'C' values to 'F'. This triggers the Autopilot program to permanently delete these locations from the database. (This is a normal Autopilot function). Please note that there is **no undo**.

Note:

Before running the tool in deregister mode, check the report to ensure that the losses are as expected. If the report seems to report any files that may not be missing, follow the instructions given in the TROUBLE section. A copy of the report and additional diagnostic messages are written to the log file.

Performance of mvf-report-loss is hardware dependent. For comparison, on a standalone Sunfire 280R, mvf-report-loss scans about 2,000 files per second.

Security and licenses reference

D

Understanding security and license issues helps in completing the upgrade process.

Understanding Solaris armoring

(Topic number: 6915)

Solaris armoring disables non-essential system services and modifies system parameters to improve the security of the system. Solaris armoring is installed automatically as part of the Solaris 10 installation.

For systems that must connect to an external Network File System (NFS), such as Netapp Hierarchical Storage Management (HSM), the nfs.client must be re-enabled and started on all systems that mount the NFS storage subsystem. This must be done after armoring is installed by typing the following:

svcadm -v enable -r network/nfs/client

svcadm -v restart svc:/network/nfs/client:default

Modifications made automatically by the Solaris armoring installation

(Topic number: 6954)

Solaris armoring installation makes the following modifications to a standard Solaris install:

- Removes all unnecessary services from /etc/inetd.conf.
- Disables ftp, telnet rsh access (to be replaced by scp and ssh).
- Turns off a number of unnecessary services in the rc scripts.
- Locks down .rhosts, .netrc, and hosts.equiv files (rsh no longer functions, replaced by ssh).

- Enables sulogging, tcpdlogging, inetlogging, and login log, which improve the system's IDS capabilities.
- Modifies the /etc/default/inetinit sets TCP_STRONG_ISS = 2.
- Randomizes all initial sequence number for all TCP connections, guarding against IP spoofing and hijacking.
- Secures the kernel parameters for /dev/ip by restricting IP querying.
- Modifies /etc/system to help protect against buffer overflow attacks.

Groups and accounts created for IMPAX

(Topic number: 6976)

Certain operating system groups and accounts are created for IMPAX when it is installed.

Operating system groups created for IMPAX

During the IMPAX installation, the following operating system groups are created:

Group	Description
dba	Group created for database activities
mitra	Created for IMPAX activities

Operating system account created for IMPAX

During the IMPAX installation, the following operating system account is created, with a secure password:

Account	Description
mvf	Account for administrative IMPAX access

Accounts created for IMPAX

Account	Description
oracle	Administrator account for the Oracle database, with a secure password
ocr_train	User account created when optional MVFocr package is installed

Generating and importing mvf.portable.psd

(Topic number: 6980)

System security is enforced by having credentials for IMPAX internal processes contained within encrypted password files that must be distributed to all machines in the cluster.

When installing IMPAX on the Database Server, the impax_install script uses a passkey utility to save the AgfaService password to a password file at /usr/mvf/mvf.psd. Next the utility creates a portable version of this password file at /usr/mvf/mvf.portable.psd.

When installing IMPAX Network Gateway or Archive Server software, the IMPAX installation script imports mvf.portable.psd, re-encrypts it using a machine specific key, and creates the file /usr/mvf/mvf.psd on the target server.

In some cases the mvf.portable.psd file is not available on the Database Server. This does not prevent any of the initial Network Gateway or Archive Server installs, but you must manually generate and import the password key to the target server.

In other cases following initial installations, prudent security management recommends that the mvf.portable.psd file be deleted from the Database Server once all Network Gateway and Archive Server machines are installed. Therefore, if at some later point you install a new Network Gateway or Archive Server, you must manually generate and import the password key to the target server.

Whenever the import of mvf.portable.psd to the target server fails during an AS3000 installation, you see the following log message indicating the required password file is not on the Database Server:

```
The AgfaService ID password file failed to import properly. You will need to
import the password file manually.
```

The AS3000 Network Gateway or Archive Server installation completed successfully (unless other log messages indicate otherwise), but you must manually generate and import the password key to the target server.

Generating the AS3000 portable password file

(Topic number: 58083)

You may need to generate the portable password file to install new servers or to troubleshoot when password file import fails during installation.

To generate the AS3000 portable password file

1. Log into the AS3000 Database Server machine as the **root** user.
2. Change to the **/usr/mvf** directory.
3. To export the passkey for installing IMPAX on remote machines, type

   ./bin/passkey -M EXPORT -k *temporary_password*

   where *temporary_password* is a password to be used to import the portable password file later.

   This creates the /usr/mvf/mvf.portable.psd password file.

4. On the target server, open a Cygwin command window to download the portable password file from the Database Server.
    a. Ensure the C:\temp directory exists on the target server. If the C:\temp directory does not exist, create one.
    b. Double-click the Cygwin.bat file located in the C:\cygwin\ directory.
    c. On the Cygwin command window, type

       scp service@<Database server hostname>:/usr/mvf/mvf.portable.psd /cygdrive/c/temp
    d. If prompted to add the Database Server's RSA key fingerprint to the list of known hosts, click **Yes**.

       The portable password file is downloaded to the C:\temp directory on the target server.

       Important!

       You should know the service user's password on the Database Server before downloading the portable password file.

Delete /usr/mvf/mvf.portable.psd from the Database Server when you are finished downloading it to the target servers or servers.

Importing the portable password file locally to the target server

(Topic number: 58086)

Once generated, you can import the password file onto the server that needs it.

To import the portable password file locally to the target server

1. Log into the target Network Gateway or Archive Server as the **root** user.
2. To import the portable password file, type

   /usr/mvf/bin/passkey -M IMPORT -k *temporary_password*

   where *temporary_password* is the password you gave when exporting the portable password file.

   This reads the mvf.portable.psd file, re-encrypts it using a machine specific key, and creates the local /usr/mvf/mvf.psd file.
3. To restrict permissions on the newly created mvf.psd file, type

   chmod 640 /usr/mvf/mvf.psd
4. Delete /usr/mvf/mvf.portable.psd from the target server.

   CAUTION!

   The mvf.portable.psd file contains sensitive information. To maintain the security of the system, the portable password file should be deleted both the Database Server and the target servers.

External software licenses

(Topic number: 7744)

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Cygwin

(Topic number: 121758)

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Xerces C++ Parser, version 1.2

(Topic number: 121761)

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Zlib

(Topic number: 7595)

zlib.h -- interface of the 'zlib' general purpose compression library Version 1.2.1, November 17th, 2003

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Glossary

A

APIP

Agfa Proprietary Imaging Protocol. Used to receive the proprietary format, reformat the images to DICOM and redirect them to the SCP. An APIP SCP is used specifically to receive images from certain older Agfa image sources.

Autopilot

Service that removes old and expired data when the cache starts to get full. This maintenance function keeps the database to a manageable size.

B

browser

Software that allows a user to search through information on a server. The term usually refers to a universal client application, such as Firefox or MS Internet Explorer, that interprets HTML documents.

C

cc objects

Change Context (cc) objects are DICOM objects used to communicate and synchronize study metadata changes across multiple IMPAX clusters.

CLUI

Command Line User Interface. A command-line tool to help in the service of IMPAX MVF. CLUI allows you to execute SQL statements.

cluster

A networking solution combining two or more otherwise independent computers, enabling them to work together in managing hospital data.

compression

Reduces the size of a file to save both file space and transmission time. Lossless, lossy, and wavelet are examples of compression types.

Curator

Curator is an IMPAX MVF server component. It is responsible for compressing incoming images into the Mitra Wavelet format and storing them in the web cache. These studies can be accessed by remote or local clients.

D

database

A collection of data that is organized so that its contents can easily be accessed, managed, and updated.

DICOM

Digital Imaging and Communications in Medicine. The standard communication protocol used by a PACS, HIS, or modality to exchange information or images with other systems.

H

high availability

With a high-availability solution, a site is protected against system downtimes, either planned or unplanned. Redundant servers are put in place that can take over functionality should the primary server become unavailable.

HIS

Hospital Information System. The database used by a hospital to manage patient information and scheduling.

HIS verification

An option that forces the PACS to verify all incoming images from an acquisition station or modality against specific criteria, such as the patient ID and accession number. The PACS sends a message through the RIS Gateway to verify the criteria against what is contained in the HIS. If the criteria match, then the images can be stored permanently.

HSM

Hierarchical Storage Management. An HSM archive system provides long-term storage of data and access to data. Studies archived with HSM are stored to a file system. A mount point and subdirectory to store studies to is specified. The HSM system handles data storage.

HTTP

Hypertext transfer protocol, a TCP-based protocol for transferring hypertext requests and information between servers and browsers.

HTTPS

Hypertext transfer protocol, secure, a URL access method for connecting to http servers using SSL (secure sockets layer).

I

image

A single frame taken by a modality. Certain modalities, such as a CT, MRI, or PET, take consecutive sets of images called *series*. *Studies* are combinations of series or images for a single patient.

L

log file

A file or set of files containing a record of the actions and modifications made in an application. Service teams use log files during setup and configuration of the system or its components. Logs are also used to diagnose problems. Logging can typically be set to record varying levels of detail.

M

MAC address

Media Access Control address. The unique physical address of each device's network interface card.

modality

An imaging discipline, such as CT, or a device that gathers digital information, such as digitizers for X-ray film, MRI scanners, and CR devices.

MVF_SCU

A process that handles store and retrieve jobs for the PACS Store and Remember archive.

On IMPAX systems, it runs on the Network Gateway.

N

NAS

Network Attached Storage. A storage device attached directly to a Storage Area Network (SAN) or other direct network connection.

network

A group of computers, peripherals, or other equipment connected to one another for the purpose of passing information and sharing resources. Networks can be local or remote.

Network Gateway

The Network Gateway is part of the IMPAX MVF cluster. Essentially, this is the workflow manager of the IMPAX 6.0 and later system. The Network Gateway controls the studies coming into the cluster from an acquisition station, validates these incoming studies against information from the HIS or RIS, and routes the validated studies to cache or archive.

O

OCR

Optical Character Recognition is the recognition of printed or written characters by a computer. If a modality generates images into the system but not enough information about a study is sent, OCR templates read information directly from the burned demographics.

P

PACS

A Picture Archive and Communication Systems (PACS) makes it possible to electronically store, manage, distribute, and view images.

PAP

PACS Archive Provider. A PACS Archive Provider (PAP) acts like a Service Class Provider (SCP) in that it receives studies. However, it differs from an SCP in that the PAP can automatically register a study as PACS archived if the study originates from a source that the PACS stores to and remembers from, without having to queue the study for archiving back to the source. The PAP can also parse the private tags of the incoming DICOM objects to determine HIS verification and study status.

S

SAN

Storage Area Network. A network of shared storage devices. In a Storage Area Network, all storage devices are available to all servers on a Local Area Network.

scheduled worklist

A worklist that you can set to occur on specific days, that holds the studies for a round, clinic, or conference. You can prepare for a round by taking snapshots of study layouts with the Snapshot tool and saving the snapshots in a scheduled worklist.

SCP

Service Class Provider. A DICOM server that receives requests from an SCU. The DICOM SCP accepts images for processing, processes find and retrieve requests, and handles storage commitment requests and replies.

SCU

Service Class User. Primarily sends DICOM requests to an SCP.

standalone station

Windows server on which the IMPAX Client, AS300, and Application Server software are installed. Runs under Windows XP SP3. The standalone does not have its own installation program. To create a standalone , the AS300, Application Server, and Client installation programs are each run separately.

W

warm backup

Descriptive of a backup process in which the database does not have to be shut down.

Compared with cold backups, warm backups are faster and keep the database accessible while the backup is being performed.

worklist

A collection of patients and their studies. For radiologists, the worklist is analogous to a pile of film jackets. They use the worklist to know which studies they must interpret during a specific time period. For technologists, a worklist is a list of the studies they must perform at specific times for each patient.

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