Preparing to Upgrade Guide

IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.1

Preparing to Upgrade an IMPAX 4.5, 5.2, or 5.3 Cluster or to Migrate a WEB1000 Site to IMPAX 6.5.1

AGFA

see more | do more

Copyright information

Trademark credits

Agfa and the Agfa rhombus are trademarks or registered trademarks of Agfa-Gevaert N.V., Belgium or its affiliates. IMPAX, Connectivity Manager, Audit Manager, WEB1000, Xero, TalkStation, Heartlab, and HeartStation are trademarks or registered trademarks of Agfa HealthCare N.V. or its affiliates. All other trademarks are held by their respective owners and are used in an editorial fashion with no intention of infringement.

Additional trademark credits

Sun, Sun Microsystems, the Sun Logo, and Solaris are trademarks or registered trademarks of Oracle America, Inc. in the United States and other countries.

CE
0413

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.

Documentation warranty statement

Characteristics of the products described in this publication can be changed at any time without notice.

The information contained in this document is subject to change without notice. Agfa HealthCare N.V. and its affiliates make no warranties or representations, express, implied or statutory, with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

Agfa HealthCare N.V. and its affiliates shall under no circumstances be liable for any damage arising from the use or inability to use any information, apparatus, method or process described in this document. Agfa HealthCare N.V. and its affiliates shall not be liable for errors contained herein or for incidental or consequential damage in connection with the furnishing, performance, or use of this manual.

2011 - 6 - 14

Manufacturer's responsibility

The manufacturer, installer, or importer will be responsible for the safety, reliability, and performance of the equipment only if:

- Installation, modifications, adjustments, changes, or repairs are performed by suitably qualified service personnel.

- The electrical installation of the site in which the equipment is used is according to an applicable safety standard (UL, CSA, or IEC/CDE).
- The equipment is used according to the instructions provided in the operation manuals.

External software licenses

(Topic number: 7696)

Information about third-party software licenses and copyrights can be found in *External software licenses* (refer to page 148).

Giving feedback on the documentation

(Topic number: 122201)

Thank you for taking the time to provide feedback. Your comments will be forwarded to the group responsible for this product's documentation.

To give feedback on the documentation

1. In an email subject line or body, list which product, version, and publication you are commenting on.

   For example, "IMPAX 6.4 SU01 Client Knowledge Base: Extended". (You can find this information in the footer of the publications.)
2. Describe the incorrect, unclear, or insufficient information. Or, if you found any sections especially helpful, let us know.
3. Provide topic titles and topic numbers where applicable.

   Including your personal contact details is optional.
4. Send the email to doc_feedback@agfa.com.

Sorry, we cannot respond directly to every submission and we cannot accept requests for changes in the product; instead, contact your product sales representative or the product's technical support channel.

Contents

Getting started

1

IMPAX 5.3 and earlier versions are quite different from IMPAX 6.0 and later versions. WEB1000 and IMPAX 6.5.1 also have a number of differences. These are important to understand.

Various software packages must be installed before IMPAX can be upgraded. Other documentation is available to provide details.

About the IMPAX Preparing to Upgrade Guide

(Topic number: 6608)

This manual is intended for service and administrative personnel who are preparing to upgrade an IMPAX 4.5, IMPAX 5.2, or IMPAX 5.3 cluster or a WEB1000 site to IMPAX 6.5.1. Information on performing the actual upgrade is available in the *IMPAX 6.5.1 AS300 Upgrade and Migration Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.1* and the *IMPAX 6.5.1 AS3000 Upgrade and Migration Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.1*. Details regarding related documentation are provided in *Related documentation* (refer to page 18).

New IMPAX concepts and functionality

(Topic number: 6684)

IMPAX 6.0 and later are next-generation PACS systems. Compared with previous versions of IMPAX (5.3 and earlier), the Client has a new user interface and architecture. It can be installed through a browser download. The Client is more tightly integrated with IMPAX RIS software, and RIS information is available in the Client's Text area. The IMPAX 6.0 and later Client is also better integrated with the TalkStation and IMPAX Reporting software.

IMPAX 6.0 also introduced new server components:

- Application Server—an intermediary that separates Clients from the Database Server and other IMPAX Server components
- Curator—converts study images to a compressed wavelet format
- Connectivity Manager—replaces PACS Broker or RIS Gateway in the cluster

IMPAX 6.2 built on the IMPAX 6.0 foundation to deliver new mammography and user administration features, along with some Image area enhancements.

IMPAX 6.3 included multi-cluster functionality, which provides a patient-centric view across hospitals within several sites. This view was delivered by extending the scope of study query, study retrieval, and data synchronization from a single hospital site to several hospital sites that have multiple patient domains (multiple RISs) in one or more IMPAX clusters. Additional new features, such as streamlined Application Server updates, IMPAX Reporting dictation, and configurable simple Search, were provided in the IMPAX 6.3.1 release.

IMPAX 6.4 provided significantly improved CT and MR study navigation, IMPAX Reporting enhancements, improved study comments and support for voice comments, enhanced mammography features, and new Client administration features. Platform updates included support for Windows Vista (Client only), SQL Server 2005, and Oracle for Windows. Additional Server migration tools were also provided.

IMPAX 6.5 included enhanced snapshot functionality, enhanced embedded IMPAX Reporting, an updated Spine Annotation tool, additional support for free-text study and voice comments, enhanced scheduled worklist functionality, and enhanced breast imaging.

It also included IMPAX Results Viewer, a browser-based IMPAX client designed to enable efficient distribution of medical images and reports for referring physicians and other healthcare professionals.

Platform updates included support for Windows 7, Windows Server 2008, SQL Server 2008, and Solaris Live Upgrade. A hierarchical cache structure was implemented for image and web caches, permitting larger cache volumes. A cache migration tool was also included in the standard IMPAX install packages. New standalone installations were supported only on Windows 7 and, using VMware Player, the IMPAX Server and Application Server components were installed under Windows 2008 with Oracle for Windows.

IMPAX 6.5.1 introduces several new features, including:

- Improved speech synchronization in IMPAX Reporting
- Validation of new speechmikes with IMPAX 6.5.1
- Instant Messaging to easily connect with colleagues
- The introduction of the Agfa Web Service Portal (Service Portal), a web-based tool used to support, maintain, and monitor the IMPAX system
- The ianalyze tool is available to analyze Client performance

For a more detailed list of new IMPAX 6.5.1 features and concepts, refer to:

- "New in IMPAX 6.5.1 Client" (topic number 123473) in the *IMPAX 6.5.1 Client Knowledge Base: Extended*

- "New in IMPAX 6.5.1 Server" (topic number 125212) in the *IMPAX 6.5.1 Server Knowledge Base*

Key differences between WEB1000 and IMPAX 6.5.1

(Topic number: 6664)

The following table highlights the major differences between WEB1000 and IMPAX 6.5.1:

WEB1000	IMPAX 6.5.1
Search Wizards	Worklists A worklist is 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.
Teams	Roles A role is a collection of users or other roles that holds permissions and preferences as well as licensing options. For example, a role can represent the enterprise, the institution, a department, or a team.
Thumbnail navigation area	Thumbnails are displayed in the Available Series palette in the Image area.
Minimal conferencing capabilities	No conferencing capabilities

For a complete list of differences, see "WEB1000 and IMPAX 6.5.1 feature comparison" (topic number 55002) in the *IMPAX 6.5.1 Migrations Reference Guide*.

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.

Valid cluster configurations

(Topic number: 10763)

For cluster configurations, the following upgrade paths are supported:

- Current single-cluster configuration to equivalent single-cluster configuration
- Single-host AS300 to multi-host AS300
- Single-host AS3000 to mixed-host AS300/AS3000
- Multi-cluster configuration to multi-cluster configuration

If your IMPAX configuration is not listed, contact your service representative.

When considering whether to move from single-host to a multi-host or a mixed-host configuration, assess current performance of the system. If it is only borderline acceptable, you may want to also upgrade the configuration to achieve better performance.

When upgrading from a single-host to a multi-host or mixed-host configuration, consider the sizing and expected load on each server to take best advantage of the additional servers. For example, moving the Curator component to its own server is generally more beneficial than moving the Network Gateway component to its own server.

IMPAX upgrade strategy

(Topic number: 10757)

With any IMPAX configuration, upgrade and migration activities take place in three phases: preparing to upgrade, upgrade, and post-upgrade.

IMPAX preparing to upgrade period: Upgrades from IMPAX 5.3 and earlier

(Topic number: 10681)

The preparing to upgrade phase can last several weeks. During this time, the current system is analyzed to determine the best upgrade procedure to use. The IMPAX Migration Tools are used to diagnose the current system, to export and migrate user data (for 5.2 and 5.3 upgrades), and to test the migration in advance. In some scenarios, preliminary installations or upgrades are performed.

For upgrades from IMPAX 5.2 or 5.3, most user data can be exported, but only some of it can be migrated into 6.5.1.

Key items that can be migrated include:

- Print preferences
- Keyboard shortcuts
- Study data such as keywords and study comments
- Image area wizards
- Hanging protocols
- Comparative review modes
- Teaching file folders

Key items that are not migrated include:

- Worklists

- Select wizards
- Search and transmit locations
- Tools and toolbar settings
- Screen formats
- Modality preferences
- Window level presets
- Permissions to teaching file folders
- Markup for key images, only the original images retain the markup

Details are available in *IMPAX 5.2 preferences migrated to IMPAX 6.5.1* (refer to page 141).

IMPAX upgrade period: IMPAX 5.2 or 5.3 upgrades

(Topic number: 10759)

During this phase, the IMPAX Server components are upgraded, the IMPAX database is migrated, and the IMPAX Clients are upgraded. Some downtime usually occurs here; how long depends on whether and how training and traveling servers are used. The goal is to complete these activities within a weekend.

IMPAX post-upgrade period

(Topic number: 10761)

This phase begins once all the Server components, the Application Server, and a critical mass of Clients are running with the updated software and databases. During this phase, certain tests are run and initial configuration tasks are performed. These activities may begin during the "upgrade weekend" and continue for some days afterward.

Valid WEB1000 migration paths and transition strategy

(Topic number: 6606)

A site running WEB1000 or a combination of WEB1000 and IMPAX can transition its WEB1000 users to IMPAX 6.5.1. You can migrate from the following versions of WEB1000:

- WEB1000 4.1
- WEB1000 5.0

- WEB1000 5.1

WEB1000 migrated features

(Topic number: 6658)

The IMPAX Migration Tools include a utility for *exporting* the following:

- User IDs
- Access control information such as privilege levels (such as Clinician), access control groups (such as Exhibit), and access control features (such as STUDY.VIEW_IMAGES)
- Team information

The utility can also *migrate* the following WEB1000 features to the IMPAX 6.5.1 database:

- User IDs
- Privilege levels, which are mapped to IMPAX roles

Not migrated are the following WEB1000 features:

- Team information—This information can be *exported*, however, and the exported data can be used to create equivalent IMPAX 6.5.1 roles.
- Access control groups and features—This information can be *exported*, however, and the exported data can be used to assign equivalent permissions and operations to IMPAX 6.5.1 roles.
- User preferences—The user interface varies too much between WEB1000 and IMPAX 6.5.1 for this migration to be viable.
- Web cache.
- Data Currency.
- EPR integration—Fundamental technology and architectural differences exist between the WEB1000 and IMPAX 6.5.1 EPR integrations.

For a more detailed list of the differences between WEB1000 and IMPAX, refer to "WEB1000 and IMPAX 6.5.1 feature comparison" (topic number 55002) in the *IMPAX 6.5.1 Migrations Reference Guide*.

WEB1000 transition strategy

(Topic number: 6610)

In most cases, the process of moving WEB1000 users to IMPAX 6.5.1 is a gradual one, taking place over months. The WEB1000 Server itself is never upgraded to an IMPAX 6.5.1 Server. Instead, both systems coexist for a time, until it is feasible to move all WEB1000 users to IMPAX 6.5.1.

This strategy is based on the following assumptions:

- Access to recent studies in the WEB1000 web cache occurs frequently, while access to older studies is infrequent.
- When older studies are needed, they can be retrieved from the archive. This results in some delay, which users have found acceptable.
- Metadata from WEB1000 is transient.
- Amount of WEB1000 web cache space is limited; therefore, the age of the studies stored in that cache is limited.

If some of these assumptions are not true for a particular site, adapt the strategy as needed to meet the needs of that site.

Phase 1: Pre-Migration period

(Topic number: 6644)

WEB1000 and IMPAX 5.2 or 5.3 (if also used at the site) function normally. Each operates as a separate system with its own set of data. Based on routing rules, IMPAX routes images to WEB1000. Data Currency keeps the study information synchronized between IMPAX and WEB1000 by propagating WEB1000 changes to IMPAX.

During this period, WEB1000 user IDs, privilege levels, access control groups and features, and team information are exported for analysis and planning. WEB1000 user IDs and privilege levels are migrated into an ADAM database for future use in IMPAX 6.5.1.

Phase 2: IMPAX 6.5.1 upgrade

(Topic number: 6643)

If IMPAX 5.2 or 5.3 is also used at the site, at some point its servers and clients are upgraded to IMPAX 6.5.1. No changes are made to the WEB1000 Clients and Server.

For WEB1000-only sites, IMPAX 6.5.1 Clients and Servers are installed. No changes are made to the WEB1000 Clients and Server. The Data Currency service is stopped, as it is not compatible with IMPAX 6.5.1.

Phase 3: IMPAX 6.5.1 and WEB1000 coexistence

(Topic number: 6642)

IMPAX 6.5.1 and WEB1000 run as separate systems, but with image routing based on IMPAX routing rules. However, data currency does not exist, so data does not remain synchronized between IMPAX 6.5.1 and WEB1000.

WEB1000 users start to be trained on the IMPAX 6.5.1 system.

Phase 4: Initial set of WEB1000 users switch to IMPAX 6.5.1

(Topic number: 6641)

After two months of operation (for example), two months' worth of new studies have been sent to IMPAX 6.5.1 and curated to the IMPAX 6.5.1 web cache. The relevant priors for the new studies have been retrieved from archive and curated to the IMPAX 6.5.1 web cache.

At this point, some WEB1000 users can begin to use IMPAX 6.5.1 instead. Unavailable studies have to be retrieved from archive and be curated, which causes a delay.

Phase 5: More WEB1000 users switch to IMPAX 6.5.1

(Topic number: 6640)

The situation is the same as detailed previously, except that fewer studies should be unavailable to the IMPAX 6.5.1 system. More WEB1000 users start using IMPAX 6.5.1.

Phase 6: Transition complete

(Topic number: 6639)

All WEB1000 users switch to the IMPAX 6.5.1 system—ideally when all data in the WEB1000 web cache is also in the IMPAX 6.5.1 web cache. At this point, the site can stop routing studies to WEB1000 and WEB1000 can be decommissioned.

Communicating upgrade plans

(Topic number: 9924)

Upgrading a site to IMPAX 6.5.1 from IMPAX 5.3 or earlier is a big undertaking. Ensure that the site personnel understand the major architectural differences between IMPAX 6.5.1 and IMPAX 5.3 and earlier. Hold a kick-off meeting for the key stakeholders in the upgrade to explain this and to identify:

- Site requirements
- Preparations required for success
- Expectations and responsibilities
- Upgrade project milestones

Document the decisions made at the kick-off meeting and deliver these to the site's primary project sponsor.

Next, develop a communication plan with the PACS Administrator to ensure that project schedules, expected changes, and other important information is effectively conveyed to affected personnel at the site. Also inform the Agfa GSN group about expected down times.

IMPAX data stored in ADAM/AD LDS and MVF databases

(Topic number: 48414)

Part of the migration process from IMPAX 5.2 or 5.3 is to move some data from the MVF database that resides on the IMPAX Database Server to the ADAM database (Windows Server 2003) or to the AD LDS (Windows Server 2008) database that resides on the new IMPAX Application Server. This topic gives an overview of what data is transitioned to ADAM/AD LDS .

In general, user data is stored in ADAM/AD LDS, while study data is stored in MVF. For example, the following data is stored in ADAM/AD LDS:

- User IDs and passwords, except for external LDAP users. For LDAP users, that information is stored in LDAP, and a mapping to this information is stored in ADAM.
- User permissions (operations and study status flags).
- User licenses.
- User and role preferences set in the Client Configure area settings.
- Image area user profile settings.
- User preferences for the List and Text area (such as which panels are displayed in the Text area).
- Image area wizards and List area script wizards.
- Station, container, and station container configurations.

Among the information that remains in the MVF database is the following:

- Printer configurations
- Study keywords
- Enumerated values
- Study comments

Related documentation

(Topic number: 6634)

IMPAX includes documentation for IMPAX Client, IMPAX Application Server, and IMPAX Server. The documentation is released on its own DVD. This DVD includes the Upgrade and Migration Guides along with the IMPAX 6.5.1 Knowledge Bases, Installation Guides, Configuration Guides, Task Summaries, and Quick References.

The documentation eventually must be installed on an IMPAX 6.5.1 Application Server. In the interim, however, the documentation can be installed on any Windows-based computer or be viewed right on the DVD.

The default.htm file at the root of the Documentation DVD and the installation directory links to all available documentation.

IMPAX Knowledge Bases

(Topic number: 6676)

These online references are intended for clinical, administrative, and service personnel.

Opening the IMPAX Client Knowledge Base

(Topic number: 57452)

The IMPAX 6.5.1 Client Knowledge Base: Extended is a comprehensive set of information that details how radiologists, clinicians, specialists, and PACS administrators configure and use the IMPAX Client software. The Knowledge Base provides targeted getting started information, concepts, and tasks for various user groups, and focuses on task-based and workflow-based information.

The IMPAX Client Knowledge Base: Core is available in 19 languages. The IMPAX 6.5.1 Client Knowledge Base: Extended is available in English. Any or all languages can optionally be installed and can be viewed on the Documentation DVD.

Viewing the Client Knowledge Base from the documentation DVD

(Topic number: 57437)

All IMPAX Knowledge Bases, including the IMPAX Client Knowledge Base, can be viewed directly from the IMPAX documentation DVD.

To view the Client Knowledge Base from the documentation DVD

1. Insert the IMPAX documentation DVD.
2. Navigate to /docs/client/knowledge_base.
3. Double-click **default.htm**.
4. Select the appropriate language for the IMPAX Client Knowledge Base.

Opening the Client Knowledge Base from the List, Text, or Configure area

(Topic number: 57440)

Once the IMPAX documentation is installed, you can access it from the IMPAX Client application.

To open the Client Knowledge Base from the List, Text, or Configure area

1. Press **F1**.

   or

   From the List or Configure area bar, click **Help**.

The home (or main) page of the Client Knowledge Base opens in a browser window. It normally appears in the same language used for the IMPAX interface; for example, if working with IMPAX

in French, the French Knowledge Base opens. If the Knowledge Base is not available in the interface language (usually because that Knowledge Base was not installed), you must manually redirect the URL to the English Knowledge each time you open the Knowledge Base.

Opening the IMPAX 6.5.1 Application Server Knowledge Base

(Topic number: 40098)

This Knowledge Base covers how to configure and maintain the IMPAX Application Server.

Viewing the Application Server Knowledge Base from the documentation DVD

(Topic number: 58005)

All IMPAX Knowledge Bases, including the IMPAX 6.5.1 Application Server Knowledge Base, can be viewed directly from the IMPAX documentation DVD.

To view the Application Server Knowledge Base from the documentation DVD

1. Insert the IMPAX documentation DVD.
2. Navigate to /docs/appserver/knowledge_base.
3. Double-click **default.htm**.

Opening the IMPAX 6.5.1 Application Server Knowledge Base from the Configuration Tool software

(Topic number: 57999)

Once the IMPAX documentation is installed, you can access the IMPAX 6.5.1 Application Server Knowledge Base from the Business Services Configuration Tool software.

To open the IMPAX 6.5.1 Application Server Knowledge Base from the Configuration Tool software

1. Select **Start** > **All Programs** > **Agfa HealthCare** > **Business Services** > **Configuration Tool**.
2. In the Business Services Configuration Tool, click **Help**.

Opening the IMPAX 6.5.1 Server Knowledge Base

(Topic number: 11528)

The IMPAX 6.5.1 Server Knowledge Base is a reference tool for PACS IT specialists and clinical coordinators, field engineers, and technical launch team members, primarily to help them understand and use the components of the IMPAX cluster. The Server Overview component provides a basic understanding of the IMPAX system and introduces users to key components and concepts.

Viewing the Server Knowledge Base from the documentation DVD

(Topic number: 57901)

All IMPAX Knowledge Bases, including the IMPAX Server Knowledge Base, can be viewed directly from the IMPAX documentation DVD.

To view the Server Knowledge Base from the documentation DVD

1. Insert the IMPAX documentation DVD.
2. Navigate to /docs/server/knowledge_base.
3. Double-click **default.htm**.

Opening the Server Knowledge Base from the Administration Tools
(Topic number: 57892)

Once the IMPAX documentation is installed, you can access it from the IMPAX Administration Tools interface.

To open the Server Knowledge Base from the Administration Tools

1. Select **Help** > **Help URL**.

   A new browser window opens and loads the IMPAX Documentation page.
2. Under Knowledge Bases, click the **IMPAX Server Knowledge Base** link.

IMPAX installation, configuration, and upgrade guides
(Topic number: 6677)

These PDF guides are intended for service and administrative personnel. They contain all the information needed to install, upgrade, and configure an IMPAX cluster.

Note:

To view the IMPAX PDF guides on a computer, Adobe Reader must be installed.

Opening a PDF guide from the documentation DVD
(Topic number: 57808)

All IMPAX guides can be viewed directly from the IMPAX documentation DVD.

To open a PDF guide from the documentation DVD

1. Insert the IMPAX documentation DVD.
2. Navigate to **/docs/{server | appserver | client}/guides**.
3. Double-click the file name of the PDF guide.

Opening a PDF guide from where the documentation is installed
(Topic number: 57811)

Once the IMPAX documentation is installed, you can access the PDF guides from a connected computer.

To open a PDF guide from where the documentation is installed

1. Open a browser window.
2. Navigate to https://application_server_name/documents/

   where application_server_name is the name of the server where the IMPAX documentation is installed.

3. Under Upgrade and migration or Installation and configuration, click the title of the guide to view.

IMPAX Client guide
(Topic number: 6680)

Title	File name	Provides instructions on
IMPAX 6.5.1 Client Installation, Upgrade, and Configuration Guide	impax_client_install.pdf	• Installing the IMPAX Client and related software in a standard configuration • Upgrading the IMPAX 5.2, 5.3, or 6.2 or later Client workstation to IMPAX 6.5.1 • Initially configuring the Client

IMPAX Application Server guide
(Topic number: 6683)

Title	File name	Provides instructions on
IMPAX 6.5.1 Application Server Installation, Upgrade, and Configuration Guide	impax_application_server_ install.pdf	• Installing the operating system, IMPAX documentation, and IMPAX Application Server software • Upgrading the Application Server to IMPAX 6.5.1 • Initial configuration of the IMPAX Business Services and other post-installation configuration tasks

IMPAX Server guides
(Topic number: 6673)

Title	File name	Provides instructions on
IMPAX 6.5.1 Preparing to Upgrade Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.1	impax_5x_ premigration_guide .pdf	Preparing to upgrade an IMPAX 4.5, 5.2, or 5.3 cluster to IMPAX 6.5.1, and how to transition from WEB1000 to IMPAX 6.5.1. Covers both AS300 and AS3000 clusters. If these preliminary

Title	File name	Provides instructions on
		tasks are not performed, the upgrade will not succeed.
IMPAX 6.5.1 Preparing to Upgrade Guide—IMPAX 6.2 or later to IMPAX 6.5.1	impax_6x_premigration_guide .pdf	Preparing to upgrade an IMPAX 6.2 or later cluster to IMPAX 6.5.1. Covers both AS300 and AS3000 clusters. If these preliminary tasks are not performed, the upgrade will not succeed.
IMPAX 6.5.1 AS300 Upgrade and Migration Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.1	impax_5x_as300_ upgrade.pdf	Upgrading an IMPAX 5.2 or 5.3 cluster to an IMPAX 6.5.1 AS300 host.
IMPAX 6.5.1 AS3000 Upgrade and Migration Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.1	impax_as3000_5x_ upgrade. pdf	Upgrading an IMPAX 5.2 or 5.3 cluster to an IMPAX 6.5.1 AS3000 host.
IMPAX 6.5.1 AS300 Installation and Configuration Guide	impax_as300_install.pdf	Installing and initially configuring hardware and software on AS300 Database, Archive, and Network Gateway servers. This guide covers single-server,all-in-one, single-host, and multi-host configurations.
IMPAX 6.5.1 AS3000 Installation and Configuration Guide	impax_as3000_install.pdf	Installing and initially configuring hardware and software on AS3000 Database, Archive, and Network Gateway servers.
IMPAX 6.5.1 Curator and CD Export Server Installation Guide	impax_curator_install.pdf	Installing and initially configuring the Curator and the CD Export server.
IMPAX 6.5.1 Standalone Installation and Configuration Guide	impax_standalone_ install_guide.pdf	Installing and initially configuring an IMPAX standalone station. A standalone station has IMPAX Client, Application Server, and Server components installed on a single computer.
IMPAX 6.5.1 Standalone Upgrade Guide	impax_standalone_ upgrade_guide.pdf	Upgrading an IMPAX standalone station. A standalone station has IMPAX Client, Application Server, and Server components installed on a single computer.

IMPAX Task Summary references

(Topic number: 65012)

The Task Summary references provide only the main steps of the primary pre-migration and upgrade tasks. They can serve as a quick reminder of what to do, but do not provide all the information necessary to a successful upgrade.

CAUTION!

The Task Summary references are intended for advanced system administrators. The references provide no context on when and why to perform the tasks. For complete information, refer to the full Preparing to Upgrade and Upgrade guides.

Title	File name	Tasks summarized in publication
AS300 Upgrade Tasks Summary—IMPAX 5.2 or 5.3 to IMPAX 6.5.1	impax-5x-as300-upgrade-summary.pdf	Upgrading the components of an AS300 cluster from IMPAX 5.2 or 5.3 to IMPAX 6.5.1.
AS3000 Upgrade Tasks Summary—IMPAX 5.2 or 5.3 to IMPAX 6.5.1	impax-5x-as3000-upgrade-summary.pdf	Upgrading the components of an AS3000 cluster from IMPAX 5.2 or 5.3 to IMPAX 6.5.1.
Preparing to Upgrade Tasks Summary—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.1	impax-5x-premigration-summary.pdf	Preparing to upgrade the components of an AS300 or AS3000 cluster from IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.1.

IMPAX 6.5.1 Migrations Reference Guide

(Topic number: 6655)

The *IMPAX 6.5.1 Migrations Reference Guide* contains information to assist in the migration from WEB1000, IMPAX 4.5, IMPAX 5.2, or IMPAX 5.3 to IMPAX 6.5.1. Among the information available is the following:

- IMPAX 5.2 preferences migrated to IMPAX 6.5.1
- IMPAX 5.2 and WEB1000 to IMPAX 6.5.1 feature comparison
- IMPAX 5.2 and IMPAX 6.5.1 permissions and privilege comparison
- IMPAX 5.2 database tables rendered obsolete in IMPAX 6.5.1
- Default operations assigned to each default role

This guide is installed with both Server and Client documentation, in the same folder as the installation, upgrade, and configuration guides. Its file name is impax-migration-reference.pdf.

IMPAX Quick References

(Topic number: 54853)

Quick References are intended for clinical users. These abbreviated publications provide instructions for commonly performed tasks and frequently required references. For ease of access, Quick References can printed (double-sided if possible) and posted at Client workstations.

Note:

To view the IMPAX Quick References on a computer, Adobe Reader must be installed.

Opening a Quick Reference from the documentation DVD

(Topic number: 57817)

All IMPAX Quick References can be viewed directly from the IMPAX documentation DVD.

To open a Quick Reference from the documentation DVD

1. Insert the IMPAX documentation DVD.
2. Navigate to **/docs/**{**server**|**client**}**/quick-references**.
3. Double-click the file name of the Quick Reference to open.

Opening a Quick Reference from where the documentation is installed

(Topic number: 57823)

Once the IMPAX documentation is installed, you can access the Quick References from a connected computer.

To open a Quick Reference from where the documentation is installed

1. Open a browser window.
2. Navigate to https://*application_server_name*/documents/

   where *application_server_name* is the name of the server where the IMPAX documentation is installed.
3. Under Quick References, click the title of the Quick Reference to view.

IMPAX Client Quick References

(Topic number: 54856)

Title	File name	Describes common IMPAX procedures and references for
IMPAX 6.5.1 Quick Reference: Breast Imaging	breast_imaging.pdf	Radiologists who specialize in breast imaging.
IMPAX 6.5.1 Quick Reference: Clinicians	clinicians.pdf	Clinicians and surgeons.
IMPAX 6.5.1 Quick Reference: CT-MR	ct-mr.pdf	CT/MR navigation tasks.
IMPAX 6.5.1 Quick Reference: Emergency (ER)	emergency.pdf	Emergency room clinical staff.
IMPAX 6.5.1 Quick Reference: ICU	icu.pdf	ICU clinical staff.
IMPAX 6.5.1 Quick Reference: IMPAX Reporting for Administrators	reporting_administrator.pdf	PACS Administrators at sites using IMPAX Reporting.
IMPAX 6.5.1 Quick Reference: IMPAX Reporting for Radiologists	reporting_radiologist.pdf	Radiologists at sites using IMPAX Reporting.
IMPAX 6.5.1 Quick Reference: Orthopaedics	orthopaedics.pdf	Orthopaedic surgeons.
IMPAX 6.5.1 Quick Reference: Radiologists	radiologists.pdf	Radiologists.
IMPAX 6.5.1 Quick Reference: RONDS	ronds.pdf	Conducting rounds or conferences.
IMPAX 6.5.1 Quick Reference: Search	search.pdf	Searching for studies and patients by various criteria.
IMPAX 6.5.1 Quick Reference: Spine Annotation	spine_annotation.pdf	Applying spine annotation labels to CT or MR images to indicate which section of the spine an image intersects.
IMPAX 6.5.1 Quick Reference: Technologists	technologists.pdf	Technologists and radiographers.

IMPAX Server Quick Reference
(Topic number: 54859)

Title	File name	Describes common IMPAX procedures and references for
IMPAX 6.5.1 Quick Reference: Administration Tools	admin_tools.pdf	Configuring IMPAX Server using the Administration Tools.

Prerequisite data and material

(Topic number: 115262)

Before proceeding with the upgrade to IMPAX 6.5.1, the following data and material must be collected.

- Ensure that all appropriate upgrade guides, release notes, and service bulletins are available.
- Acquire CD/DVD, ISO image, or EXE file for the following:
  - Current version of the operating system
  - Previous and current versions of IMPAX
  - Previous and current versions of the database software
  - Any third-party software required for the upgrade
  - All service packs mentioned for the previous items
- Acquire properly issued certificates.
- Acquire valid IMPAX license keys.
- Ensure that all information needed during the upgrade and configuration is available; for example, the Application Server's fully qualified domain name.

Prerequisite software installations

(Topic number: 59235)

Note:

For each package, ensure that the most current Service Update (SU) packages available at the time of upgrade are also installed.

Before proceeding with the migration to IMPAX 6.5.1, migrate or install the following software.

- If currently running PACS Broker 1.5.3, 1.5.4 or 1.5.5, you must migrate to Connectivity Manager 2.2.1 or 2.3 under the following circumstances:
  - Multi-site installations (for report queries from multiple sources)
  - VPN sites
  - EPR integrations with HL7 backend messaging
  - IMPAX RIS integrations
  - IMPAX RIS CD burning
  - Cardiology integrations
- And if you require the following new IMPAX and Connectivity Manager functionality, you must migrate to Connectivity Manager 2.2.1 or 2.3:
  - Report viewing in the IMPAX Text area
  - IHE workflows
  - MPPS communication from modalities
  - Audit messaging
  - Language support for Latin 4 character sets

This guide covers how to manage Broker data with a traveling server, but full instructions on migrating your Broker data to Connectivity Manager are provided in the appropriate version of the *Connectivity Manager Migration Guide*.

Note:

To continue to use PACS Broker 1.5.3, 1.5.4 or 1.5.5—and if the preceding circumstances do not apply—install the PACS Broker DICOM Interface SU2.

You can also install or upgrade the versions of the following products before upgrading to IMPAX 6.5.1. These components are optional and may not be used by all sites.

- If intending to use the IMPAX Reporting integration with the IMPAX Client, IMPAX RIS must be upgraded to version 5.4.1. For upgrade instructions, refer to the *IMPAX RIS InstallShield Technical Manual*.
- TalkStation must be upgraded to TalkStation 3.2 or 4.0. For instructions on upgrading TalkStation, refer to the *TalkStation 4.0 Client Upgrade and Migration Guide* and the appropriate version of the *TalkStation 4.0 Server Upgrade Guide*.
- Audit Manager. For installation instructions, refer to the *Audit Manager 1.2 Installation, Upgrade, and Configuration Guide*.

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)

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
Network interfaces	100/1000 Mbps

Component	Requirements
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).

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.

Allocating disk space for Oracle disk-to-tape backups
(Topic number: 121408)

Oracle disk-to-tape backups require significant disk space, as a minimum of two backups must be kept on disk. In order to accomodate 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.

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 Symmetrix DMX series	StorageTek (STK)	D series B series

Manufacturer	Model	Manufacturer	Model
	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.

Allocating disk space for Oracle disk-to-tape backups

(Topic number: 121408)

Oracle disk-to-tape backups require significant disk space, as a minimum of two backups must be kept on disk. In order to accomodate 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.

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.

Component	Requirements
	Note: These servers must have a DVD-ROM drive present for IMPAX installation purposes.
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.

Component	Requirements
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.
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).

Component	Requirements
Example systems	**Preferred:** HP ML370, DL380 (may be deployed with VMware ESX 3.5)

Component	Requirements
	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:** 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)

Component	Requirements
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.

Component	Requirements	
	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 PCle for Coronis BarcoMed PCle for Nio BarcoMed PCle 5MP2FH (only with monitor MF GD-5621HD) MXRT 2100/5100/7100 (not sold anymore but still supported) MXRT5200 (covers 98% of the diagnostic requirements) MXRT200 and 7300 (high-end board for IMPAX Clinical

Component	Requirements	
		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.

System requirements for upgrading standalone stations

(Topic number: 114785)

Existing IMPAX standalone stations can be upgraded to IMPAX 6.5.1:

- If they are on IMPAX 6.5 and running on Windows 7 (host operating system) and Windows Server 2008 (guest operating system) using VMware Player.

  or

- If they are currently running on Windows XP and if they meet the minimum hardware requirements. If running SQL Server 2000, an upgrade to SQL Server 2008 is required. (If running SQL Server 2005, this version can be retained.)

Follow the procedures in the *IMPAX 6.5.1 Standalone Upgrade Guide*.

Stations that do not meet the minimum hardware requirements or that require an operating system upgrade cannot be upgraded. Instead, a new standalone installation must be performed, following the procedures in the *IMPAX 6.5.1 Standalone Installation and Configuration Guide*.

Component	Minimum hardware requirement for standalone upgrade
Workstation	HP xs6600 or equivalent
RAM	4 GB
CPU	1 x Dual-Core (Intel XEON 52xx)
Video	For enhanced CT/MR navigation, minimum BARCO MXRT-5200

Performing initial installations

2

Only certain IMPAX installations can be performed during the preparing to upgrade period. In many cases, installation details are provided in one of the IMPAX 6.5.1 guides listed in *IMPAX installation, configuration, and upgrade guides* (refer to page 21).

1. Developing a core server plan

(Topic number: 6708)

We recommend specific hardware and software for the various IMPAX 6.5.1 cluster components. Use these requirements to assess which existing servers to keep and upgrade, and which to replace with new servers. Based on the requirements in *IMPAX hardware and software requirements* (refer to page 29) assess your current IMPAX server stations. List which hardware and software components on these stations must be upgraded to make the station function with the IMPAX 6.5.1 software.

Compare the time and costs of these upgrades against the time and cost involved in purchasing new hardware and installing the appropriate software on it. Use this to determine which stations you will reuse and which will be replaced.

Also consider site performance—measure the time to acquire the first image. If current performance is inadequate or borderline, this may be another reason to replace some of the equipment.

If upgrading a WEB1000-only site, you must install all IMPAX 6.5.1 software on new (or redeployed) servers. You cannot upgrade WEB1000 servers to IMPAX 6.5.1 servers.

Assessing cluster configurations

(Topic number: 6723)

Then consider your cluster configuration. If currently using a standalone, single-server, or single-host Server configuration, you could consider switching to a multi-host configuration to improve

performance. In AS3000 clusters, the additional components could be installed under Windows (mixed-host configuration). For supported upgrade configurations, refer to *Valid cluster configurations* (refer to page 12).

If your site is part of a multi-cluster configuration, more study and report data will be coming through than if it were not. Therefore, ensure that the cluster configuration you select will meet these data requirements.

Defining Curator configuration

(Topic number: 9938)

The IMPAX Curator process is responsible for compressing incoming images into the Mitra Wavelet format and storing them in the web cache. Wavelet images are displayed progressively, which often results in faster image display. Curator is an optional component, but is beneficial for most sites.

You must decide whether to install Curator with other AS300 server components (for example, on a Network Gateway station) or on a dedicated server. You can also distribute the load amongst multiple Curator servers. For 5.2 and 5.3 upgrades, we recommend that the new Curator server be used in the training server cluster during the preparing to upgrade period. Curator runs only on the Windows operating system, not on Solaris.

For more Curator information, 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*.

2. Installing external software on new servers

(Topic number: 6666)

If, through your analysis, you determine that you will be adding new AS300 or AS3000 server stations to your cluster, you can install the required external (that is, non-Agfa) software on these stations during the preparing to upgrade period. This is also the case when migrating a WEB1000 site.

For details on how to install external software on a new single-host, Database Server, Archive Server, or Network Gateway, refer to the *IMPAX 6.5.1 AS300 Installation and Configuration Guide* or the *IMPAX 6.5.1 AS3000 Installation and Configuration Guide*.

All new AS300 servers must be installed under Windows Server 2008. The IMPAX cluster can contain a mix of Windows 2003 and Windows 2008 AS300 servers. Therefore, you can replace or add some AS300 servers under Windows 2008 without having to replace all of them. The new ones can run on Windows 2008 while the upgraded ones remain on Windows 2003.

In the *IMPAX 6.5.1 AS300 Installation and Configuration Guide*, Oracle on Windows is the recommended database for new installations. However, when installing a new IMPAX AS300 Database Server as part of the upgrade, if SQL Server was previously used, then you must install SQL Server (refer to page 45) as part of the IMPAX 6.5.1 upgrade.

Migrating an IMPAX database from SQL Server to Oracle for Windows is not documented. To do this, you must involve Agfa Professional Services.

Installing SQL Server 2008

(Topic number: 96471)

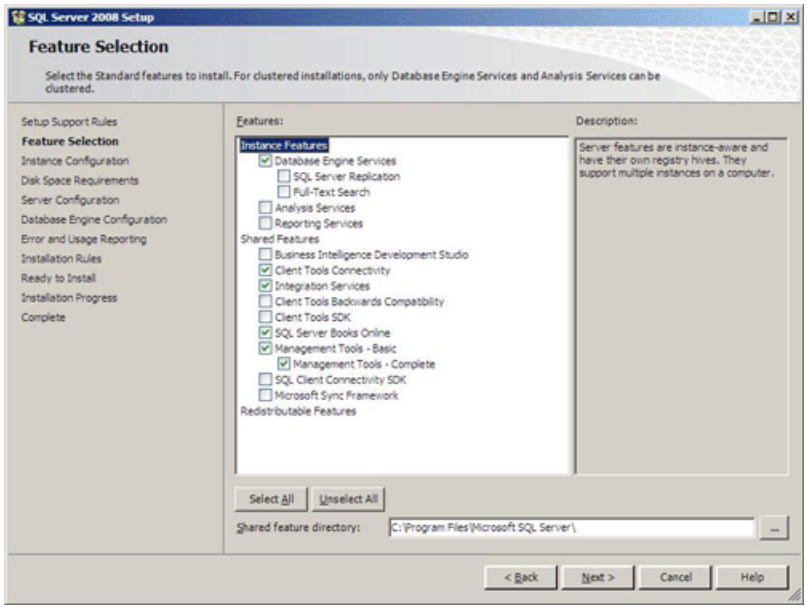
Before beginning the installation, make note of the sa password to use, as you will be prompted to enter it.

To install SQL Server 2008

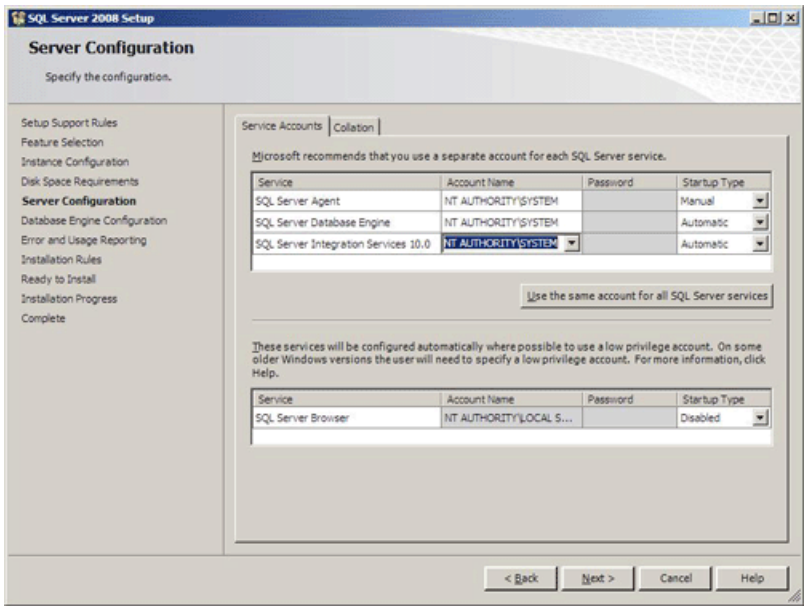
1. Log into Windows as an administrator-level user.
2. Launch the installer and select **Installation** from the left-hand menu of the SQL Server Installation Center.

> **CAUTION!**
>
> If the .NET Framework is not installed and enabled, the SQL Server 2008 RTM installation may fail on Windows Server 2008. This problem occurs because installation of the .NET Framework 3.5 is a prerequisite for the SQL Server 2008 installation and on Windows Server 2008, .NET Framework 3.5 is not installed by default but is included as a Windows component. It is installed during the installation of IIS 7.0 For instructions on how to install IIS 7.0, see the topic "Installing IIS 7.0 in Windows Server 2008" (Topic number 96439) in the *IMPAX 6.5.1 Application Server Installation, Upgrade, and Configuration Guide*.

3. To perform a new installation of SQL Server 2008, select the first option, **New SQL Server stand-alone installation or add features to an existing installation**.
4. If asked whether or not you want to run this application, click **Run**.
5. To install a permanent version of SQL Server 2008, confirm that the product key exists and click **Next**.
6. To accept the license terms and conditions, on the License Terms screen, read the license agreement and select the relevant checkbox.
7. To allow the Installation Wizard to install or update SQL Server 2008, on the Setup Support files screen, click **Install**.
8. Wait until all components are installed and configured, then click **Next** on the Setup Support Rules screen. Ensure that no significant errors exist.
9. On the Feature Selection Page screen, select the required components (as in the image that follows). Click **Next**.



10. On the Instance Configuration screen, select **Default instance**. Click **Next**.
11. The Disk Space Requirements screen verifies that sufficient disk space exists for the features you have selected. Click **Next**.
12. On the Server Configuration screen, on the Service Accounts tab, select **NT AUTHORITY\SYSTEM** as the Account Name for the login accounts for SQL Server services (as in the image that follows). Click **Next**.



13. On the Database Engine Configuration screen, on the Account Provisioning tab, select **Mixed Mode (SQL Server authentication and Windows authentication)** and type the sa (system administrator) password.
14. To add the administrative user, click **Add**.

15.
16. On the Ready to Install screen, click **Install**.
17. On the Installation Progress screen, click **Next**.
18. On the Complete screen, click **Close**.
19. Close the SQL Server Installation Center.
20. Restart the computer and log into Windows as an administrator-level user.

Stopping SQL Server 2008 services

(Topic number: 109422)

Before proceeding with the next task, stop the Windows SQL Server services, if they have been started.

To stop SQL Server 2008 services

1. Open the Windows Administrative Tools.
2. Select **Services**.
3. Select each of the following services in turn and click **Stop Service**, if needed:
   a. **SQL Server Full Text Search**
   b. **SQL Server Full Text Filter Daemon Launcher**
   c. **SQL Server Browser**
   d. **SQL Server Integration Services 10.0**
4. Close the Services window.

Upgrading SQL Server 2008 to SQL Server 2008 SP1

(Topic number: 107523)

The SQL Server 2008 SP1 executable file is **SQLServer2008SP1-KB968369-x86-ENU.exe** (32-bit). You must acquire this file from Microsoft; for example, you can download it from the Microsoft website at http://www.microsoft.com/downloads/en/details.aspx?FamilyID=66ab3dbb-bf3e-4f46-9559-ccc6a4f9dc19

Before running the installer, ensure that you know the sa (system administrator) database password, as you must enter it during the installation. Install the Service Pack after installing the software and stopping the SQL services.

To upgrade SQL Server 2008 to SQL Server 2008 SP1

1. Launch the SP1 installer.
2. If you see a security warning, click **Run**.
3. On the Welcome screen, click **Next**.
4. On the License Terms screen, select **I accept the agreement**. Click **Next**.
5. On the Feature Selection screen, accept the default selections. Click **Next**.

6. On the Check Files in Use screen, wait while the processes are identified. Then, click **Next**, even if some locked files are found.
7. On the Ready to Update screen, click **Update**.
8. On the Update Progress screen, wait until the components are upgraded or installed, then click **Next**.
9. If the Computer Reboot Required prompt appears, click **OK**.

   This will not automatically restart the computer.
10. On the Installation Complete screen, click **Close**.
11. Restart the computer.

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

CAUTION!

Do not attempt to start IMPAX at this point. If you start IMPAX now, the mvf user account will be locked and you will not be able to log into the MVF database. If the mvf user account becomes locked, see Troubleshooting: Unlocking the mvf user account for instructions on how to unlock the account.

Troubleshooting: Server name registered in SQL Server is incorrect

(Topic number: 7625)

Issue

If the server name registered in SQL Server is not the same as the server name registered in Windows, you must update the server name in SQL Server.

Details

This discrepancy may happen if you use a ghost image when installing the third-party applications.

Solution

To check the server name registered in Windows

1. Right-click **My Computer** and select **Properties**.
2. Switch to the **Computer Name** tab.

   The server name is listed as the full server name.

To check the server name registered in SQL Server

1. In a SQL Server query window, type **select @@servername**

To update the server name registered in SQL Server

1. In the SQL Server query window, type:

   sp_dropserver *old_server_name*

   go

   sp_addserver *server_name_as_in_Windows*, local

   go

3. Obtaining Server license keys

(Topic number: 7637)

IMPAX uses software license keys that are unique to the station on which the software is installed. One license key is required for the Network Gateway and a separate license key must be obtained for the Archive Server (even if using PACS Store and Remember archiving).

Obtaining Server licenses for Windows stations

(Topic number: 10699)

To obtain new license keys, if this is required, email licensekey@agfa.com. To generate the license keys, Agfa must know the Ethernet MAC (Media Access Control) address of the server.

To obtain Server licenses for Windows stations

1. For each Windows server, open a command prompt and type **ipconfig /all**.

   The MAC address of all Ethernet cards installed on the station are listed. You can use any of these to generate the license from.

2. Copy one of the returned MAC addresses to a secure place.

   Ensure that you copy down the address exactly as it appears, including leading zeroes.

   Note:

   The MAC addresses contain only the alphanumeric characters 0-9 and A-F.

3. To obtain a license key for the server, send the MAC address information to licensekey@agfa.com, along with the type of component being installed on that server.

Obtaining Server licenses for Solaris stations

(Topic number: 10701)

To obtain new license keys, if this is required, email licensekey@agfa.com. To generate the license keys, Agfa must know the Ethernet MAC (Media Access Control) address of the server.

To obtain Server licenses for Solaris stations

1. On a Solaris station, confirm that the Ethernet is connected.
2. Log in as the **root** user and open a terminal window.
3. Type

   arp `uname -n`

   or

   arp $(uname -n)

   The MAC addresses for all connections are returned, which is the information Agfa requires to issue a license.
4. To obtain a license key for the server, copy and send the returned information to licensekey@agfa.com, along with a description of the type of component being installed on that server.

4. Installing hardware and software on a new Application Server

(Topic number: 10769)

To prepare a server for an IMPAX Business Services installation, you must install the appropriate hardware and external software on it. For upgrades, you have the option of staying with Windows Server 2003 or upgrading to Windows Server 2008.

External software: Order of installation tasks

(Topic number: 11238)

You must install and configure the software on the Application Server in the order it is listed. For more information on installing the required external software, refer to the documentation provided with the software or consult the vendor's website.

Note:

If connecting to a SQL Server Database Server, you do not have to install the Oracle 10g Client.

Windows Server 2003

Order	Installation or configuration task
1	Installing Windows Server 2003
2	Upgrading Windows Server 2003 to Windows Server 2003 SP2
3	Setting the primary DNS suffix

Order	Installation or configuration task
4	Configuring Windows Server 2003
5	Switching to Control Panel classic view for Windows 2003
6	Partitioning disks on the Application Server on Windows 2003
7	Installing IIS 6.0 on Windows 2003
8	Installing ASP.NET
9	Installing and configuring pcAnywhere 12.5
10	Installing and configuring the Oracle 10g Client for Windows
11	Installing and configuring antivirus software
12	Installing Adobe Reader

Windows Server 2008

Order	Installation or configuration task
1	Installing Windows Server 2008
2	Setting the primary DNS suffix
3	Configuring Windows Server 2008
4	Upgrading Windows Server 2008 to Windows Server 2008 SP2
5	Partitioning disks on the Application Server on Windows 2008
6	Adding roles and role services in Windows 2008
7	Configuring IIS logging
8	Installing AD LDS
9	Installing and configuring pcAnywhere 12.5
10	Installing and configuring the Oracle 10g Client for Windows
11	Installing and configuring antivirus software
12	Installing Adobe Reader

5. Installing a training server cluster

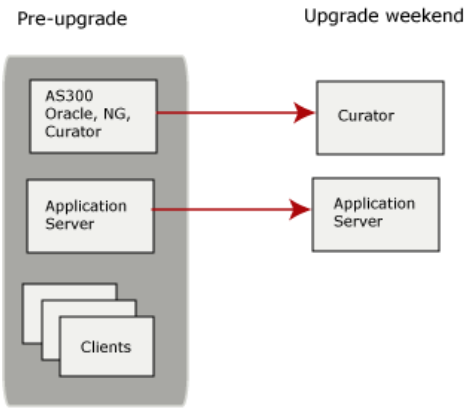
(Topic number: 9904)

A training server cluster is set up with a new (unmigrated), temporary IMPAX 6.5.1 AS300 database. It is used during the preparing to upgrade period for:

- Training users on IMPAX 6.5.1 features.
- Migrating user data from IMPAX 4.5, 5.2, or 5.3 or from WEB1000 into the IMPAX 6.5.1 ADAM database (the database used on the Application Server), and configuring those users.
- Setting up worklists in IMPAX 6.5.1, for later migration into the production database.

We recommend the following configuration for the training server cluster:

1. Initially setting up the new Curator station as an IMPAX AS300 server containing an Oracle Database Server, Network Gateway, and Curator components, by following the instructions summarized in *Setting up an AS300 single-host server* (refer to page 53). (Even if staying with SQL Server on the production Database Server, we recommend setting up the training server under Oracle.)
2. Installing the IMPAX Documentation and IMPAX Business Services software on the Application Server computer, as described in *Installing the IMPAX documentation* (refer to page 54), *Installing the IMPAX Business Services* (refer to page 55), and following topics.
3. Setting up one or more IMPAX Client stations, connected to this Application Server, to use for training and configuration. For instructions, refer to the *IMPAX 6.5.1 Client Installation, Upgrade, and Configuration Guide*.



Other configurations are also possible. The key is installing the Application Server software on the station designated for that purpose, but using with a *temporary* IMPAX 6.5.1 AS300 server. Regardless of the exact configuration, you perform all user data export and migration on the Application Server computer.

CAUTION!

If planning to replace the existing 5.2 or 5.3 server with a new IMPAX 6.5.1 AS300 server, do not use that actual server as part of the training server system. Data must be migrated from the training server to the 6.5.1 production server, so each server must be separately installed.

During the upgrade weekend, worklist data is migrated from the training server system to the production IMPAX 6.5.1 server, and the training server components are reconfigured as a dedicated Application Server and Curator (if used). These procedures are documented in the *IMPAX 6.5.1 AS300 Upgrade and Migration Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.1* and the *IMPAX 6.5.1 AS3000 Upgrade and Migration Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.1*.

Setting up an AS300 single-host server

(Topic number: 7104)

During the preparing to upgrade period, set up the future Curator station as a single-host AS300 Oracle station, for use within the training server cluster. Details for these installation procedures are available in the *IMPAX 6.5.1 AS300 Installation and Configuration Guide*.

In a single-host configuration, Windows-based Database, Archive, and Network Gateway components are all installed on one "box" or station. The table that follows presents the single-host installation steps to follow. Perform these tasks in the order listed.

Installing external hardware and software

☑	Action
	Install either Windows Server 2003 R2 software followed by Windows Server 2003 R2 Service Pack 2 or Windows Server 2008 followed by Windows Server 2008 Service Pack 2.
	Activate Windows
	Configure the Windows Control Panel to display in Classic mode
	To avoid memory allocation problems, change the page file setting
	Change the Windows Event viewer to overwrite events as necessary
	Create a temp directory
	Configure Internet Explorer to support security certificate validation
	Partition disks appropriately for database, volumes, logs, cache, and ghost
	Install Oracle Server for Windows
	Install Symantec Ghost 8, Enterprise Edition
	Install IIS 6.0 (Windows Server 2003)
	Using Control Panel, enable Automatic Updates for critical Windows updates
	If you are running Windows 2003 with an earlier version of Internet Explorer, upgrade to Internet Explorer 8. (Internet Explorer 8 is included with Windows Server 2008.)

☑	Action
	Launch Internet Explorer and enable active content for the IMPAX Knowledge Bases
	If an external modem is supplied, install it
	Install antivirus software
	Install and configure pcAnywhere 12.5
	Install the latest version of Adobe Reader

Installing IMPAX software

☑	Action
	Obtain license keys (refer to page 49) by emailing Agfa the server MAC address
	Install the appropriate IMPAX AS300 packages
	Generate the portable password file
	Enable Data Execution Prevention (DEP) for all programs and services
	Synchronize the server clock with an appropriate time server

Installing the IMPAX documentation

(Topic number: 15523)

The IMPAX 6.5.1 documentation is installed on the Application Server.

Before installing the IMPAX 6.5.1 documentation, ensure that you have uninstalled any earlier IMPAX documentation.

To install the IMPAX documentation

1. Insert the IMPAX Documentation DVD.
2. From the DVD root, double-click **IMPAXDocumentationSetup.exe**.

   A `Preparing to install` message appears.
3. On the Welcome screen, click **Next**.
4. On the Setup Type screen, select the appropriate option and click **Next**.
   - To install all documentation in all available languages (up to 24 languages), select **All Documentation**.
   - To install all English-language documentation, select **All English Documentation**. This is the default.
   - To select which documentation to install in which languages, select **Select Documentation to Install**.

5. If you selected Select Documentation to Install, on the Choose Features screen, you can select particular Knowledge Bases or languages to install.
   - To install the IMPAX Client Knowledge Base in two or more languages, click  beside the name of the language to install and select **This feature will be installed on the local hard drive**. (Note that English must be installed.)
   - To **not** install the IMPAX Server, IMPAX Application Server, or IMPAX Client documentation, click  beside the appropriate label and select **This feature will not be available**.
6. On the Ready to Install the Program screen, click **Install**.

   Installation progress messages are displayed.
7. On the InstallShield Wizard Completed screen, click **Finish**.

The selected IMPAX documentation is now installed. Shortcuts appear in the Start menu and on the desktop. For additional details on viewing the translated documentation on the IMPAX Client see Viewing translated documentation from the IMPAX Client Help menu

Configuring IIS error messages on Windows Server 2003

(Topic number: 7725)

You must configure IIS to display the correct error message if the Knowledge Base cannot be found.

To configure IIS error messages on Windows Server 2003

1. Open the Windows Administrative Tools and select **Internet Information Services (IIS) Manager**.
2. Expand ***computer_name*** > **Web Sites** > **Default Web Site**.
3. Right-click the **Documents** file and select **Properties**.
4. Switch to the **Custom Errors** tab.
5. In the list of Error messages for HTTP errors, select **404**.
6. Click **Edit**.
7. Under Message Type, select **URL**.
8. In the URL field, type **/AgfaHC.LanguageRedirect/LanguageRedirect.aspx**.
9. To close the two dialogs, click **OK** in each.
10. To close the Internet Information Services (IIS) Manager window, select **File** > **Exit**.

Installing the IMPAX Business Services

(Topic number: 9873)

The IMPAX Business Services are installed on the Application Server.

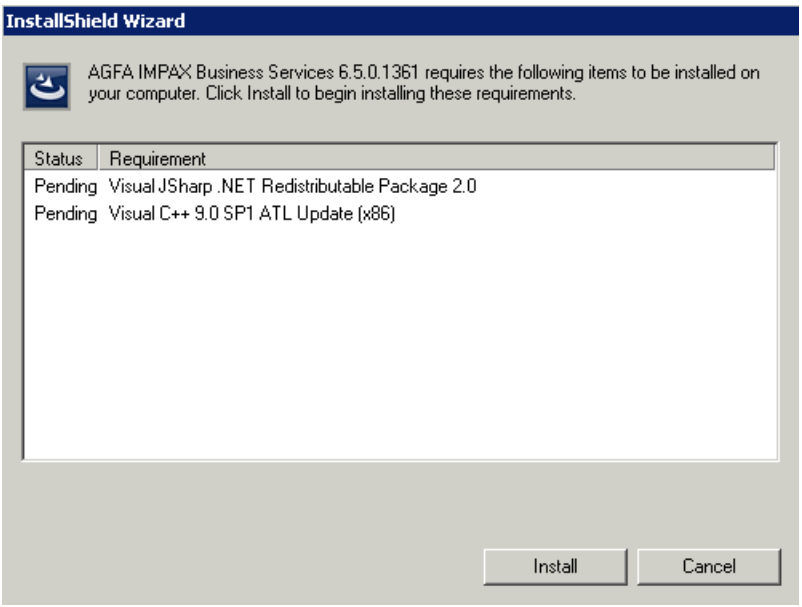
To install the IMPAX Business Services

1. Insert the IMPAX Business Services CD.
2. Navigate to the appserver folder, which contains the Business Services software.
3. Run **AGFA IMPAX Business Services Setup.exe**.
4. Select the required software packages to install.

   The following packages must be installed on the Application Server prior to the upgrade.

   - Visual JSharp .NET 2.0
   - .NET Framework 3.5 SP1
   - Visual C++ 9.0 SP1 ATL Update (x86)

   If any of these packages are listed in the InstallShield Wizard dialog, select them. If any of these packages do not appear in the list, those packages are already installed.



5. Click **Install**.
6. On the Welcome screen, click **Next**.
7. At the license agreement, select the **I accept the terms in the license agreement** checkbox. Click **Next**.
8. On the Web Services Installation Folder screen, click **Change**.
9. Select **E:\wwwroot** as the location for the Web Services. Click **OK**.

   Changing the location of the Web Services installs all of the web services to the same directory.

Note:

We recommend installing the Web Services to E:\wwwroot for enhanced security. The installation folder name must not contain any special characters.

10. Click **Next**.
11. On the Setup Type screen, click **Custom**. Click **Next**.
12. If you have an IMPAX RIS to connect to, under RIS Web Services, select **This feature will be installed on local hard drive**. Click **Next**.

    By default, this option is not selected. Details on completing the connection to the RIS are available in "RIS configurations" (topic number 11329) in the *IMPAX 6.5.1 Application Server Knowledge Base*.
13. Click **Install**.

    The IMPAX Business Services are installed.
14. To continue with the configuration after the installation is complete and verified, select the **Launch Configuration tool** checkbox.
15. Click **Finish**.

The IMPAX Business Services are installed. If selected, the Configuration Tools are displayed.

Verifying the Business Services installation

(Topic number: 7598)

You can verify the IMPAX Business Services installation by checking whether IIS works.

To verify the Business Services installation

1. Open a web browser and connect to **http://localhost**.
2. Verify that the "IMPAX Documentation" page is displayed.

   or

   If the IMPAX Documentation has not been installed on the server, that the "Welcome to IMPAX 6.5.1" page is displayed.

Order of Application Server configuration

(Topic number: 11273)

You must configure the Application Server software in the order it is listed in this topic. Configuration details are available in the *IMPAX 6.5.1 Application Server Installation, Upgrade, and Configuration Guide*.

1. Importing the portable password file
2. Connecting to the Agfa IMPAX database
3. Extending the database schema
4. Armoring the Application Server
5. Adding the LDAP IP address to the Application Server's hosts file on Windows Server 2003
6. Adding the LDAP IP address to the Application Server's hosts file on Windows Server 2008
7. Creating an SSL certificate request

8. Submitting a certificate request to a certificate authority
9. Importing an SSL certificate in the Security Wizard
10. Creating the administration account
11. Connecting to the ADAM/AD LDS server
12. Compressing web services communication on the Application Server
13. Configuring the image upload server
14. Connecting IMPAX Application Server to Audit Manager
15. Setting the logging levels
16. Synchronizing clocks on Windows-based IMPAX systems

Preparing a training plan

(Topic number: 55171)

Without the full participation of the entire radiology staff, the upgrade from IMPAX 5.2 or 5.3 to IMPAX 6.5.1 will not run smoothly. Clinicians need to be trained as well. We therefore recommend that a formal training plan be put in place.

Before preparing the plan, determine:

- Which users get one-on-one training and which can be trained in groups. Radiologists and key clinicians and technologists are normally trained one-on-one.
- How long each one-on-one and group session needs to be. Typical length is one to two hours.

Also plan to follow up with everyone after their initial training session, and plan to make Quick References available at all training stations.

Once these parameters are set, you can prepare the training schedule. Book one-on-one training with each individual by name. For groups, schedule several blocks of time for training and record attendance.

6. Restoring the unmodified uname script

(Topic number: 119864)

Important!

This topic applies only to sites that installed IMPAX 5.2 or 5.3 on Solaris 5.10 servers.

When IMPAX 5.2 or 5.3 was installed, a modified version of the uname script was used, while the original, unmodified script was backed up under a different name, such as uname.backup. When IMPAX 5..2 or 5.3 servers running Solaris 5.10 are upgraded to IMPAX 6.5, the original, unmodified version of the uname script is required. To upgrade from IMPAX 5.2 or 5.3 to IMPAX 6.5, you must restore the unmodified version.

Note:

This procedure is required on the Database Server only. In an Oracle Data Guard environment, this procedure must be done on the primary Data Guard server, but it would also be beneficial perform the procedure on all the IMPAX 5.2 and 5.3 servers that are running on Solaris 10.

To restore the unmodified uname script

1. Log into the Database Server as the **root** user.
2. Change to the **/sbin** directory.
3. Back up the modified uname script by typing

   cp uname uname.agfa
4. Locate the unmodified backup script.
5. Restore the unmodified backup script by typing

   cp *backup* uname

   where *backup* is the name of the original, unmodified script that was backed up when IMPAX 5.2 or 5.3 was installed.

7. Installing the IMPAX 6.5.1 Migration Toolbox

(Topic number: 9911)

The tools in the IMPAX 6.5.1 Migration Toolbox automate some of the migration and upgrade tasks. The tools are run from a command prompt and do the following:

- Extract relevant information from the database.
- Transform the database schema and data.
- Coordinate the execution of tools across multiple machines.

Install the Migration Toolbox on the following servers, as applicable:

- The IMPAX 5.2 or 5.3 Database Server
- The WEB1000 Server
- The IMPAX 4.5 Database Server
- The IMPAX 6.5.1 Application Server component of the training server
- The traveling server

You can optionally install the tools on any other computer with an MVF connection to the IMPAX or WEB1000 database.

Installing the Migration Toolbox on a Windows station

(Topic number: 11493)

To install the Migration Toolbox, you must be logged into Windows as an administrator-level user. The migration tools are on a dedicated Migration CD.

To install the Migration Toolbox on a Windows station

1. Insert the IMPAX Migration CD.
2. Navigate to the **win32** directory and double-click **impax_65_migration-winpkg-6.5.1.*xxx*.exe** where *xxx* is the build number.
3. In the InstallShield Self-extracting EXE dialog, click **Yes**.

   Setup progress dialogs appear.
4. On the Welcome screen, click **Next**.
5. On the Select Features screen, select the checkboxes of the features that you want to install, and clear the rest.

   When migrating a SQL Server database, select all the features except the **Oracle on Windows Migration Tools**.
6. Click **Next**.
7. To continue, click **Install**.
8. If you selected the Worklist and Report Migration Tools on the Select Features screen, when prompted, press any key to continue.
9. On the Setup Complete screen, click **Finish**.

The Migration Tools are installed in the C:\mvf-mig6\bin directory, with the following exceptions for SQL Server databases:

Executable	Installed in
migrate-users	C:\mvf-mig6\UserMigration
Training/Traveling Server (MigrateTRServer.exe)	C:\mvf-mig6\MigrateTRServer

Accessing the IMPAX migration software repository

(Topic number: 60454)

To access the IMPAX migration software repository when upgrading the AS3000 Database Server, use the following procedure which accesses the ISO image without creating a local software repository.

To access the IMPAX migration software repository

1. Login as user **root**.
2. At a terminal window, type

lofiadm -a /*ISO_directory*/IMPAXMigration.iso.

The operating system outputs */dev/lofi/1* or something similar.

3. Type

   mount –F hsfs /dev/lofi/1 /mnt1.

4. Change to the **/mnt1** directory (or whatever mount point you are using).

Installing the Migration Toolbox on a Solaris station

(Topic number: 11495)

Important!

Before installing the Migration Toolbox on a Database Server running Oracle Data Guard, remove any existing IMPAXOracleUpgrade package. After removing the package, delete the /usr/mvf-mig6 directory.

The migration tools are on a dedicated Migration CD.

To install the Migration Toolbox on a Solaris station

1. Log in as the **root** user and open a terminal window.
2. Insert the Migration Tools CD.
3. Navigate to the SunOS5 directory.
4. To install the migration tools, type

   pkgadd -d IMPAXmigration.pkg

5. When asked which packages to process, type the package name or **all** to process them all.
6. When asked if you want to continue with the installation, type **y**.

   The Migration Tools are installed in the /usr/mvf-mig6/bin directory.

7. Because environment variables are updated during the Migration Toolbox installation, if you have any terminal windows open with the mvf user login, you must log out and log back in again.

8. Setting up a connection to the 4.5, 5.2, or 5.3 database

(Topic number: 6626)

To migrate IMPAX user data from the 4.5, 5.2, or 5.3 mvf database to the 6.5.1 ADAM database on the Application Server, you must connect the Application Server to the IMPAX 4.5, 5.2, or 5.3 Database Server. The procedure differs depending on whether you are connecting to an AS300 server (SQL) or an AS3000 server (Oracle).

Setting up a connection to a previous-version AS300 database

(Topic number: 6627)

Use this procedure to connect the Application Server to an IMPAX 4.5, 5.2, or 5.3 AS300 Database Server.

To set up a connection to a 4.5, 5.2, or 5.3 AS300 database

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 **SQL Server** from the list. Click **Finish**.
6. In the Name field, type the appropriate value:

   For IMPAX 4.5 upgrades, use **mvf_45**.

   For IMPAX 5.2 upgrades, use **mvf_52**.

   For IMPAX 5.3 upgrades, use **mvf_53**.

   The *mvf* name is already being used by the temporary IMPAX 6.5.1 AS300 server.
7. In the Description field, type **mvf** (lowercase).
8. In the Server field, type or select the name of the 4.5, 5.2, or 5.3 AS300 server. Click **Next**.
9. Set the authentication according to the authentication used at the site (**Windows NT** or **SQL Server**).

   If using SQL Server, you may also have to select the **Connect to SQL Server** checkbox and supply a Login ID and Password.
10. If necessary, change the network library by clicking **Client Configuration**. Under Network libraries, select the protocol used to communicate with the SQL server at your site: either **TCP/IP** (the default) or **Named Pipes**. Click **OK**.
11. Click **Next**.
12. Change the default database to **mvf** (lowercase). Click **Next**.
13. Click **Finish**. Click **OK**.

You can now run Migration Tools user commands against this 4.5, 5.2, or 5.3 server.

Setting up a connection to a previous-version AS3000 database

(Topic number: 6628)

Use this procedure to connect the training server to an IMPAX 4.5, 5.2, or 5.3 AS3000 Database Server. It assumes that you have already installed Oracle 10g Client on the Application Server. If not,

do so by following the first two procedures in the "Installing and configuring the Oracle 10g Client" section in the *IMPAX 6.5.1 Application Server Installation, Upgrade, and Configuration Guide*.

Connecting to a 4.5, 5.2, or 5.3 AS3000 database

(Topic number: 57455)

The Application Server component of the training server is connected to the previous AS3000 database to get data from it and migrate it into its own ADAM database.

To connect to a 4.5, 5.2, or 5.3 AS3000 database

1. Select **Start** > **All Programs** > **Oracle - *Oracle_instance_name*** > **Configuration and Migration Tools** > **Net Configuration Assistant**

   where *Oracle_instance_name* is the name typed when installing Oracle Client.
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** and click **Next**.
4. In the Net Service Name Configuration dialog, select **Add** and click **Next**.
5. In the Service Name field, type **MVF** and click **Next**.
6. From the list of protocols, select **TCP** and click **Next**.
7. In the TCP/IP dialog, type the host name of the 4.5, 5.2, or 5.3 AS3000 server.
8. Accept the default port number (1521) and click **Next**.
9. Select **Yes, perform a test** and click **Next**.

   The first time the test runs, you see an error message. Ignore the error.
10. Click **Change Login**.
11. In the Username and Password fields, type **mvf**. Click **OK**.

    The test is performed again. The connection should be successful.
12. Click **Next**.
13. In the Net Service Name field, ensure that **mvf_45**, **mvf_52**, or **mvf_53** appears and click **Next**.
14. At the prompt to configure another net service name, select **No** and click **Next**.
15. In the Net Service Name Configuration Complete dialog, click **Next**.
16. In the Naming Methods Configuration Complete dialog, click **Next**.
17. To close the Net Configuration Assistant dialog, click **Finish**.

Configuring the ODBC data source name

(Topic number: 57458)

Once the connection is made, define the ODBC data source name.

To configure the ODBC data source name

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*** and click **Finish**.

   Oracle_instance_name is the name typed when installing Oracle Client.
6. In the Data Source Name field, type the appropriate value:

   For upgrades from IMPAX 4.5, type **mvf_45**.

   For upgrades from IMPAX 5.2, type **mvf_52**.

   For upgrades from IMPAX 5.3, type **mvf_53**.

   The **mvf** name is already being used by the temporary IMPAX 6.5.1 AS300 server.
7. Type a description, if needed.
8. In the TNS Service Name field, type **mvf_45**, **mvf_52**, or **mvf_53**.
9. In the User Name field, type **mvf** (lowercase).
10. To save the changes and close the dialog, click **OK**.
11. To save the new source and exit the ODBC Data Source Administrator dialog, click **OK**.

9. Setting up a connection to the WEB1000 database

(Topic number: 6625)

Important!

This topic applies only to migrations from WEB1000 systems.

To migrate WEB1000 user data from the WEB1000 mvf database to the 6.5.1 ADAM database on the Application Server, you must connect the Application Server to the WEB1000 Server.

To set up a connection to the WEB1000 database

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 **SQL Server** from the list. Click **Finish**.
6. In the Name field, type **mvf_web**.

The *mvf* name is already being used by the temporary IMPAX 6.5.1 AS300 server.

7. In the Description field, type **mvf** (lowercase).
8. In the Server field, type or select the name of the WEB1000 Server. Click **Next**.
9. Set the authentication according to the authentication used at the site (**Windows NT** or **SQL Server**).

   If using SQL Server, you may also have to select the **Connect to SQL Server** checkbox and supply a Login ID and Password.
10. If necessary, change the network library by clicking **Client Configuration**. Under Network libraries, select the protocol used to communicate with the SQL server at your site: either **TCP/IP** (the default) or **Named Pipes**. Click **OK**.
11. Click **Next**.
12. Change the default database to **mvf** (lowercase). Click **Next**.
13. Click **Finish**. Click **OK**.

You can now run Migration Tools user commands against this server.

10. Transmitting studies to the training server

(Topic number: 9940)

To use the temporary AS300 server station for training, set it up as a remote station in the IMPAX 4.5, 5.2, or 5.3 cluster, and transmit some studies to it.

For details on how to do this, refer to "Transmitting studies" (topic number 000468) in the Service Tools component of the *IMPAX 5.2 Server Knowledge Base* or *IMPAX 4.5 Knowledge Base*.

11. Installing IMPAX 6.5.1 on new servers

(Topic number: 59217)

If replacing the existing IMPAX stations with new server stations or adding new stations to create a multi-host configuration, and for WEB1000-only sites that must use new stations, install the IMPAX 6.5.1 software on the new Database Server, Archive Server, or Network Gateway stations. For details regarding the installation and initial configuration, refer to the *IMPAX 6.5.1 AS300 Installation and Configuration Guide* or the *IMPAX 6.5.1 AS3000 Installation and Configuration Guide*.

Do not install dedicated Curator stations at this time. One Curator station is reserved for use as a training server during the preparing to upgrade period. It will be converted to a dedicated Curator during the upgrade period, at which point any other Curator stations can be installed as well.

12. Installing the IMPAX Installation Server

(Topic number: 7773)

You can set up an IMPAX Client Installation Server by running the IMPAXInstallationServerSetup.exe on a Windows-based server.

Setting up the Installation Server makes it easier to install the Client software from a central website. You can also use it to install updates to the Client software when they become available throughout the site and to remote Clients.

You may choose to install the Installation Server program on an IMPAX Application Server (in which case you can continue with *Running the IMPAX Installation Server package* (refer to page 67)) or on a separate, dedicated Windows-based server.

Note:

If your site has a large number of IMPAX Clients, or they are regularly updated, using an Application Server as an Installation Server may affect the performance of Clients connected to that Application Server. This is because the Clients all check for a new version every 30 minutes and, although staggered, performance issues have been reported when many Clients are downloading the new IMPAX Client software.

Therefore, we recommend:

- Using a third-party software distribution application (for example, Microsoft SMS or Altiris) to avoid saturation of the Application Server. Consult your regional Agfa representative for options.
- Placing the Installation Server on a dedicated server.

If you choose to install the IMPAX Installation Server package on a dedicated server, use the Web Server Certificate Wizard to create a certificate request to submit to a trusted certificate authority, and install the certificate. You must install the SSL certificate on the dedicated server before installing the IMPAX Installation Server package.

The Installation Server Setup package contains:

- The installers (or links) for the IMPAX Client prerequisites:
  - .NET Framework 3.5 SP1
  - Visual C++ 9.0 SP1
  - DirectX
- The IMPAX Client Installer
- A web page with links to:
  - IMPAX Client system requirements

- IMPAX Client installation instructions (available in 19 languages)
- Links to the IMPAX Client Installer
- Links to the individual perquisites

Running the IMPAX Installation Server package

(Topic number: 7758)

CAUTION!

Do not install the IMPAX Installation Server on a standalone IMPAX workstation (a workstation running the AS300, Application Server, and Client software).

The following explains how to install the IMPAX Installation Server to use as a distribution tool for Client installations and updates.

To run the IMPAX Installation Server package

1. From the IMPAX Client CD or a network location, run **IMPAXInstallationServerSetup.exe**.

   A Preparing to install message appears.
2. On the Welcome to the InstallShield Wizard for IMPAX Installation Server screen, click **Next**.
3. To install the application into C:\Inetpub\wwwroot\ClientInstaller, 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**.
4. On the Ready to Install the Program screen, click **Install**.

   The first installer runs.
5. On the Installation Wizard Completed screen, click **Finish**.

   Another installer starts. (It may start before the first one finishes.) The second one opens a command prompt that creates a manifest file.
6. On the second Installation Wizard Completed screen, click **Finish**.

   In the folder where the application was installed, several subfolders appear, including:
   - redist—contains the .NET Framework installers.
   - installer—contains the ImpaxClientSetup.exe, the IMPAX Client installation software.

For the updater service, which allows all installed Clients to receive automatic updates, public and private key pairs are installed in C:\Program Files\Agfa\IMPAX Client. Refer to "Configuring automatic Client updates" in the *IMPAX 6.5.1 Client Installation, Upgrade, and Configuration Guide*.

13. Running the Microsoft .NET Framework 3.5 SP1 installer package

(Topic number: 107096)

Important!

.NET Framework 3.5 SP1 must be installed prior to starting the Client installation. We recommend using Group Policies or SMMS to download and install .NET Framework 3.5 SP1. However, if these methods are not available, the .NET Framework 3.5 SP1 installer package is available.

The Microsoft .NET Framework 3.5 SP1 installer package is a modified version of the IMPAX Installation Server. It distributes the .NET upgrade to Client workstations throughout the site and to remote Clients.

A week prior to upgrading the IMPAX Client software, run the installer package on the Application Server or a dedicated Windows-based server. We recommend running the installer package during the site's off-hours as downloading and installing the Microsoft .NET framework can take over 30 minutes, depending on network speed.

To run the installer package on a dedicated server that does not already have the IMPAX Installation Server installed, when using https mode, you must use the Web Server Certificate Wizard to create a certificate request to submit to a trusted certificate authority, and install the certificate. You must then install the SSL certificate on the dedicated server before running the installer package.

If using http mode, you do not have to install the SSL certificate.

For more information, refer to "Installing an SSL certificate on a dedicated server" (topic number 7786) and "*Installing the IMPAX Installation Server* (refer to page 66)" (topic number 7773) in the *IMPAX 6.5.1 Client Installation, Upgrade, and Configuration Guide*.

Note:

The PACS Client Updater service downloads and installs the .NET Framework 3.5 SP1. The services run as administrator, so you do not have to log in as the administrator user.

To run the Microsoft .NET Framework 3.5 SP1 installer package

1. From the IMPAX Client CD or a network location, run **IMPAXInstallationServer_DotNet35Updater.exe**.
2. On the Welcome to the InstallShield Wizard for Agfa IMPAX Installation Server - .NET 3.5 SP1 Updater screen, click **Next**.
3. To install the application into C:\Inetpub\wwwroot\ClientInstaller, 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**.

4. On the Ready to Install the Program screen, click **Install**.

   The installer runs.

5. On the Installation Wizard Completed screen, click **Finish**.

14. Enabling automated installation of the IMPAX Client software from a command prompt

(Topic number: 7802)

Installation of the IMPAX Client can be completely silent, or automated. This can simplify an IMPAX Client rollout, and eliminates the need for any user input during the installation.

Through a line command issued on the client workstation, the various installation settings and their values can be specified; otherwise, defaults are applied. The command can be distributed to users through a batch file, or through a software distribution tool such as Microsoft Systems Management Server (SMS).

To enable automatic installation of the IMPAX Client software from a command line

1. At a command prompt, type

   ImpaxClientSetup.exe /S /v"*setting*=*value*… /quiet"

   where **/S** suppresses the initial InstallShield Wizard screen,

   and **/v** allows for the specification of installation settings and their values,

   and **/quiet** suppresses all the installation screens.

Installation setting	Description	Value
ALLUSERS	Specifies installation for current user only, or all machine users	Default—All users, if person installing has administrative privileges; otherwise, current user NULL—Current user 1—All users, if person installing has administrative privileges; otherwise, installation fails 2—All users, if person installing has administrative privileges; otherwise, current user Any other value—default is applied

Installation setting	Description	Value
USERNAME	User name	Default—Name registered during Windows installation
COMPANYNAME	Organization name	Default—Name registered during Windows installation
INSTALLDIR	Root installation directory	Default—C:\Program Files\Agfa\IMPAX Client
APPSERVER	Application Server name	Default—*blank*
AUTHENTICATION_TYPE	Authentication mode	Default—IMPAX authentication 1—IMPAX authentication screen prompts user for user ID and password 2—User ID and password of current Windows or Windows smart card user is used to log into IMPAX 3—Smart card authentication requires the user to have an NHS smart card to log into IMPAX Any other value—Default is applied

Spacing rules for installation settings

(Topic number: 7757)

When specifying installation settings values using the /v flag, certain rules regarding spacing of the settings must be followed.

- Leave no spaces between the /v flag and its settings. For example:

  /v"ALLUSERS=2" (valid)

  /v "ALLUSERS=2" (invalid)

- Separate each setting and value pair by a space from another setting and value pair. For example:

  /v**"ALLUSERS=2 USERNAME=Peter" (valid)**

  /v**"ALLUSERS=2USERNAME=Peter" (invalid)**

- Delimit spaces within a value with a \". For example:

  /v**"USERNAME=\"Peter Smith\"" (valid)**

  /v**"USERNAME=Peter Smith" (invalid)**

Examples of installation settings

(Topic number: 7801)

The following contains example combinations of settings to be used at the command line. Following each installation command is a table detailing what each value changes.

ImpaxClientSetup.exe /v"APPSERVER=radserver.radnet.healthorg.com ALLUSERS=NULL"

Initial InstallShield Wizard screen displayed?	Yes
All installation screens displayed?	Yes
User name	Agfa
Organization name	Agfa
Installation type	Current user
Installation directory	C:\Program Files\Agfa\IMPAX Client
Application server	radserver.radnet.healthorg.com
Authentication mode	IMPAX authentication

ImpaxClientSetup.exe /v"INSTALLDIR=\"C:\Rad Tools\Agfa\IMPAX Client\" APPSERVER=radserver.radnet.healthorg.com /quiet"

Initial InstallShield Wizard screen displayed?	Yes
All installation screens displayed?	No
User name	Agfa
Organization name	Agfa
Installation type	All users, if person installing has administrative privileges; otherwise, current user
Installation directory	C:\Rad Tools\Agfa\IMPAX Client
Application server	radserver.radnet.healthorg.com
Authentication mode	IMPAX authentication

ImpaxClientSetup.exe /S /v"APPSERVER=radserver.radnet.healthorg.com AUTHENTICATION_TYPE=2"

Initial InstallShield Wizard screen displayed?	No
All installation screens displayed?	Yes
User name	Agfa
Organization name	Agfa

Installation type	All users, if person installing has administrative privileges; otherwise, current user
Installation directory	C:\Program Files\Agfa\IMPAX Client
Application server	radserver.radnet.healthorg.com
Authentication mode	Windows authentication

15. Installing and running the Cross-Cluster Dictation Interlock tool

(Topic number: 48033)

The Cross-Cluster Dictation Interlock tool synchronizes the dictation status of studies between old and new IMPAX systems 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.

A dictation interlock already exists within a single IMPAX cluster, preventing two users from dictating the same study. This tool extends that interlock to two IMPAX clusters: the previous version and the new. It uses native components within IMPAX to send signals between the two systems that a study's dictation status has changed. During the installation and configuration, a new role and a service called Study Status Relay are created to convey and receive the messages.

Study statuses that are synchronized are the following:

- DICTATION_STARTED
- TRAINEE_DICTATION_STARTED
- INTERPRETATION_TRANSCRIBED
- INTERPRETATION_APPROVED
- DICTATION_COMPLETED
- TRAINEE_DICTATION_COMPLETED

Cross-Cluster Dictation Interlock installation prerequisites: IMPAX 5.2 or 5.3 upgrades

(Topic number: 48079)

The Cross-Cluster Dictation Interlock components are placed on the IMPAX 6.5.1 Application Server when the Business Services software is installed. You will find the components in the Tools sub-directory; for example, in C:\Program Files\Agfa\Impax Business Services\Tools\Cross-Cluster Dictation Interlock\Cross.Cluster.Dictation.Interlock_6.5.1.0.zip. You must extract the zip file. It contains both the 5.2/5.3 and the 6.5.1 components.

Select a computer in the IMPAX 5.2 or 5.3 cluster to place the Cross-Cluster Dictation Tool components on. It can be any computer running Windows, including a Client station, as long as that station does not get shut down or restarted frequently.

Copying the 5.2 or 5.3 Cross-Cluster Dictation Interlock components

(Topic number: 48082)

To communicate dictation status with the IMPAX 6.5.1 system, Cross-Cluster Dictation Interlock components must be added to a Windows-based computer in the IMPAX 5.2 or 5.3 cluster.

To copy the 5.2 or 5.3 Cross-Cluster Dictation Interlock components

1. On the 6.5.1 Application Server where the zip file was extracted, from the mvf-signal-relay directory, copy the mvf_signal_relay.exe and install_signal_relay.bat files.
2. On the IMPAX 5.2 or 5.3 computer to run the components on, in the C:\mvf\bin directory, paste the two files copied in the previous step.
3. Open a command prompt.
4. Change to the **C:\mvf\bin** directory.
5. Type **install_signal_relay.bat *remote_host_name***

   where *remote_host_name* is the host name or IP address of the Application Server that will be running the IMPAX 6.5.1 Cluster Dictation Interlock service.
6. Open the Windows Administrative Tools and select **Services**.
7. Start the service.

The install_signal_relay.bat file installs the mvf_signal_relay.exe as a Windows service, inserts default values into the map_ini, and creates a radiologist and a trainee radiologist users. These users are used by the service to change status when appropriate. The radiologist user is called *signal-relay* and the trainee radiologist is called *sig-relay-train*.

Updating map_ini values for Cross-Cluster Dictation Interlock

(Topic number: 48091)

For the connection between the 5.2 or 5.3 cluster and the IMPAX 6.5.1 cluster to work, some of the default values added to the 5.2 or 5.3 IMPAX MAP_INI file must be changed.

To update map_ini values for Cross-Cluster Dictation Interlock

1. Launch CLUI.
2. Type

   update map_ini set ini_value='*remote_host_name*' where ini_section='signal-relay' and ini_key='remote_host'

   where *remote_host_name* is the name of the IMPAX 6.5.1 Application Server where the service will run.
3. Type

update map_ini set ini_value='*remote_port_value*' where ini_section='signal-relay' and ini_key='remote_port'

where *remote_port_value* is the TCP port where the Application Server listens for signals.

a. By default, the port number is 6000. To confirm the port number, navigate to the folder where study-status-relay.bat is installed (for example, C:\Program Files\Agfa\Impax Business Services\study-status-signal-relay) and open the **Study.Status.Relay.exe.config** file in a text editor.

b. The port number value can be found under `<StudyStatusRelayConfiguration>` and between the `<SignalListenerPort>` and `</SignalListenerPort>` tags.

4. Optionally, change the default values of the external_port, rad_user, or trainee_user keys.

INI_SECTION	INI_KEY	INI_VALUE	Description
signal-relay	external_port	A valid port to listen for incoming signals. Default value is 6000.	The TCP port to listen for signals coming in from the remote cluster (whereas remote_port is used for forwarding signals).
signal-relay	rad_user	The user name used when changing the study status as a radiologist. The default value is *signal-relay*.	If you change this value, you must also configure this user in the IMPAX 5.2 or 5.3 Service Tools.
signal-relay	trainee_user	The user name used when changing the study status as a trainee radiologist. The default value is *sig-relay-train*.	If you change this value, you must also configure this user in the IMPAX 5.2 or 5.3 Service Tools.

Copying the 6.5.1 Cross-Cluster Dictation Interlock components

(Topic number: 59189)

Perform the following task on the IMPAX 6.5.1 Application Server.

To copy the 6.5.1 Cross-Cluster Dictation Interlock components

1. Copy the study-status-signal-relay folder from the Cross-Cluster Dictation Interlock zip in the Tools subdirectory to an appropriate folder on the 6.5.1 Application Server, such as to C:\Program Files\Agfa\Impax Business Services.

   The service will run from anywhere, but you should place it in a folder that is unlikely to be deleted.

2. Open a command prompt.
3. Change to the directory containing the copied files.
4. Change to the **study-status-signal-relay** directory.

5. Type **import-study-status-relay.bat**.
6. In the Apply Study Status Relay ADAM Schema dialog, click **OK**.

   This creates a Study Status Relay role.

Configuring a firewall exception for the Cross-Cluster Dictation Interlock tool

(Topic number: 111054)

The Windows firewall filters and blocks unsolicited incoming network traffic. To use the Cross-Cluster Dictation Interlock tool, you must define an exception in the Windows firewall to allow the TCP port to listen for signals coming in from the remote cluster.

To configure a firewall exception for the Cross-Cluster Dictation Interlock tool

1. On the IMPAX 6.5.1 Application Server, open Control Panel.
2. Select **Windows Firewall**.
3. Switch to the **Exceptions** tab.
4. Click **Add Port**.
5. In the Name field, type a name for the exception; for example, **Study Status Relay** or something similar.
6. In the Port field, type the number of the TCP port to listen for signals from the remote cluster.
   a. By default, the port number is 6000. To confirm the port number, navigate to the folder where study-status-relay.bat is installed (for example, C:\Program Files\Agfa\Impax Business Services\study-status-signal-relay) and open the **Study.Status.Relay.exe.config** file in a text editor.
   b. The port number value can be found under `<StudyStatusRelayConfiguration>` and between the `<SignalListenerPort>` and `</SignalListenerPort>` tags.
7. Click **OK**.
8. To close the Windows Firewall dialog, click **OK**.
9. Configure a firewall exception on the Windows machine in the remote cluster as well.

The new firewall exception takes effect immediately. You do not have to restart the server.

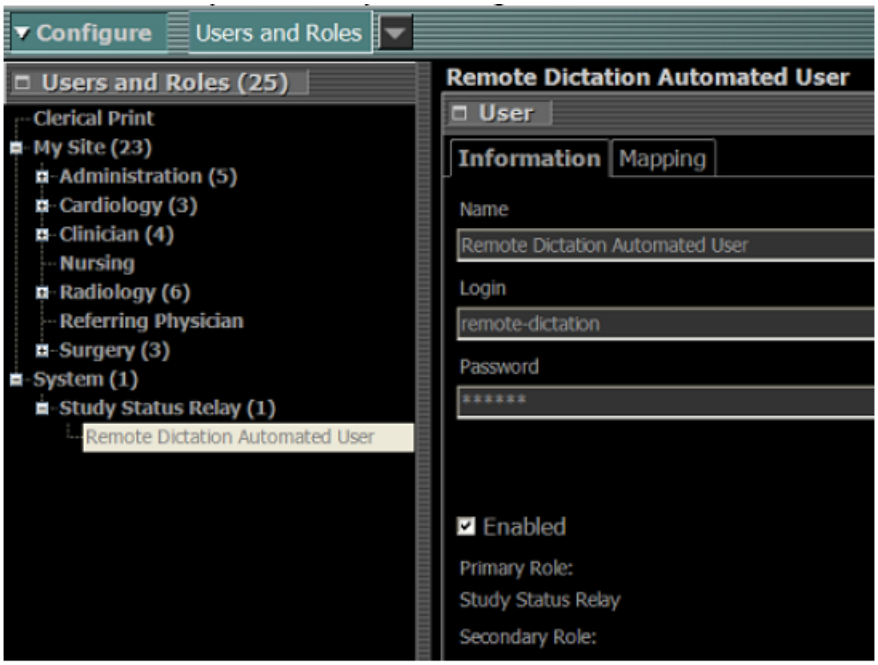
Configuring the Study Status Relay role

(Topic number: 48223)

The newly created Study Status Relay role requires a user called remote-dictation, and an appropriate license. Perform this task on the IMPAX 6.5.1 Application Server.

To configure the Study Status Relay role

1. Launch an IMPAX Client connected to the Application Server where the Study Status Relay role was created.
2. Log into the Client as an Administrator user.
3. From the **Configure** drawer menu , select **Users and Roles**.
4. In the navigation pane, right-click the **Study Status Relay** role and select **Add User**.
5. In the details pane, under the User bar, switch to the **Information** tab.
6. Type a Name for the user, such as **Remote Dictation Automated User**.
7. In the Login field, type **remote-dictation**.
8. Type in a Password and note what this password is.



9. In the navigation pane, select the **Study Status Relay** role again.
10. In the details pane, expand the **Licensing** bar.
11. In the navigation pane, right-click the **Study-Status Relay** role and select **Add License** > **Add *license_type***

    where *license_type* is an appropriate and available license for this role. (Dictation is not a license-controlled feature.)

The changes are saved automatically when you switch context.

Configuring the Study Status Relay service

(Topic number: 48230)

You can now configure the communication service between the previous version of IMPAX and IMPAX 6.5.1. The goal is to transmit relevant study status changes between these two clusters.

To configure the Study Status Relay service

1. On the 6.5.1 Application Server, open a command prompt.
2. Change to the **C:\Program Files\Agfa\Impax Business Services\study-status-signal-relay** directory.
3. Type **Study.Status.Relay.EncryptionTool.exe** ***password_for_remote-dictation_user***

   where *password_for_remote-dictation_user* is the password you defined and noted for the remote-dictation user.
4. Copy the long string that is returned from this command.

   Tip:

   If it is too difficult to copy the string from the command-line interface, output the result to a text file, then copy the string from that file.

5. Open the Study.Status.Relay.exe.config file in a text editor.
6. Under StudyStatusRelayConfiguration, between the `<UserPassword>` and `</UserPassword>` tags, paste the long string.

   For example:

   ```
   ...
   <!--
   The password to use when logging in as the UserId account. This
   value is the BASE-64 encoded version of password that has been
   encrypted using information specific to this machine.
   Default: <none>
   -->
   <UserPassword>AQAAANCMnd8BFdERjHoAwE/Cl+sBAAAABbkEiV/jjUWSVOOgdR9
   RYQQAAAACAAAAAAADZgAAqAAAABAAAACiWdpGofmXAMqUZ5YsA5lkAAAAAASAAACg
   AAAAEAAAAMWx8NfIDRPiPIV+727lgQgQAAAA5wKiHz2sKwU4IlvifPm02BQAAAD5u
   pFcxlJes1vaYnwvF5WMJo/6lQ==</UserPassword>
   ...
   ```
7. Update the values of **LoginServiceUrl**, **StudyInfoServiceUrl**, and **MessagingServiceUrl** with the local Application Server's fully qualified domain name.
8. Update the value of **RemoteSignalHost** with the host name or IP address of the computer in the previous-release version of IMPAX that is running the study-status-relay service.
9. Save and close the file.
10. In the command prompt, type **install_study_status_relay_service.bat**.

    You may get a log4net error message. You can safely ignore this message.

To diagnose other errors or check status, consult the Study.Status.Relay.log file located in the study-status-signal-relay folder.

If ready to use the service, proceed to the next topic, *Running the Cross-Cluster Dictation Interlock tool* (refer to page 78).

This topic also appears in the *IMPAX 6.5.1 AS300 Upgrade and Migration Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.1* , the *IMPAX 6.5.1 AS300 Upgrade and Migration Guide—IMPAX 6.2 or later to IMPAX 6.5.1*, the *IMPAX 6.5.1 AS3000 Upgrade and Migration Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.1*, or the *IMPAX 6.5.1 AS3000 Upgrade and Migration Guide—IMPAX 6.2 or later to IMPAX 6.5.1*. (The procedure is the same in all cases.)

Running the Cross-Cluster Dictation Interlock tool

(Topic number: 47379)

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.

Taking system inventory

3

Install and run key Migration Tools during the preparing to upgrade phase. You must complete these initial tasks when preparing for the migration and upgrade of an IMPAX 5.2 or 5.3 cluster or a WEB1000 site to IMPAX 6.5.1. Some of these commands cannot be run against an IMPAX 4.5 server.

More information on these Tools is available in *Migration Tools commands and parameters* (refer to page 130).

1. Creating the pre-migration schema

(Topic number: 6716)

To create the pre-migration database schema and data, navigate to the directory containing the Migration Tools and run the script that creates the tables in the mvf database. The Migration Tools use these tables during the preparing to upgrade phase.

For IMPAX sites, create the schema on the following servers:

- All current-version IMPAX Database Servers
- All current-version IMPAX single-host servers
- The training server
- The traveling server (used for AS3000 upgrades)

At a WEB1000-only site (no IMPAX database), create the schema on the WEB1000 Server.

Run these commands directly on these servers **or** from the Application Server connected to these servers. If have you run them right on the servers, do **not** run them again from the Application Server.

Creating the pre-migration schema on an AS300 or WEB1000 server

(Topic number: 57475)

These steps assume that the Migration Tools have been installed on the Database Server that you are running the commands on, and that you are logged into Windows as an administrator-level user.

To create the pre-migration schema on an AS300 or WEB1000 server

1. Open a command prompt.
2. Change to the **C:\mvf-mig6\bin** directory.
3. Type the following:

   build-impax-mig-schema.bat sa sa mvf
4. At the `Do you want to proceed?` prompt, type **y**.

The pre-migration database schema and data are created.

Creating the pre-migration schema on an AS3000 server

(Topic number: 57478)

These steps assume that the Migration Tools have been installed on the AS3000 Database Server that you are running the commands on.

To create the pre-migration schema on an AS3000 server

1. Log into the AS3000 Database Server as the **oracle** user.
2. Change to the **/usr/mvf-mig6/bin** directory.
3. Run the script called **./build-impax-mig-schema**.

The pre-migration database schema and data are created.

Creating the pre-migration schema from the Application Server

(Topic number: 57481)

To perform this task, you must be logged into Windows as an administrator-level user.

Instead of working at individual servers, you can run the command to create the database schema from the connected Application Server. If you have already created the pre-migration schema on the server itself, do not create it again from the Application Server.

To create the pre-migration schema from the Application Server

1. On the Application Server, open a command prompt.
2. Change to the **C:\mvf-mig6\bin** directory.
3. If the Application Server is connected to a SQL Server database, type

build-impax-mig-schema.bat *user_name password* mvf_*version_number*

For example, type **build-impax-mig-schema.bat sa sa mvf_52**

4. If the Application Server is connected to an Oracle database, type **build-impax-mig-schema.bat** without any additional parameters.

The pre-migration database schema and data are created.

2. Migrating reports to the training server

(Topic number: 119286)

Migrating reports from the production server to the training server allows users to work with reports while using the IMPAX 6.5 training cluster. Perform the following tasks to migrate reports to the training server:

1. Install Oracle 10.2.0.1 (refer to page 81).
2. Set up the connection to the Oracle database (refer to page 82).
3. Migrate the reports (refer to page 83).

Installing the Oracle 10.2.0.1 Client

(Topic number: 119140)

On the machine where you are going to run the MigrateTRServer tool, install the Oracle 10.2.0.1 driver prior to running MigrateTRServer.

Note:

Because the MigrateTRServer tool is not compatible with Oracle 10.2.0.4 (the version used be IMPAX 6.5.1), MigrateTRServer and the Oracle 10.2.0.1 driver must be installed on a machine that does not already have an Oracle Client. Therefore, MigrateTRServer and Oracle 10.2.0.1 should not be installed on an Application Server.

To install the Oracle 10.2.0.1 Client

1. Unzip the 10201_client_win32.zip file.
2. Run the unzipped Oracle 10g Client installer.
3. To open the Universal Installer, click **Install**.
4. In the Welcome dialog, click **Next**.
5. In the Installation type dialog, select **Administrator**. Click **Next**.
6. Under Destination, in the Name field, accept the default or type a new name.
7. Under Destination, in the Path field, select or type a path identifying where you want to install the Oracle Client.
8. In the Product Specific Pre-requisite Checks dialog, click **Next**.

9. In the Summary dialog, click **Install**.

   To see the Oracle Net Configuration Assistant, you may have to minimize the Oracle Universal Installer window. After the installation, the Oracle Net Configuration Assistant opens automatically.

10. If you are not continuing with configuration immediately, close the Configuration Assistant by clicking **Stop**.

    If you receive a warning message, or if you are prompted to close the Configuration Assistant, confirm that you want to close and exit the Configuration Assistant. Ignore warnings that you may lose changes, as you have made no changes to the configuration and therefore no changes will be lost.

Setting up the connection to the Oracle database

(Topic number: 119284)

The Oracle 10g Client (version 10.2) 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 database

1. If the Net Configuration Assistant is not open, select **Start** > **All Programs** > **Oracle** - *Oracle_instance_name* > **Configuration and Migration Tools** > **Net Configuration Assistant**.

   where *Oracle_instance_name* is the Oracle instance you specified when installing the Oracle 10.2.0.1 Client.

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 dialog, select **Add**. Click **Next**.
5. In the Service Name field, type **MVF** and click **Next**.
6. From the list of protocols, select **TCP**. Click **Next**.
7. In the TCP/IP dialog, type the host name 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_ts.world appears. Click **Next**.

15. At the prompt to configure another net service name, select **No**. Click **Next**.
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**.

Migrating reports to the training server

(Topic number: 9895)

Migrating reports from the production server to the training server allows users to work with reports while using the IMPAX 6.5.1 training cluster.

- 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:

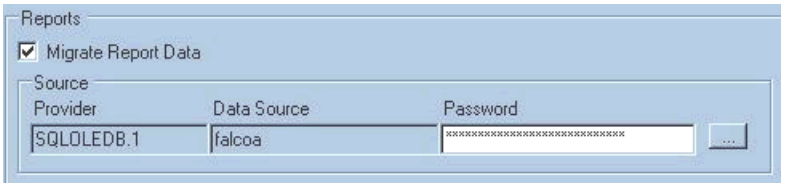
To ensure that failures do not occur, tools like SQLPlus, WinSQL, or Isql cannot be left connected to the MVF database (both the source and target MVF) when the MigrateTRServer tool is in use.

To migrate reports to the training server

1. On the Application Server component of the training server cluster, run the **C:/mvf-mig6/MigrateTRServer/ MigrateTRServer.exe** application.
2. Select the **Migrate Report Data** checkbox.
3. Under Source, supply the database information for the production server, as follows:
   a. Click **Modify**. 
   b. In the Data Link Properties dialog, select **Microsoft OLE DB Provider for SQL Server**. Click **Next**.
   c. In the Data Source field, type mvf_ts.world or the name of the tns entry that was created in tnsnames.ora.
   d. Select **Use a specific name and password** and type the database user name—normally **sa**.

      Do not specify the password at this time.
   e. In the Select the database on the server field, type **mvf**.
   f. Click **OK**.
4. In the Migrate training/traveling server data dialog, under Source, type the database password.

Sample configured Source settings in Migrate training/traveling server data dialog



5. Under Destination, supply the database information for the training server database, as follows:
   a. Click **Modify**. ...
   b. In the Data Link Properties dialog, select **Oracle Provider for OLE DB**. Click **Next**.
   c. In the Data Source field, type mvf_ts.world or the name of the tns entry that was created in tnsnames.ora.
   d. Select **Use a specific name and password** and type the database user name—normally **dbadmin**.
   e. In the Select the database on the server field, type **mvf**.
   f. Click **OK**.
6. On the training server, the database password will be encrypted. To retrieve it, use the following command at C:\mvf\bin:

   passkey -M QUERY -u sa

   Then type the retrieved value into the Destination Password field.
7. Click **Migrate Data**.

   A DTSResults dialog opens showing the result of the data migration from the training to the production server. Scan it for any ERROR messages that you need to resolve.
8. When the migration is complete, close the DTSResults dialog.

The training server database is now staged with report data from the production server database.

3. Collecting information on IMPAX clients, servers, stations, and printers

(Topic number: 6721)

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 IMPAX 5.2 or 5.3 AS300 or AS3000 database and on which the Migration Tools have been installed, or on the IMPAX Database Server itself.

The tool produces two different reports, depending on the parameters used.

Parameter	Report produced	Availability
-c	Full summary of all the Server and Client machines in the cluster, listing the machines and their functions (whether the machine has an archive, cache, and so on)	Preparing to upgrade phase only
-s	System snapshot that lists the number of studies in the system and in cache, the number of objects in the system, and all of the modalities and printers, along with their related configuration data	Pre- and post-upgrade phases
-a	Both reports	Preparing to upgrade phase only

To collect information on IMPAX clients, servers, stations, and printers

1. On Solaris, log in as the **mvf** user.
2. At a command prompt, change to the directory containing the migration_inventory tool.
3. On Windows, type

   migration_inventory.exe -s [-d *database_name* -U *database_user_name* -P *database_password*] -D *database_server_host_name*

   On Solaris, type

   migration_inventory -s -D *database_server_host_name*

   If running the command on the Database Server itself, the database name, user name, and password parameters are optional, but the Database Server host name is still required. The output is stored in the migration_info table.
4. To create a report file with this information, on Windows, type

   mig_reporter.exe -d mvf_*version_number* -t system_inventory_tool

   On Solaris, type

   mig_reporter -d mvf_*version_number* -t system_inventory_tool

   This command writes the output of the migration_inventory command to a report file in the \mvf-mig6\reports directory on Windows and the /usr/mvf-mig6/reports directory on Solaris.

4. Running an initial report on study archiving status

(Topic number: 6630)

To produce a report of studies that are in cache but are not archived, you can run a command on any computer with an MVF connection to the IMPAX database (such as the Application Server) or on the IMPAX Database Server itself. The studies to be identified can be moved to archive prior to migration.

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 **mvf** user.
2. Start the database by typing

   dbstartmvf

   Note:

   If Oracle has already been upgraded, you can ignore the error `SQL> SP2-0310: unable to open file "/usr/oracle/current/rdbms/admin/dbmspool.sql"`, 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.

Running a report on study archiving status on a Windows station

(Topic number: 57484)

Use this command on a Windows-based station, whether the Database Server itself or the Application Server connected to the server.

To run a report on study archiving status on a Windows station

1. At a command prompt, type

   mig-study-archive-report.exe -d mvf_*version_number* -U *IMPAX_database_user* -P *IMPAX_database_password*

   where *version_number* is either 52 or 53.

   This command returns a list of completely unarchived studies, partially unarchived studies, and studies cached on a disabled AE. The output is stored in the migration_info table.

2. To create a report file with this information, type

   mig_reporter.exe -d mvf_*version_number* -t mig-study-archive-report

   where *version_number* is either 52 or 53.

   The report file is created in the C:\mvf-mig6\reports folder.

The format of the report is as follows (each line includes a common date/time prefix):

```
[Study ref] ; [Accession number] ; [Patient ID] ; [Study status] ; [HIS verified
 date and time] ; [Study date] ; [Archive flag] ; [Total objects] ; [Configured
 archive AE] ; [Archived AE] ; [Archived volume type] ; [Number of archived
objects] ; [Number of ignored objects for PACS archive] ; [Number of cache
objects only on disabled AE] ; [Archive status information (either
Partially_Archived or Completely_Unarchived)]
```

To return different information, you can run the command with other parameters, as described in mig-study-archive-report.exe (refer to page 135); for example, you can change the separator by using the **-x** parameter.

Running a report on study archiving status on a Solaris station

(Topic number: 57487)

If running a command on an AS3000 Database Server, this the syntax to use.

Important!

On AS3000 systems, this script may take a long time to run. If the database is large, you may have to enlarge the size of the MVF tablespace before running it. As it runs, periodically check the /usr/mvf/data/logs/oracle/bdump/alert_mvf.log for tablespace-related warnings.

To run a report on study archiving status on a Solaris station

1. At a terminal window, type

mig-study-archive-report -o

This command returns a list of completely unarchived studies, partially unarchived studies, and studies cached on a disabled AE. The -o option crates an unarchived studies list that can be used by CLUI to initiate a store job. This file is created in the /usr/mvf-mig6/bin directory and has a .clui extension.

2. To create a report file with this information, type

   mig-reporter -t mig-study-archive-report

   The report file is created in the /usr/mvf-mig6/reports directory.

The format of the report is as follows (each line includes a common date/time prefix):

```
[Study ref] ; [Accession number] ; [Patient ID] ; [Study status] ; [HIS verified
 date and time] ; [Study date] ; [Archive flag] ; [Total objects] ; [Configured
 archive AE] ; [Archived AE] ; [Archived volume type] ; [Number of archived
objects] ; [Number of ignored objects for PACS archive] ; [Number of cache
objects only on disabled AE] ; [Archive status information (either
Partially_Archived or Completely_Unarchived)]
```

To return different information, you can run the command with other parameters, as described in mig-study-archive-report (refer to page 138); for example, you can change the separator by using the **-x** parameter.

Determining if a study is eligible for the study archive report

(Topic number: 6709)

The Study Archive Report tool uses various criteria to determine if a study is eligible for the report. For example:

- A study is not eligible if the archive_flag is not set to `'T'`.
- A study is considered fully archived if all objects—with the exception of ignored objects—are archived. (Objects may need to be ignored if a remote PACS cannot handle certain objects.)
- One study may be present on more than one cache, and so multiple rows are returned. The tool then determines which row is the best match for a particular study.

Note:

If the system cannot determine the station (source) configuration for a study, the study cannot be archived and is not eligible for the study archive report. To avoid this problem, ensure that all studies are properly assigned to a station.

Alternative to mig-study-archive-report

While we recommend that the mig-study-archive-report be used, it may take a long time to run. If necessary, as an alternative, you can use the show-unarchived-studies tool instead. But be aware that this tool is much simpler, and outputs only a list of studies that *appear* to be unarchived.

To run the show-unarchived-studies tool

1. On Windows, type **show-unarchived-studies.bat**.

   or

   On Solaris, type **show-unarchived-studies**.

   The output file produced is called study_to_store.clui.

To archive the studies noted in the file, you can run the **clui -i study_to_store.clui** command.

5. Checking the operating system

(Topic number: 9918)

On each server you plan to upgrade (rather than replace), check the Windows or Solaris operating system to ensure that it is healthy. This helps to prevent issues such as bad disk systems or server hardware faults from affecting the upgrade.

For details on performing operating system checks, refer to the appropriate Agfa Service documentation and to Microsoft or Solaris documentation.

6. Checking the integrity of database data

(Topic number: 60610)

Important!

This topic applies only to IMPAX sites using Oracle for Solaris or Oracle for Windows.

Check the integrity of the database data, to help avoid upgrade problems.

To check the integrity of database data

1. To check for uniqueness of OBJECT_REF in DOSR_OBJECT_DOCUMENT, in ISQL, type

   select count(object_ref) from dosr_object_document where object_ref in (select object_ref from dosr_object_document group by object_ref having count(object_ref)>1).

   If the return value is > 0, a DUP value exists in that table.

2. To check for null values in the DOSR_HIS_STUDY.STUDY_UID column, type

   Select count(*) from dosr_his_study where study_uid is NULL

3. To check for null values in the DOSR_STUDY.STUDY_UID column, type

   Select count(*) from dosr_study where study_uid is NULL

4. To check for null values in the DOSR_OBJECT.SOP_INSTANCE_UID column, type

   Select count(*) from dosr_object where sop_instance_uid is NULL

5. To check for null values in the DOSR_OBJECT.SERIES_REF column, type

Select count(*) from dosr_object where series_ref is NULL

For this check, you may receive a result such as `1000 1000 <NULL> dummy_object`. This record is used by Autopilot. The <NULL> value for it does not indicate a problem. Its presence will not adversely affect the database upgrade.

6. To check for null values in the MAP_JOB.ORIGINATING_USER_ID column, type

   Select count(*) from map_job where originating_user_id is NULL

7. To check for null values in the MAP_EVENT.USER_ID column, type

   Select count(*) from map_event where user_id is NULL

8. To check for null values in the MAP_EVENT_AUDIT.USER_ID column, type

   Select count(*) from map_event_audit where user_id is NULL

9. To check for null values in the MITRA_FOLDER.FOLDER_NAME column, type

   Select count(*) from mitra_folder where folder_name is NULL

10. To check for null values in the MITRA_FOLDER_ITEM.ITEM_NAME column, type

    Select count(*) from mitra_folder_item where item_name is NULL

11. To check for null values in the MITRA_PRINT_PARAMS.USER_ID column, type

    Select count(*) from mitra_print_params where user_id is NULL

12. To check for null values in the AGFAHC_REPORT_ACCESS_CONFIG.AE_TITLE column, type

    Select count(*) from agfahc_report_access_config where ae_title is NULL

13. If the return value is > 0 for any of these, a NULL value exists in that column. If duplicates or nulls are found, contact Agfa support for assistance in dealing with them.

7. Preparing for enhanced database security

(Topic number: 6638)

Important!

This topic applies only to IMPAX AS300 (SQL database) sites.

For AS300 clusters, security and armoring has been strengthened from the IMPAX 5.2 levels. Among the settings affected by the IMPAX 6.5.1 installation program are the following:

- All unnecessary Windows services and applications are disabled.
- The Named Pipes TCP protocol is no longer supported.
- All IMPAX services are configured to run under restricted user accounts that can access only the resources they need.

- To ensure that the SQL database account used for access does not have administrative privileges, access to dangerous and unnecessary extended stored procedures is removed or disabled.
- Windows firewall rules are created and applied to block external access to unused ports.
- The Administrators group is automatically created by Windows; however, the list of files and registry keys that this group has access to is modified during the IMPAX installation.
- The ImpaxServerGroup account is created and the list of files and registry keys that this group has full access to is configured.
- The following user accounts are created: ImpaxSQLUser, ImpaxAdminUser, ImpaxServerUser, and AgfaService.

Remember these changes when planning to migrate service-level user accounts and if intending to reuse existing server stations. For more information on these security settings, refer to "Securing Windows-based systems in IMPAX (armoring): Reference" (topic number 9311) and related topics in the *IMPAX 6.5.1 Server Knowledge Base*.

Preparing for user migration

4

The following information outlines the steps for preparing the IMPAX 4.5, 5.2, or 5.3 and WEB1000 user data for migration to the IMPAX 6.5.1 ADAM database.

Note:

If the IMPAX 4.5, 5.2, or 5.3 site is using LDAP user authentication, user data is typically not migrated, so these tasks may not apply.

1. Collecting data on the WEB1000 or IMPAX user base

(Topic number: 57497)

Use the Migration Tools to generate a summary list of all WEB1000 and IMPAX user types on the system. You can use this list to determine how many IMPAX 6.5.1 licenses of each type are needed. Perform this task on the Application Server, installed as described in *Installing a training server cluster* (refer to page 52).

To collect data on the WEB1000 or IMPAX user base

1. Open a command prompt on the Application Server and navigate to **C:\mvf-mig6\bin**.
2. At the prompt, type

   user_base_summary.exe -d mvf_*version_number* -U *IMPAX_4.5_5.2_or_5.3_database_user* -P *IMPAX_4.5_5.2_or_5.3_database_password*

   where *version_number* is 45, 52, or 53.
3. Type

mig_reporter.exe -d mvf_*version_number* -U *IMPAX_4.5_5.2_or_5.3_database_user* -P *IMPAX_4.5_5.2_or_5.3_database_password* -t user_base_summary

Viewing the report on the WEB1000 or IMPAX user base

(Topic number: 57500)

After the data is generated, you must run another command to view it.

To view the report on the WEB1000 or IMPAX user base

1. On the Application Server, navigate to **C:\mvf-mig6\reports**.
2. Using a text editor such as Notepad, open the file ***database_server_name*_user_base_summary _REPORT_1_*date_and_time***.

   The report contains summary information on the number of users in the system for each privilege type and the list of all privileges on the system.

A comparison of user privileges in IMPAX 6.5.1 and IMPAX 5.2 or 5.3 is available in the "Privilege and permission comparison" section in the *IMPAX 6.5.1 Migrations Reference Guide*. Most of this information also applies to IMPAX 4.5.

2. Mapping IMPAX Client station names to machine identifiers

(Topic number: 6661)

Important!

This topic applies only to IMPAX upgrades and not to migrations from WEB1000.

Perform the following tasks to extract station names and configurations from the IMPAX 4.5, 5.2, or 5.3 database and create a mapping of IMPAX Client machine names to the IMPAX 6.5.1 ADAM machine identifiers. You can perform this step for multiple Clients at once (as follows), or you can repeat the procedure on each Client individually (refer to page 96).

Mapping multiple Client station names simultaneously

(Topic number: 6659)

To map multiple Client station names simultaneously, you have to perform a set of procedures:

- Get the list of IMPAX Client station names
- Update the host_list file
- If applicable, modify Windows XP network access settings

- Run the command to map the Client station names to machine identifiers
- Verify that all Client station names have been mapped

Details on each of these tasks follows.

Getting a list of IMPAX Client station names

(Topic number: 57503)

Before you can map multiple IMPAX Client station names to machine identifiers, you must gather a list of all the names.

To get a list of IMPAX Client station names

1. On the Application Server, open a command prompt and change to the **C:\mvf-mig6\bin** directory.
2. Type the following:

   get_station _mapping.exe -m List -d mvf_*version_number* -U *IMPAX_4.5_5.2_or_5.3_database_user* -P *IMPAX_4.5_5.2_or_5.3_database_password*

   where *version_number* is one of 45, 52, or 53.
3. Type the following:

   mig_reporter.exe -d mvf_*version_number* -U *IMPAX_4.5_5.2_or_5.3_database_user* -P *IMPAX_4.5_5.2_or_5.3_database_password* -t get_station_mapping

The list of IMPAX Client station names is created and is saved to C:\mvf-mig6\reports as ***database_server_name*_station info mapping tool_report_1_*date_time***.

Updating the host_list file

(Topic number: 57506)

Before you can map Client station names to machine identifiers, you must update the host_list file with the host name or IP address of each Client station to be mapped.

To update the host_list file

1. Open the report created when getting a list of IMPAX Client station names (refer to page 94).
2. From the C:\mvf-mig6\bin folder, open the **host_list** file.

   The host_list file is used by the run_psexec.bat command to determine what IMPAX Client station names need to be mapped to Client station identifiers.
3. Using the station info mapping tool report, add each IMPAX Client station host name or IP address to the host_list file.

   If the IMPAX Client machines have different administrator usernames and passwords, you must also add the username and password to the host_list file. For example:

   Client_host_name_or_IP_address administrator_username administrator_password

If the administrator usernames and passwords are the same for all the IMPAX Client machines, do not include that information in the host_list file.

4. Save the host_list file.

Modifying the Windows XP network access settings

(Topic number: 57509)

Windows XP Home computers and Windows XP Professional computers not on a domain default to Guest for network access. The Guest configuration assumes a number of access policies that prevent the run_psexec.bat script from running effectively. To allow the script to run in such cases, you must modify the Windows XP security settings on the affected Client stations.

To modify the Windows XP network access settings

1. Open the Windows Administrative Tools.
2. Select **Local Security Policy**.
3. In the navigation pane, select **Local Policies** > **Security Options**.
4. Double-click **Network access: Sharing and security model for local accounts**.
5. If the selected list option is Guest only - local users authenticate as Guest, change it to **Classic - local users authenticate as themselves**.
6. Click **Apply**. Click **OK**.
7. To close the Local Security Settings window, select **File** > **Exit**.

Mapping multiple IMPAX Client station names to machine identifiers

(Topic number: 57512)

You use the run_psexec.bat utility to create a mapping between the IMPAX Client machine names and the IMPAX ADAM machine identifiers.

To map multiple IMPAX Client station names to machine identifiers

1. If the administrator usernames and passwords are the same for all IMPAX Client machines, on the Application Server, open a command prompt.
2. Type

   run_psexec.bat [***administrator_username administrator_password***]

   If all IMPAX Client host names listed in the host_list file include the administrator username and password information for the machine, you do not have to include the username and password with the run_psexec.bat command.

   The mvf database is updated with the IMPAX Client station names and appropriate mappings. During the user migration, this data is imported into the ADAM database.

Note:

If you are logged into the server with a domain username and password that is the same as the username and password on a remote station, error messages appear while run_psexec.bat is executing. You can ignore these error messages.

Verifying that all IMPAX Client station names have been mapped

(Topic number: 57515)

After you have run the command to map Client station names to machine identifiers (refer to page 95), you can verify that everything worked correctly.

To verify that all IMPAX Client station names have been mapped

1. Run the **get_station_mapping.exe** command.
2. Run the following command:

   mig_reporter.exe -d mvf_*version_number* -U *IMPAX_4.5_5.2_or_5.3_database_user* -P *IMPAX_4.5_5.2_or_5.3_database_password* -t get_station_mapping
3. Verify that no station names are listed in the report.
4. If any station names are listed, add them to the host_list file and run the **run_psexec.bat** command again.

Mapping individual Client station names

(Topic number: 6660)

Instead of mapping all Client station names at once, you can perform a set of tasks on each Client station individually.

Installing the appropriate Migration Tools on the Client station

(Topic number: 57529)

To perform the mapping tasks right on the Client station, some of the Migration Tools are required.

To install the appropriate Migration Tools on the Client station

1. Install the impax_65_migration-winpkg-6.5.1.*xxx*.exe Migration Tool, as described in *Installing the IMPAX 6.5.1 Migration Toolbox* (refer to page 59).

   or

   Copy and paste the get_station_mapping.exe and mig_reporter.exe files onto the Client, then copy the DLL files MFC71.dll and msvcr71.dll into the Client path (such as the Windows\system32 directory).

Retrieving the IMPAX Client station name

(Topic number: 57532)

Once the appropriate Migration Tools are available on the Client station, you can use them to retrieve the station name.

To retrieve the IMPAX Client station name

1. On the Client station, open a command prompt.
2. Change to the location of the get_station_mapping.exe file.
3. Type the following:

   get_station _mapping.exe -m List -d mvf_*version_number* -U *IMPAX_database_user* -P *IMPAX_database_password*

4. Type the following:

   mig_reporter.exe -t get_station_mapping -d mvf_*version_number* -U *IMPAX_database_user* -P *IMPAX_database_password*

A file with the IMPAX Client station name is created and is saved to C:\mvf-mig6\reports as *database_server_name*_station info mapping tool_report_1_*date_time*.

Important!

The mig_reporter.exe command may fail when you first run it if the directory C:\mvf-mig6\reports does not exist. If this happens, run the command again. When the command is first run, it creates the C:\mvf-mig6\reports directory, and will run successfully after that.

Mapping an IMPAX Client station name to a machine identifier

(Topic number: 57538)

Once the IMPAX Client station name is retrieved, you can map it to a machine identifier.

To map an IMPAX Client station name to a machine identifier

1. On the Client station, open a command prompt.
2. Navigate to the location of the get_station_mapping.exe file.
3. At the prompt, type the following:

   get_station_mapping.exe -m add -d mvf_*version_number* -U *IMPAX_database_user* -P *IMPAX_database_password*

   The mvf database is updated with the IMPAX Client station name and appropriate mappings.

During the user migration, these mappings are imported into the ADAM database.

3. Exporting user data

(Topic number: 9920)

Follow this procedure to export all IMPAX 4.5, 5.2, or 5.3 or WEB1000 user information. For IMPAX, this exported data includes access controls, privileges, preferences, and station configurations. For WEB1000, it includes information such as user IDs, privilege levels, access control groups and features, and team information.

The XML file created by this procedure can be used for reference, and some of the user data is later imported into the IMPAX 6.5.1 ADAM database.

CAUTION!

If you need to run the migrate-users.exe -m mvf2xml command a second time on the same database, you must delete all entries from the LDAP_user_mapping table in the database before proceeding.

To export user data

1. Open a command prompt on the Application Server.
2. Change to the **C:\mvf-mig6\UserMigration** directory.
3. To export IMPAX 4.5, 5.2, or 5.3 user information, type

   migrate-users.exe -m mvf2xml -d mvf_*version_number* -U *IMPAX_4.5_5.2_or_5.3_database_user* -P *IMPAX_4.5_5.2_or_5.3_database_password*

   If this is a WEB1000-only site, skip to the next step.
4. To export WEB1000 user information after exporting the IMPAX MVF data, type

   migrate-users.exe -m mvf2xml -d mvf -U *MVF_database_user* -P *MVF_database_password* -ud mvf_web -uU *WEB1000_database user* -uP *WEB1000_database_password*

   or

   To export **only** WEB1000 users information (no IMPAX data to migrate), type

   migrate-users.exe -m mvf2xml -d mvf_web -U *WEB1000_database user* -P *WEB1000_database_password*

Depending on the number of users being exported, this step can take up to 20 minutes to complete.

If IMPAX parameters were included, the users.xml file is created on the server, listing all users and their preferences and station configurations. Wizards and other information that will not be migrated to IMPAX 6.5.1 are also exported to this XML file for reference. Once an IMPAX Client workstation has been installed and configured, using the text file created from the exported IMPAX 5.2 or 5.3 Select wizards, create the appropriate IMPAX 6.5.1 standard worklists. For additional information on standard worklists, refer to "Managing studies using worklists" (topic number 8430) in the *IMPAX 6.5.1 Client Knowledge Base: Extended*.

If WEB1000 parameters were included, the webusers.xml file is created on the server, listing all the users and their team, privilege, and access control information.

Information about other parameters supported by this tool is available in *migrate-users.exe* (refer to page 134).

Deleting special characters in user names

(Topic number: 60402)

IMPAX 6.5.1 is more restrictive on what constitutes a valid user name than IMPAX 5.3 and earlier and WEB1000 were. To avoid problems in exporting user profiles into ADAM, delete invalid characters from the exported user names in advance.

To delete special characters in user names

1. Open the **users.xml** file in a text editor.
2. In each UserName and Fullname field, check for and delete any instances of the following characters:

   = + < > # ; / \
3. Save and close the **users.xml** file.
4. Repeat with the **webusers.xml** file, if applicable.

4. Planning the migration of user preferences

(Topic number: 55014)

IMPAX 6.0 and later introduces the concept of *inheritance* to user preferences. With inheritance, users can acquire their preferences from the roles they belong to. Preferences are defined by groups, and most (other than hanging protocols and image wizards) are non-merged, so that if any one of the preferences in a group is modified at the user level, that whole group of preferences is no longer inherited from the role. (For more information, refer to "Preferences: Key concepts" (topic number 9426) in the *IMPAX 6.5.1 Client Knowledge Base: Extended*.)

Migrating user preferences from IMPAX 4.5, 5.2, or 5.3 can interfere with how you would prefer to set up preference inheritance in IMPAX 6.5.1, because the migrated preferences become associated with *users* rather than *roles*. Therefore, these users get custom preferences for a whole group of settings, rather than inheriting preferences. Changing preferences for all users in a role therefore becomes more cumbersome, because each user has to be configured individually instead of just the one role all users belong to.

To mitigate the potential pitfalls, work with the site to effectively plan the migration of user preferences, following steps such as the following:

1. Define the appropriate hierarchy of roles and users, determining which preferences should be inherited by all.

   For help with this, consult "Determining the hierarchy of roles and users" (topic number 9440) in the *IMPAX 6.5.1 Client Knowledge Base: Extended* and the list of *IMPAX 5.2 preferences migrated to IMPAX 6.5.1* (refer to page 141).

2. Define which preferences will be getting migrated at the user level, therefore overriding role inheritance, by consulting the exported user data (refer to page 98) and the list of *IMPAX 5.2 preferences migrated to IMPAX 6.5.1* (refer to page 141).
3. Pinpoint areas where the migrated preferences would interfere with the preferred inheritance model.

Depending on how many preference groups would be affected, and how many users need migrating, you can then manage the problem one of two ways:

1. Do not migrate users. Instead, re-create them all in the training server cluster.

   or
2. Migrate the users, then remove the custom preferences where needed.

   To override *all* custom preferences within a role, you can use the Configure area **Use *roleName* Settings for All** command, as described in "Overwriting custom preferences" (topic number 9425) in the *IMPAX 6.5.1 Client Knowledge Base: Extended*. To delete particular preferences only, you can use the Profile Update tool installed on the Application Server, as described in Removing a preference from a role's sub-roles and users.

Migrating hanging protocols

(Topic number: 10060)

IMPAX 6.0 and later has introduced a new method of storing user preferences. As a result, hanging protocols once stored as a system or user configuration are now assigned to roles and individual users. Because of this architectural change, when migrating from IMPAX 5.2 or 5.3, only user hanging protocols are migrated; system hanging protocols are not.

You may therefore wish to do some analysis on the IMPAX 5.2 or 5.3 system hanging protocols before migrating the user data, to plan how they might map into the IMPAX 6.5.1 role hierarchy. For more information on configuring hanging protocols in IMPAX 6.5.1, refer to the "Setting hanging protocols" section (topic number 8753) in the *IMPAX 6.5.1 Client Knowledge Base: Extended*.

5. Finding the exported IMPAX Select wizards

(Topic number: 29641)

Important!

This topic applies only to IMPAX upgrades and not to migrations from WEB1000.

Follow this procedure only if the number of wizards is small. For managing many wizards, consult *Tips for managing large numbers of wizards* (refer to page 101).

IMPAX Select wizards are exported into the users.xml file created when exporting the IMPAX user information. Because of the introduction of standard worklists in IMPAX 6.0 and later, these exported Select wizards cannot be imported into IMPAX 6.5.1. Use the contents of the users.xml file to define which Select wizards must be re-created as standard worklists.

For additional information on standard worklists, refer to the "Managing studies using worklists" section (topic number 8430) in the *IMPAX 6.5.1 Client Knowledge Base: Extended*.

To find the exported IMPAX Select wizards

1. In a text editor such as Notepad, open the users.xml file.
2. Search for the text <**preference name="UserSelectWizards"**>.

   All the Select wizards for a single user are grouped together under this heading.

   To determine what user created the Select wizards, scroll up through the document to find the line starting with <**user userID**=. The *userName*= value in this line identifies who created the Select wizards in this group.
3. To gather all Select wizard information in a single file, copy all the text between the <**MacroName**> and <**/MacroText**> markers for this user and paste them into a new document. Repeat this for each Select wizard listed for this user.

   For a sample of how a Select wizard is displayed in the users.xml file, refer to the sample Select wizard that follows.
4. Search the users.xml file for the next user's wizards and copy all the user's wizard information into the new document. Repeat for all users in the users.xml file.
5. Once completed, save the Select wizard document and use it to determine what standard worklists to create in IMPAX 6.5.1.
6. Create standard worklists for the identified Select wizards.
7. To define the core set of standard worklists needed at the site, analyze the compiled text document and remove any duplicate Select wizards and wizards using redundant features.

   For more information, refer to "Relating worklists to department workflow " (topic number 8446) in the *IMPAX 6.5.1 Client Knowledge Base: Extended*.

Sample Select wizard

```
<wizard>
       <MacroName>New XA Today</MacroName>
      <Ordinal>4</Ordinal>
      <MacroText><![CDATA[fw_reset_finder();fw_recycle_worklist();
fw_change_criteria("STUDY_DATE", "", "TODAY");
fw_change_criteria("STUDY_DATE", "TODAY", "TODAY");
fw_change_criteria("MODALITY", "XA", "XA");
fw_refresh_query(); fw_move_selections_to_worklist()]]></
MacroText>
</wizard>
```

Tips for managing large numbers of wizards

(Topic number: 10603)

Larger sites commonly have over a thousand wizards in the system. With this number of wizards, the users.xml file is very large and time-consuming to sort through.

To ease the process, try the following:

- Simple text editors such as Notepad or Wordpad do not handle large files very well. You will get better results by using a dedicated Text or XML editor such as XMLpad or Ultraedit.
- Use CLUI to parse the list. The following SQL commands can be run from CLUI to remove duplicate wizards and to sort the wizards by name, making the list of wizards smaller and easier to manage:

  select distinct(macro_text) from mitra_finder_wizards order by macro_text

  select macro_name, ':', count(*), ':', macro_text from mitra_finder_wizards group by macro_text, macro_name order by macro_text, macro_name

  You can save these queries to a file on the system, which can then be examined and sorted using Microsoft Excel.

Migrating user data

5

The following information outlines the steps required to successfully migrate WEB1000 and IMPAX 4.5, 5.2, or 5.3 user data into the IMPAX 6.5.1 ADAM database.

Note:

If the IMPAX 4.5, 5.2, or 5.3 site is using LDAP user authentication, however, user data is typically not migrated, so this information may not apply.

1. Recording and disabling the password and account lockout policies

(Topic number: 6707)

The password and account lockout policies required by the site are determined by the hospital's IT department. During the preparing to upgrade phase, these policies must be disabled so that user data can successfully be migrated to IMPAX 6.5.1. IMPAX 4.5, 5.2, or 5.3 passwords are unlikely to conform to the new IMPAX 6.5.1 password standards, so they would fail if the policies were left in place.

For a description of each password and account lockout policy, refer to "Password and account lockout policies: Reference" (topic number 11366) in the *IMPAX 6.5.1 Application Server Knowledge Base*.

Before disabling the settings, record the password and account lockout policy settings.

Password policy settings

(Topic number: 6646)

Password policy	Setting
Enforce password history	
Maximum password age	
Minimum password age	
Minimum password length	
Password must meet complexity requirements	
Store password using reversible encryption for all users in the domain	

Account lockout policy settings

(Topic number: 58212)

Account lockout policy	Setting
Account lockout duration	
Account lockout threshold	
Reset account lockout counter after	

Disabling the password and account lockout policies

(Topic number: 6734)

CAUTION!

To change the password policy settings for an Application Server on the domain, the station must first be taken off the domain, added to the Workgroup, then restarted.

Once the original password and account lockout policies are recorded, you can disable them.

To disable the password and account lockout policies

1. Open the Windows Administrative Tools and select **Local Security Settings**.
2. In the navigation pane, expand **Account Policies** and select **Password Policy**.
3. To modify the Password Policy information, double-click the policy to be changed.

   Change each password policy to have the following settings:

Password policy	Setting
Enforce password history	0
Maximum password age	0
Minimum password age	0
Minimum password length	0
Password must meet complexity requirements	Disabled
Store password using reversible encryption for all users in the domain	Disabled

4. Under Account Policies, click **Account Lockout Policy**.
5. To modify the Account Lockout Policy information, double-click **Account lockout threshold**.
6. Set its value to **0** and click **OK**.

   This automatically changes the other values to Not Applicable.
7. To close Local Security Settings, select **File** > **Exit**.

2. Backing up the ADAM database

(Topic number: 6717)

On systems running Windows Server 2003, all IMPAX user information is stored in the ADAM database. Backing up the ADAM database at this time is important in the event that user migration fails. Once created, the scheduled backup job runs at set intervals and creates a backup copy of the selected data. The backups can be saved to tape, CD, DVD, or a network location.

To back up the ADAM database

1. Select **Start** > **All Programs** > **Accessories** > **System Tools** > **Backup**.
2. Select **Tools** > **Options**.
3. Switch to the **Exclude Files** tab.
4. In the list of file names, select **C:\Program Files\Microsoft ADAM** and click **Remove**. Click **OK**.
5. When the Backup or Restore Wizard is displayed, clear the **Always start in Wizard mode** checkbox and click **Advanced Mode**.
6. On the Welcome screen, click **Backup Wizard**.
7. On the Backup Wizard screen, click **Next**.
8. On the What to Backup screen, select **Backup selected files, drives, or network data**. Click **Next**.
9. On the Items to Backup screen, select the folder containing the ADAM data as well as the **World Wide Web Publishing Service** folder. Click **Next**.

The default location for the ADAM database is C:\Program Files\Microsoft ADAM\AgfaHealthcare.

10. If backing up to a tape drive, under Backup media type, select the tape drive, and in the backup media area, click **New media**. Click **Next**.

    or

    If backing up to any other media type, select the location where the backup is to be saved, and type a name for the backup. Click **Next**.
11. On the Completing the Backup Wizard screen, click **Advanced**.
12. On the Type of Backup screen, select **Normal.** Click **Next**.
13. On the How to Backup screen, select **Verify data after backup and Use hardware compression if available.** Click **Next**.
14. On the Backup Options screen, select **Replace the existing backups**. Click **Next**.
15. On the When to Backup screen, select **Now**. Click **Finish**.
16. In the Backup Progress dialog, click **Close**.
17. Close the Backup Utility.

3. Setting up custom roles

(Topic number: 6624)

After assessing the default role hierarchy for IMPAX, you may find that none of the default roles contain the needed set of permissions. In this case, you can either modify the preferences for the closest applicable role, or create additional, custom roles. For more information on defining roles, refer to the "Defining roles" section (topic number 9421) of the *IMPAX 6.5.1 Client Knowledge Base: Extended*.

To set up custom roles

1. Log into the IMPAX 6.5.1 Client.
2. From the Configure area drawer menu  , select **Users and Roles**.
3. To add a role within a role, in the navigation pane, right-click the role and select **Add Role**.

   or

   To add a role at the top level of the role hierarchy, right-click in the navigation pane below the defined roles and select **Add Roles**.
4. Rename the new role.

   The changes are saved automatically when you change context (that is, when you perform another action, such as selecting a different option or logging out).
5. Repeat for any other roles to create.

The next task is to define what IMPAX or WEB1000 privileges this new role inherits.

4. Mapping IMPAX or WEB1000 privileges to custom roles

(Topic number: 6662)

If custom roles have been created, then any appropriate IMPAX Client or WEB1000 privileges must be mapped to these custom roles.

To map IMPAX or WEB1000 privileges to custom roles

1. In the UserMigration folder where the Migration Tools are installed, locate and open the configuration file called **migrate-users.exe.config**.

   The migrate-users.exe.config file is an xml file. In this file is a section that looks like the following:

```
<RoleMapping>
    <roles>
     <map privilege_level="ADMIN" role="IT"        dn="cn=Administration"
 />
      <map privilege_level="CARDIO" role="Cardiologist"
dn="cn=Cardiology" />
      <map privilege_level="CARDIAC ADMIN" role="Cardiologist"
dn="cn=Cardiology" />
      <map privilege_level="CLERICAL" role="Clerical"
dn="cn=Administration" />
      <map privilege_level="CLINICIAN" role="Emergency Department"
dn="cn=Clinician" />
      <map privilege_level="MAMMO" role="Breast Imaging Radiologist"
dn="cn=Radiology" />
      <map privilege_level="MG RADIOLOGIST" role="Breast Imaging
Radiologist"    dn="cn=Radiology" />
      <map privilege_level="ORTHO" role="Orthopaedic Surgeon"
dn="cn=Surgery" />
      <map privilege_level="POWER RAD" role="Power Radiologist"
dn="cn=Radiology" />
     <map privilege_level="PREPACS" role="Radiologist" dn="cn=Radiology"
 />
      <map privilege_level="RADIOLOGIST" role="Radiologist"
dn="cn=Radiology" />
     <map privilege_level="SERVICE" role="Service" dn="cn=Administration"
 />
      <map privilege_level="SYSTEM ADMIN" role="System Administrator"
dn="cn=Administration" />
      <map privilege_level="TECH" role="Technologist" dn="cn=Radiology"
/>
     <map privilege_level="TRAINEE" role="Resident" dn="cn=Radiology" />

      <default privilege_level="DEFAULT" role="Clerical"
dn="cn=Administration" />
    </roles>
</RoleMapping>
```

2. Compare the privileges in the database with the role mapping in the migrate-users.exe.config file.
3. To map an IMPAX or WEB1000 privilege to a custom IMPAX 6.5.1 role, add additional map entries.

   For example, to map a user with RADIOLOGIST privileges to a custom role called Pediatric Radiologist in IMPAX 6.5.1, add the following line before the *default privileges_level* line:

   ```
   <map privilege_level="RADIOLOGIST"
   role="Pediatric Radiologist" dn="cn=Radiology" />
   ```

4. Save the file.

A detailed comparison of operations and access controls in IMPAX 6.5.1 and privileges and components in IMPAX 5.2 or 5.3 is available in the "Privilege and permission comparison" section of the *IMPAX 6.5.1 Migrations Reference Guide*. Most of this information also applies to IMPAX 4.5.

5. Converting both IMPAX and WEB1000 user information to LDF

(Topic number: 6700)

When using the migrate-users tool in the xml2ldf mode, and processing both IMPAX and WEB1000 users, the following rules apply:

1. An IMPAX user is exported to the .ldf file with all exported preferences that are to be migrated to IMPAX 6.5.1.
2. A WEB1000 user with no corresponding IMPAX userid is exported to the .ldf file, but only the privilege level is migrated to the IMPAX 6.5.1 role; WEB1000 preferences and team information is not migrated.
3. Any user with a matching user name but different userid will have a number appended to the user name, because LDAP requires user names to be unique.
4. Any WEB1000 user with a matching userid and password in IMPAX is assumed to be the same user, so the WEB1000 user is discarded and the IMPAX profile is used.
5. Any WEB1000 user with the same userid but different password is possibly a different user, so the WEB1000 userid has a suffix appended, and is written to a different .ldf file (conflicts.ldf). This file must be imported separately with ldifde.exe if these additional users are to be migrated.

6. Converting the user data to LDF

(Topic number: 6719)

In IMPAX 6.5.1, user authentication, user preferences, and user permissions are stored in an ADAM/AD LDS database or an external LDAP. Before the user data can be migrated from the IMPAX or WEB10000 MVF database into the ADAM database, the exported MVF data must first be converted

into XML (as described in *Exporting user data* (refer to page 98)), then transformed into LDF (Layered Data Format).

Perform this task on the configured IMPAX 6.5.1 Application Server.

To convert the user data to LDF

1. Open a command prompt.
2. Change to the **C:\mvf-mig6\UserMigration** directory.
3. To convert **only** IMPAX 4.5, 5.2. or 5.3 user information, type

   migrate-users.exe -m xml2ldf -I users.xml -d mvf_*version_number* -U *IMPAX_4.5_5.2_or_5.3_database_user* -P *IMPAX_4.5_5.2_or_5.3_database_password*

   or

   To convert **only** WEB1000 user information, type

   migrate-users.exe -m xml2ldf -I webusers.xml -d mvf_web -U *MVF_database_user* -P *MVF_database_password*

   or

   To export **both** IMPAX and WEB1000 user information at once, type

   migrate-users.exe -m xml2ldf -I users.xml,webusers.xml -d mvf_*version_number* -U *IMPAX_4.5_5.2_or_5.3_database_user* -P *IMPAX_4.5_5.2_or_5.3_database_password*

   In this last case, because the data has already been exported and converted to XML, there is no need to refer back to **both** the WEB1000 and IMPAX databases. The command can be run with the IMPAX database parameters only, but will still be applied to both the IMPAX and the WEB1000 data, as specified by the -I parameter.

When exporting both IMPAX and WEB1000 user information, two files may be produced: users.ldf and conflict.ldf. The conflict.ldf files lists any IMPAX and WEB1000 users that have the same user ID but different passwords.

Other parameters supported by this tool are listed in *migrate-users.exe* (refer to page 134).

7. Migrating user data to ADAM

(Topic number: 6656)

The next step is to migrate the exported user data into ADAM, if the site has opted for the Windows Server 2003 operating system. If a conflict.ldf file has been produced by exporting both IMPAX and WEB1000 users, examine the file. For each user ID listed, determine if it represents:

A) One individual who uses the same ID but a different password in each application.

or

B) Two different individuals.

In case A), you do not have to do anything more with these IDs. In case B), you should migrate those users into ADAM.. If the file contains a mix of A) and B) user IDs, delete the duplicate instance of the A) types.

To successfully migrate user data into ADAM, the user currently logged into the IMPAX 6.5.1 Application Server component must have ADAM administrative rights. (To check, launch ADAM Edit and select **Role** > **member**. The logged-in user must belong to the Administrator group.)

To migrate user data to ADAM

1. On the Application Server, open a command prompt.
2. Change to the **C:\mvf-mig6\UserMigration** directory.
3. Type

   ldifde -i -s *fully_qualified_domain_name_of_ADAM_host* -f *LDF_input_file* -t 636

   where the *LDF_input_file* is the users.ldf file produced by running the migrate-users.exe command.

   Tip:

   To ignore the existing users, add the -k parameter to the ldifde command.

4. If you have a conflict.ldf file that contains user IDs representing unique individuals, run the ldifde command again and use that conflict.ldf file as the *LDF_input_file*.

Note:

At an AS3000 site, if the user migration fails with *ORA-1000 error (number of open cursors exceeded)*, edit the **/usr/oracle/current/dbs/initMVF.ora** file by changing the current open_cursors value to a much larger value. If the problem persists, contact Agfa Support.

8. Backing up the ADAM database again

(Topic number: 6727)

On Windows 2003 systems, all user data has been migrated to the ADAM database at this point. We recommend backing up the ADAM database again—using a different backup name than used for any prior backup. Instructions are available in *Backing up the ADAM database* (refer to page 105).

9. Updating ADAM passwords

(Topic number: 6715)

To successfully update ADAM passwords, ensure that the password policy has been modified as described in *Recording and disabling the password and account lockout policies* (refer to page 103).

To update ADAM passwords

1. On the Application Server, open a command prompt.
2. Change to the **C:\mvf-mig6\UserMigration** directory.
3. Type

   migrate-users.exe -m postimport -d mvf_*version_number* -U mvf -P mvf

   or, for WEB1000-only sites:

   migrate-users.exe -m postimport -d mvf_web -U mvf -P mvf

10. Adjusting default toolbars, screen formats, and window level presets

(Topic number: 6732)

You can now customize the toolbars, screen formats, and window level presets used in the IMPAX 6.5.1 Client as required for specific roles and users. For instructions, refer to the *IMPAX 6.5.1 Client Knowledge Base: Extended* topics listed in the table that follows.

Task	Corresponding Knowledge Base topic
Adjusting top toolbar buttons	Customizing the top toolbar buttons (topic number 8734)
Adjusting context toolbar buttons	Defining which buttons are in the context toolbar (topic number 8735)
Adjusting screen format	Changing study screen format (topic number 8790)
Adjusting window level presets	Configuring window level presets (topic number 8562)

And for more information on default toolbars, screen formats, and window level presets, refer to the "Role defaults" (topic number 54969) section of the *IMPAX 6.5.1 Client Knowledge Base: Extended*.

Preparing the IMPAX database and archive for the upgrade

6

You must perform certain tests and backup tasks to prepare the IMPAX 5.2 or 5.3 Database and Archive Servers for the upgrade. IMPAX 4.5 sites cannot upgrade directly to IMPAX 6.5.1; they must first upgrade to IMPAX 5.2, then update the study comments (refer to page 112), then perform the other tests and backup tasks.

If migrating a WEB1000 site, no particular WEB1000 Server tasks are required.

1. Updating study comments after upgrading to IMPAX 5.2 from IMPAX 4.5

(Topic number: 10040)

CAUTION!

This topic applies **only** when upgrading from IMPAX 4.5. This query must **not** be run if upgrading from IMPAX 5.2 or 5.3; doing so would overwrite database data.

You cannot upgrade an IMPAX 4.5 database directly to IMPAX 6.5.1; you must first upgrade it to IMPAX 5.2.

After upgrading the IMPAX 4.5 database to IMPAX 5.2, we recommend that you run the following command to update the study comments field in the database. If you do not, the upgrade time from IMPAX 5.2 to IMPAX 6.5.1 will greatly increase.

To update study comments after upgrading to IMPAX 5.2

1. Launch CLUI.

2. Type

   Update DOSR_STUDY set study_comments_utf8=study_comments where study_comments is not null

   This command works with both SQL and Oracle databases.

The study comments in the database are updated, reducing the amount of time required to later upgrade this database to IMPAX 6.5.1.

2. Running a final report on study archiving status

(Topic number: 6631)

While you may have already run a report on study archiving status (*Running an initial report on study archiving status* (refer to page 85)), you can do so again closer to the actual time of migration, to ensure that you have the most up-to-date list of unarchived studies.

Run the following command on any computer with an MVF connection to the IMPAX 5.2 or 5.3 database.

To run a final report on study archiving status

1. At a command prompt, for Windows, type

   mig-study-archive-report.exe -U *IMPAX_5.2_or_5.3_database_user* -P *IMPAX_5.2_or_5.3_database_password* -d mvf_*version_number* -o

   or, for Solaris, type

   mig-study-archive-report -U *IMPAX_5.2_or_5.3_database_user* -P *IMPAX_5.2_or_5.3_database_password* -d mvf_*version_number* -o

   where *version_number* is either **52** or **53**.

This command returns a list of completely unarchived studies, partially unarchived studies, and studies cached on disabled archive, and writes them to a file that CLUI can use to initiate store jobs. To get different information returned, you can use different parameters, as outlined in *Common parameters in Migration Tool commands* (refer to page 130), *mig-study-archive-report.exe* (refer to page 135), and *mig-study-archive-report* (refer to page 138).

Information on how to archive the remaining unarchived studies is provided in the *IMPAX 6.5.1 AS300 Upgrade and Migration Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.1* and the *IMPAX 6.5.1 AS3000 Upgrade and Migration Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.1*.

3. Bringing in a 5.2 or 5.3 traveling server

(Topic number: 9922)

Important!

This topic applies only to IMPAX AS3000 (Solaris) sites.

AS3000 sites have the option of bringing in a traveling server, which is a pre-staged IMPAX 5.2 or 5.3 AS3000 server. This server is generally brought in about two weeks before the upgrade weekend. After completing PAP configuration on this server and on the Network Gateway server, a set of studies is transmitted from the production server to the traveling server. (For details on PAP configuration and study transmission, refer to the *IMPAX 6.5.1 Server Knowledge Base*.)

For this two-week period, new studies are routed from the production server to the traveling server, creating a temporary patient study data repository. During the upgrade weekend, study status is synchronized between the traveling server and the production server. This allows the traveling server to be used as the temporary production server during that weekend, greatly reducing site downtime.

The *IMPAX 6.5.1 AS3000 Upgrade and Migration Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.1* explains the tasks related to the traveling server.

If applicable, Broker reports can also be migrated to this server.

Importing IMPAX users into the traveling server

(Topic number: 66592)

You may want to export user data from IMPAX and import it into the traveling server. If the IMPAX database does not contain the CONTROLLER_MODE_DEFAULT column, however, you may run into difficulties with the import.

To check the IMPAX 5.2 or 5.3 database before importing IMPAX users into the traveling server

1. Log into the AS3000 Database Server as the **mvf** user.
2. Run the following command:

   sqlplus dbadmin/dbadmin

   select count(*) from user_tab_columns where table_name='MITRA_DISPLAY_MODALITY_CONFIG' and column_name='CONTROLLER_MODE_DEFAULT';
3. If the output is 0, add a column named **CONTROLLER_MODE_DEFAULT** to the MITRA_DISPLAY_MODALITY_CONFIG table.

4. Trimming map_event and map_event_audit tables

(Topic number: 10773)

To save time in database migration, large map_event and map_event_audit tables should be trimmed.

To check the current table size

1. On Windows, open the SQL Server Query Analyzer.

   On Solaris, launch CLUI.
2. Type **select count(*) from map_event**.
3. On Windows, click **Execute**.
4. Type **select count(*) from map_event_audit**.
5. On Windows, click **Execute**.

Note:

The **count(*)** command returns a result with five decimal places.

If the tables are large (they could run to millions of records), you can optionally first export the data to file by following the "Exporting auditing information to a file" procedure (topic number 9342) in the *IMPAX Server Knowledge Base*. You can then trim the records by following other procedures documented in the *IMPAX Server Knowledge Base*; notably, the "Defining when older audit records are deleted from the database topic (topic number 9345).

5. Freeing up sufficient disk space

(Topic number: 59287)

Important!

This topic applies only to IMPAX AS3000 (Solaris) sites.

You can install the IMPAX 6.5.1 AS3000 software from a software repository on the existing AS3000 Database Server. Installing from repository is much faster and less error-prone than installing from DVD. If intending to use a software repository, ensure that you have sufficient space available for it on the Oracle Database Server.

If the site uses disks for Oracle database backups, ensure that the disk has sufficient space to easily store a cold backup.

6. Creating the AS3000 software repository

(Topic number: 9936)

You can optionally install the IMPAX 6.5.1 AS3000 and Oracle for Solaris software from a software repository created on the AS3000 Database Server.

Note:

Installing IMPAX 6.5.1 AS3000 from a software repository is **much** faster, and much less prone to error, than installing it from DVD.

The AS3000 software repository can be created using ISO files or DVDs.

To create the AS3000 software repository using ISO files

1. On the AS3000 Database Server, create a directory for the repository by typing **mkdir /agfa/*repository***

   where *repository* is your choice of directory name.
2. Copy the IMPAX 6.5.1 AS3000 Server ISO file to this repository.
3. As the **root** user, type:

   # lofiadm –a /agfa/*repository*/IMPAX 6.5 AS3000 Server.iso

   /dev/lofi/1

   # mount –F hsfs /dev/lofi/1 /mnt

   # cd /mnt

   # cp -r . /agfa/*repository*

   where *repository* is the directory you created in step 1.

   The files are unpacked onto the Database Server into the *repository* directory.
4. Unmount /mnt and optionally remove the IMPAX 6.5.1 AS3000 Server ISO file.
5. Copy the Oracle for Solaris ISO file to the repository.
6. Repeat the process to extract and copy the Oracle software to the repository.

During the upgrade weekend, Oracle and IMPAX software upgrades are run from this repository. (When upgrading Oracle Server, if using a software repository that is not on the local machine, mount the repository.)

To create the AS3000 software repository using DVDs

1. On the AS3000 Database Server, log in as the root user and create a directory for the repository by typing **mkdir /agfa/*repository***

   where *repository* is your choice of directory name.
2. Insert the IMPAX 6.5.1 AS3000 Server DVD.

3. Change to the **/cdrom/cdrom0** directory.
4. Copy and unpack the files from the DVD by typing

   tar cvf - . | (cd /agfa/*repository*; tar xf -)

   where *repository* is the directory you created.
5. Remove the IMPAX AS3000 DVD and insert the Oracle for Solaris DVD.
6. Still in the /cdrom/cdrom0 directory, copy and unpack the files from this DVD as well.

   tar cvf - . | (cd /agfa/*repository*; tar xf -)

The files are unpacked onto the Database Server into the *repository* directory.

During the upgrade weekend, Oracle and IMPAX software upgrades are run from this repository. (When upgrading Oracle Server, if using a software repository that is not on the local machine, mount the repository.)

Creating an AS3000 build report repository

(Topic number: 60486)

Important!

If the 5.2 or 5.3 cluster is already using any version of Connectivity Manager, this task is not required.

Before starting, ensure that the pre-migration schema has been created (refer to page 80) on this server.

Perform these tasks on either the existing IMPAX 5.2 or 5.3 production server or a 5.2 or 5.3 traveling server—whichever of these is being used for the Broker report migration.

To create an AS3000 build report repository

1. On the server, log in as the mvf user and create the following directory: **/usr/mvf/reporting_tables**.
2. Insert the Connectivity Manager 2.1.1 or 2.2 CD.
3. Navigate to the **/cbframework-platform/AgfaHC-database** directory on the CD.
4. Copy the following files from the AgfaHC-database directory into the /usr/mvf/reporting_tables directory:
   a. **agfahc-sql.schema.oracle**
   b. **build-oracle-database.bash**
   c. **regrant-oracle.bash**
5. Change to the **/usr/mvf/reporting_tables** directory.
6. To grant execute permissions on the script files, run the following command:

   chmod 777 build-oracle-database.bash

7. To run the command, type

   ./ build-oracle-database.bash.

8. Remove the Connectivity Manager CD and insert the IMPAX 6.5.1 Migration CD.
9. Log in as user **root**.
10. Navigate to the SunOS5 directory on the CD.
11. Type

    pkgadd -d IMPAXmigration.pkg

Ensure that the IMPAX database has sufficient space to accept all reports from Broker.

Recommended sizes are as follows:

- 500 MB to 1 GB for **TEMP** to accommodate 300,000 to 400,000 reports
- 1 GB minimum for **UNDO**
- Multiple 2 GB **data and index** files created

7. Preparing the database for report migration

(Topic number: 60430)

IMPAX 6.5.1 is able to store reports with links to multiple patient identifiers. These patient identifiers come from Connectivity Manager, but are stored differently in IMPAX than in Connectivity Manager. The domain_id in AgfaHC_Patient_ID is the same field as the Connectivity Manager field issuer_of_patient_id. IMPAX requires that the combination of the patient_id and domain_id be distinct values in AgfaHC_Patient_ID.

To support this, the Connectivity Manager issuer_of_patient_id file must be different for the Primary, Alternate, and Global patient identifiers. This may require updates to the Connectivity Manager database and mappings and to the AgfaHC_patient_id table.

Changes to these fields are most easily done before the report data migration. These changes prevent the Application Server from hanging after receiving new reports for inserting into the AgfaHC tables.

To verify whether the database needs updates

1. On the Connectivity Manager, in Query Analyzer, run the following queries:
   a. **use mcf**
   b. **select distinct use_of_patient_id from mcf_patient_id**
   c. **select distinct issuer_of_patient_id from mcf_patient_id**
2. If either of these queries gets more than one response, this may indicate a problem. To resolve it, work with the Connectivity Manager integrator and Agfa support.

   It is much easier to resolve any data issues **before** migrating reports to IMPAX.

8. Migrating report data

(Topic number: 60876)

Important!

This topic applies only when planning to use an AS3000 traveling server as part of the upgrade and migration. If the cluster is already using Connectivity Manager, this task is not required.

Broker data can be migrated to the 5.2 or 5.3 Database Server, or to the traveling server. The following topics give an overview of what that migration entails. For details of the migration, refer to the *Connectivity Manager 2.1 Upgrade and Migration Guide* or the *Connectivity Manager 2.3 Migration Guide*, as appropriate.

If the 5.2 or 5.3 cluster is already using any version of Connectivity Manager, migrating report data is not required. (The Connectivity Manager software may need to be upgraded, however.)

Determining the role of the traveling server in Broker migrations

(Topic number: 60747)

Broker report data can be migrated into the 5.2 or 5.3 Database Server, or into the traveling server. In deciding which of the two scenarios to follow, consider the advantages and disadvantages of each.

Broker data migrated on	Advantages	Disadvantages
5.2 or 5.3 Database Server	• No need to migrate the report data from the traveling server to the IMPAX 6.5.1 Database Server (during the upgrade weekend). • Traveling server does not have to be brought in early.	• Making Broker reports available to the traveling server during the upgrade weekend requires the use of a dual-RIS feed or an HL7 Duplicator. • Not supported for IMPAX 4.5 sites; only for IMPAX 5.2 or 5.3.
Traveling server	• A dual-RIS feed or an HL7 Duplicator is not required (though it is still recommended for WEB1000 sites). • Supports upgrading IMPAX 4.5 sites (with 5.2 as an interim upgrade).	• Report data must be migrated from the traveling server to the IMPAX 6.5.1 Database Server during the upgrade weekend. • The traveling server must be brought in early, to support the Broker to Connectivity Manager migrations.

Migrating report data to the production server

(Topic number: 60741)

Broker data migration is done in advance of the IMPAX migration. In this scenario, Broker to Connectivity Manager migration is done to the IMPAX 5.2 or 5.3 production server.

Broker migration phase

Keep the following points in mind:

- Connectivity Manager must send patient updates, study updates, and reports to the IMPAX 5.2 or 5.3 server holding the reports.
- To avoid having to re-verify all new studies, set IMPAX 5.2 or 5.3 to HIS verify against Connectivity Manager.
- Using Source Manager, modify the HIS_AE_Title file for each source to be verified against Connectivity Manager instead of Broker.
- Connectivity Manager is used to send patient and study updates to the IMPAX traveling server (once it is online).

IMPAX preparing to upgrade period

By using a dual RIS feed or an HL7 duplicator tool, reports are stored in both Broker and IMPAX 5.2 or 5.3 through Connectivity Manager. Broker supplies reports to the WEB1000 Clients. Connectivity Manager supplies patient, study, and report updates to the IMPAX 5.2 or 5.3 production system. Connectivity Manager also supplies reports to the IMPAX 5.2 or 5.3 Clients.

To view the reports, the IMPAX 5.2 or 5.3 Clients must be configured to query port 8080 on Connectivity Manager. Updates to the broker_http_report_mask in the mitra_ae_config file are also required on each Client. Alternatively, the Connectivity Manager can be temporarily configured to allow report queries on port 80.

IMPAX upgrade weekend

During this time, the following occurs:

1. The IMPAX 5.2 or 5.3 traveling server becomes the interim production system. WEB1000 Clients access reports through Broker. The IMPAX 5.2 traveling server HIS verifies against Broker and IMPAX 5.2 or 5.3 Clients pull reports from Broker.
2. The IMPAX 5.2 or 5.3 production database is migrated and the software updated (if applicable).
3. Connectivity Manager is re-configured to send report updates to the IMPAX 6.5.1 Application Server. Connectivity Manager holds reports in its queue (or the HL7 source is stopped) until the IMPAX 6.5.1 Application Server and database are functional with all previous reports.
4. Report migration is not required, but studies stored on the IMPAX 5.2 or 5.3 traveling server are sent to the IMPAX 6.5.1 migrated production system and these studies are HIS verified against the Connectivity Manager.

Migrating report data to the traveling server

(Topic number: 60744)

Broker data migration is done in advance of the IMPAX migration. In this scenario, Broker to Connectivity Manager migration is done to the IMPAX 5.2 or 5.3 traveling server.

Broker migration phase

Keep the following points in mind:

- Connectivity Manager must send patient updates, study updates, and reports to the IMPAX 5.2 or 5.3 traveling server holding the reports.
- To avoid having to re-verify all new studies, set IMPAX 5.2 or 5.3 and the traveling server to HIS verify against Connectivity Manager.
- Using the Broker AE_title, update the IP address and host name to the Connectivity Manager values or use Source Manager to modify the HIS_AE_Title file for each source to be verified against Connectivity Manager instead of Broker.
- Connectivity Manager sends patient and study updates to the live IMPAX 5.2 or 5.3 production server.

IMPAX preparing to upgrade period

If using a dual RIS feed or an HL7 duplicator tool, reports are stored in both Broker and IMPAX 5.2 or 5.3 through Connectivity Manager. Broker supplies reports to the WEB1000 Clients and the IMPAX 5.2 or 5.3 Clients.

To view the reports, the IMPAX 5.2 or 5.3 Clients must be configured to query port 8080 on Connectivity Manager. Updates to the broker_http_report_mask in the mitra_ae_config file are also required on each Client. Alternatively, the Connectivity Manager can be temporarily configured to allow report queries on port 80.

IMPAX upgrade weekend

During this time, the following occurs:

1. The IMPAX 5.2 or 5.3 traveling server becomes the interim production system. IMPAX 5.2 or 5.3 Clients access reports from Connectivity Manager, through the traveling server.
2. The IMPAX 5.2 or 5.3 production database is migrated and the software updated (if applicable).
3. The traveling server is taken offline. The Connectivity Manager is reconfigured to send reports to the IMPAX 6.5.1 Server, and its report queue is stopped.
4. Reports are migrated from the traveling server to the migrated IMPAX 6.5.1 Database Server using the MigrateTRServer.exe utility.
5. When the report migration is done, the Connectivity Manager report queue can be restarted.
6. Studies stored on the IMPAX 5.2 or 5.3 traveling server are sent to the IMPAX 6.5.1 migrated production system and these studies are HIS verified against the Connectivity Manager.

Details about most of these procedures are provided in the *IMPAX 6.5.1 AS3000 Upgrade and Migration Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.1*.

9. Updating the database statistics

(Topic number: 10194)

After the database is started on the new system, run the commands described in this topic to update the statistics.

To update the database statistics

1. Log into the Database Server as the oracle (traveling server) or service (IMPAX 5.2 or 5.3 server) user.
2. On Solaris, type

   analyze-tables
3. If errors occur, check */usr/mvf/data/logs/analyze-tables.log* for details.

10. Identifying the report source

(Topic number: 68030)

When upgrading the database, you will be prompted for the report source. When prompted, supply the value stored in the *requesting_service* field in the Connectivity Manager database. To prepare for the upgrade, identify this value in advance.

To identify the report source

1. On the Connectivity Manager, open osql (refer to page 146) and type

   use mcf;

   select distinct(requesting_service) from mcf_service_request;
2. To prepare for upgrading the database, note the value stored in the requesting_service field.

   The *requesting_service* value is case-sensitive.
3. If multiple values are returned in the *requesting_service* field, consult a Connectivity Manager integrator, as data and mappings may need to be updated.

   If this Connectivity Manager receives data from multiple report sources, separate requesting_service values may exist that match each report source.

11. Verifying the version of Oracle

(Topic number: 60376)

Important!

This topic applies only to IMPAX AS3000 (Solaris) sites.

Before migrating the Oracle database, verify that it is the acceptable minimum version required for upgrading to IMPAX 6.5.1.

To verify the version of Oracle

1. On the AS3000 Database Server, log in as the **mvf** user.
2. Type the following commands:

   sqlplus /nolog

   SQL> **connect sys/stayout as sysdba**

   SQL> **select COMP_ID,COMP_NAME,VERSION,STATUS from dba_registry;**
3. If the version displayed is 9.2.0.1, the Oracle 9.2.0.4 upgrade was not completed correctly. Upgrade Oracle to version 9.2.0.4 now.

12. Backing up the IMPAX database

(Topic number: 6726)

Be sure to do a final database backup before moving ahead with the migration to IMPAX 6.5.1.

Backing up the AS300 SQL 2000 database

(Topic number: 11497)

If using a SQL Server 2000 database, back it up prior to the upgrade.

To back up the AS300 SQL 2000 database

1. On the server running the AS300 database, select **Start** > **All Programs** > **Microsoft SQL Server** > **Enterprise Manager**.
2. In the Explorer window of the Enterprise Manager, expand **Console Root** > **Microsoft SQL Servers** > **SQL Server Group** > ***server*** > **Databases** > **MVF**

   where *server* is the name of the SQL Server IMPAX is running under.
3. Select **Action** > **All Tasks** > **Backup database**.

4. In the SQL Server Backup screen, in the Backup section, select **Database–complete**.
5. Click **Add** and specify the directory to back up to.
6. To start the backup, click **OK**.
7. Exit the SQL Server Enterprise Manager.

Backing up the AS3000 Oracle database

(Topic number: 11499)

In case of problems, back up the database before upgrading it.

To back up the AS3000 Oracle database

1. If backing up to tape, insert the tape into the tape drive.
2. Log into the AS3000 Database Server as the **oracle** or service user.
3. Type the following command:

   /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.

13. Backing up critical system files

(Topic number: 6902)

Important!

This topic applies only when upgrading an existing server on AS3000 systems.

In case of problems, if upgrading rather than replacing the existing server station, back up each of the following before proceeding:

File name	Comments on contents	Pass	Fail
/etc/vfstab	Disk configurations		
/etc/system	Solaris machine configuration file		
/etc/inet/hosts	Network hosts file		
/dev/kernel/st.conf	Tape drive configuration file		
/dev/kernel/sd.conf	LUN configuration file for hardware RAID and SAN		
/export/oracle/current/dbs/orapw	Oracle password file		
/usr/oracle/admin/MVF/pfile/initMVF.ora	Oracle configuration file		

File name	Comments on contents	Pass	Fail
Crontab file (for user mvf)	Type **$ crontab -l > ./crontab.orig**		
/usr/mvf/etc/dbbackup.cfg	Contains information about whether a disk or tape backup is to be done and where the backup directory is		
/etc/apache/httpd.conf	Secured file for sites that have had C2 security protocols applied		
/export/oracle/current/ network/admin/sqlnet.ora	Oracle Net Services configuration file		
/var/software directory	Contains all scripts and patches used to build the machine originally		
install_info file	System ID, packages, and installer reference information. Important to ensure that the machine is upgraded exactly as it was pre-IMPAX 6.5.1 AS3000		
/var/opt/oracle/listener.ora	Oracle listener configuration file		
/var/opt/oracle/tnsnames.ora	Oracle net service names configuration file		

14. Saving the map_event_audit tables from a database

(Topic number: 123373)

For HIPAA and other regulatory reasons, audit information must often be saved prior to upgrade. Follow the applicable procedure to save the map_event_audit tables from a database.

Saving the map_event_audit tables from an AS3000 Oracle database

(Topic number: 60393)

When upgrading an IMPAX AS3000 system running Oracle Server for Solaris, follow this procedure.

To save the map_event_audit tables from an AS3000 Oracle database

1. Log into the Database Server as the **service** user.
2. Launch SQLPlus and log in as **dbadmin**.
3. Enter the following command into SQLPlus:

   Select CEIL(SUM(bytes)/1024) from user_segments where SEGMENT_NAME='MAP_EVENT_AUDIT' AND SEGMENT_TYPE= 'TABLE';

   Note the size of the tables returned and assess whether sufficient disk spaces exists for them. If not, free up some space.

4. To close SQLPlus, type **exit**.
5. To save the map_event_audit tables, open a command prompt and type the following commands:

   exp userid=dbadmin/dbadmin file=*location_you_selected*/MAP_EVENT_AUDIT.dmp tables=MAP_EVENT_AUDIT

   Important!

   Type the command all on one line. Otherwise you will get an export of every table in the database.

6. Launch SQLPlus and log in as **dbadmin**.
7. Truncate the table with the following command:

   truncate table map_event_audit;

Saving the map_event_audit tables from an AS300 SQL Server database

(Topic number: 106543)

When upgrading an IMPAX AS300 system running SQL Server, follow this procedure.

To save the map_event_audit tables from an AS300 SQL Server database

1. Start the SQL Server Query Analyzer and log in as the **sa** user.
2. In Query Analyzer, type

   sp_spaceused MAP_EVENT_AUDIT

3. Note the *reserved size* value returned by the previous command.

   This value is the space required to export the data. If the amount of available disk space is not sufficient for the exported data, free up some disk space.

4. Open a command prompt.
5. To save the map_event_audit tables, type

   bcp mvf..map_event_audit out location_you_selected\MAP_EVENT_AUDIT.txt -Usa-Psa_password -c

6. Close the command prompt.
7. In the Query Analyzer, truncate the map_event_audit table by typing

   truncate table map_event_audit

15. Detecting and correcting IMPAX cache corruption

(Topic number: 6710)

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 against the IMPAX AS300 database

(Topic number: 58406)

You can use the cache check and repair tools to check the integrity and identity of cache files against the IMPAX AS300 database.

To check the integrity and identity of cache files against the IMPAX AS300 database

1. In a command prompt, change to the location of the cache check and repair tools.
2. 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 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.
   - **-q**—A quick check of file existence only, and a simple file size sanity check. Cannot be used with the -m parameter.

A report and additional diagnostic messages are written to the log file.

For example:

mvf-check-cache -q /cache3/mvfcache

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.

Migration Tools commands and parameters

A

The IMPAX 6.5.1 Migration Toolbox relies on parameters to configure the command line applications to suit a particular migration instance. While many of the parameters are common to all of the Migration Tools, some parameters are specific to Windows or Solaris migrations.

Common parameters in Migration Tool commands

(Topic number: 6720)

These command line parameters are common to most of the executables in the IMPAX 6.5.1 Migration Toolbox.

Parameters	Values	Additional information
-d	*database_name*	DNS name for ODBC connection. Required for the migration_inventory.exe (refer to page 135) and migration_inventory (refer to page 139) tool.
-e	*entity_name*	
-f	*log_file*	Log file name. Differs somewhat for migrate-users.exe (refer to page 134).
-l	{**debug** | **info** | **error** | **audit** | **service** | **noservice**}	Logging level. Differs for database-upgrade-script.bat (refer to page 132) and database-upgrade-script (refer to page 137).
-p	*process_title*	Differs for mig_reporter.exe (refer to page 133) and mig-reporter (refer to page 138).
-P	*database_password*	

Parameters	Values	Additional information
-R	*database_reconnection_attempts*	
-s	None	Output to stdout. Differs for migration_inventory.exe (refer to page 135) and migration_inventory (refer to page 139).
-U	*database_user*	
-?	None	Usage/help screen

Windows Migration Tools and parameters

(Topic number: 6605)

Some of the migrations tools and parameters are specific to Windows (AS300) migrations.

block_named_pipes.exe

(Topic number: 10609)

Removes the registry entry that allows Named Pipe access to the SQL Server. No longer required for migrations.

build-impax-mig-schema.bat

(Topic number: 10611)

Installs Migration Tools database schema and data which the Migration Tools use during the preparing to upgrade phase.

SQL Server databases

For a SQL Server database, on a computer supporting user ID *sa*, password *sa*, and ODBC name *mvf*, the batch file can be run directly. Otherwise, you must specify the mvf user, mvf password, ODBC name, in that order.

Examples:

```
build-impax-mig-schema.bat sa pwd new
```

Runs the command for user *sa*, password *pwd*, and ODBC name *new*.

```
build-impax-mig-schema.bat
```

Runs the command for user *sa*, password *sa*, and ODBC name *mvf*. These default values do not have to be specifically included; however, if problems occur in running this script, specifying these values may solve the problem.

Oracle databases

For an Oracle database, run the script with no additional parameters.

```
build-impax-mig-schema.bat
```

database-upgrade-script.bat

(Topic number: 10613)

Upgrades the IMPAX 5.2, 5.3, 6.2 or later SQL Server database schema to IMPAX 6.5.1. This is a batch file that the user runs, which calls the executable file that handles the main part of the database upgrade.

The database-upgrade-script requires a report source. Reports are retrieved from IMPAX clusters based on matches between the report source and the value of the dosr_study table's *requesting_service* field which is set by the Connectivity Manager's *requesting_service* field during HIS verification. Check the Connectivity Manager for the value of the *requesting_service* field. This field is case-sensitive.

To check the value of the Connectivity Manager's *requesting_service* field

1. On the Connectivity Manager, open osql (refer to page 146) and type

   use mcf;

   select distinct requesting_service from mcf_service_request;

Note:

If this Connectivity Manager receives data from multiple report sources, several *requesting_service* values may match each report source. If multiple values are returned, consult a Connectivity Manager integrator, as data and mappings may need to be updated.

Parameters	Values	Default value
-l	***dump_file_location_for_MAP_EVENT_and_MAP_EVENT_AUDIT***	C:\mvf-mig6\data
-x	***path_to_IMPAX_installation_directory***	C:\mvf
-a	None; runs the command in audit mode, which means that it tests the upgrade script without actually upgrading the database. No longer recommended for use.	Not applicable
-v	{**52 | 53 | 62 | 63 | 64**}; refers to the version being upgraded from. If upgrading from IMPAX 6.5 or later, the version parameter can be omitted.	Not applicable

Examples:

```
database-upgrade-script.bat -v 62
```

Migrate the database from IMPAX 6.2 to IMPAX 6.5.1.

get_station_mapping.exe

(Topic number: 10615)

Not applicable to IMPAX 6.2 or later migrations. Extracts station configuration from the database and creates a mapping of the Client machine name to the ADAM station ID.

Parameters	Values	Default value
-m	{**list** | **add**}	add

MigrateTRServer.exe

(Topic number: 10617)

Utility that migrates worklist or report data or both from the training or traveling server to the production server. This is not a command-line utility; it has a user interface.

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.

mig_reporter.exe

(Topic number: 10619)

Generates a progress report of long-running tasks as well as the final report output from each tool to a file or directly to the screen. This is an optional helper utility.

Parameters	Values	Default value
-h	***host_name***	None
-t	***Migration_Tool_name***	None
-r	***information_type***	None
-p	None; deletes prior entries	Not applicable
-v	None; verbose mode	Not applicable
-c	None; output to screen instead of to reports directory	Not applicable

Example:

```
mig_reporter.exe -d mvf_52 -t system_inventory_tool
```

This command writes the output of the system inventory command to a report file.

migrate-users.exe

(Topic number: 10621)

Not required for IMPAX 6.2 or later migrations. Exports user IDs, preferences, and privileges and migrates this data from MVF to ADAM when migrating to the Windows 2003 platform.

Note:

Windows 2008 Server replaces ADAM with AD LDS, and does not support data migration from earlier platforms using the migrate-users.exe tool.

Also exports Select wizards and other information that will not be migrated to IMPAX 6.5.1.

Parameters	Values	Default value
-m	{**mvf2xml** | **xml2ldf** | **postimport**} where: • **mvf2xml**—Read MVF and output in XML intermediate format • **xml2ldf**—Transform XML format to importable .ldf file • **postimport**—Update LDAP passwords and MVF data	None
-f	***output_file***	Defaults are **users.xml** when mode is mvf2xml and exporting IMPAX users, **webusers.xml** when mode is mvf2xml and exporting WEB1000 users, and **users.ldf** when mode is xml2ldf.
-c	***output_file_for_conflicting_users***	conflicts.ldf (xml2ldf mode)
-ud	***MVF_user_database_name_for_IMPAX_or_WEB1000***—DSN name for ODBC connection	Default uses connection specified by -d -U -P parameters.
-uU	***WEB1000_or_second_IMPAX_database_user***	None
-uP	***WEB1000_or_second_IMPAX_database_password***	None
-I	***file_name***—Comma-separated list. Specifies input file name or names for xml2ldf mode.	None
-uid	***userid_list***—Comma-separated list of user IDs to be exported	None
-node	***node_type***—Optional component node type from configuration to restrict what is being migrated. For	None

Parameters	Values	Default value
	example, "-node user" ensures that only components with a node type of "user" are executed.	

Examples:

- To extract all user data from IMPAX to default XML file (users.xml):

  -m mvf2xml -d myDB -U myDBUser -P myDBPass

- To extract user data for user1 and user2 from IMPAX to default XML file (users.xml):

  -m mvf2xml -d myDB -U myDBUser -P myDBPass -uid user1,user2

- To extract all user data from WEB1000 to default XML file (webusers.xml):

  -m mvf2xml -d myDB -U myDBUser -P myDBPass -ud myWebDB -uU myWebDBUser -uP myWebDBPass

- To transform all user data from IMPAX and WEB1000 XML files to default importable LDF file (users.ldf):

  -m xml2ldf -I users.xml,webusers.xml -d myDB -U myDBUser -P myDBPass

- To perform a post-import update of all ADAM passwords and IMPAX data:

  -m postimport -d myDB -U myDBUser -P myDBPass

migration_inventory.exe

(Topic number: 10623)

Collects key IMPAX Server and Client information stored in database; for example, number of studies, number of objects, number of sources, and so on. Generally used only for upgrades from IMPAX 5.2 or 5.3.

Parameters	Values	Default value
-a	None; generates all reports	Not applicable
-s	None; generates system snapshot	Not applicable
-c	None; generates cluster summary for client and server machines	Not applicable

Example:

```
migration_inventory.exe -d mvf_52 -U sa -P -sa -c -D 52_server
```

Produces a full cluster summary of client and server machines connected to the specified database.

mig-study-archive-report.exe

(Topic number: 10627)

Checks the archive status of studies in the system.

Parameters	Values	Default value
-c	None; include listing for completely unarchived studies	Not applicable
-D	None; treat disabled archive or cache as active. Query only; will not enable the archive or cache. Overrides -z.	Not applicable
-n	***number***—Specifies the maximum number of studies to return. To return all, specify 0.	100
-o	None; output unarchived studies to a file which may be used by CLUI to initiate a store job. The file is not created by default.	Not applicable
-x	***separator***—Item separator for report data	bar (|)
-y	None; include listing for partially archived studies	Not applicable
-z	None; include studies cached only on a disabled AE	Not applicable

Example:

```
mig-study-archive-report.exe -d mvf_52 -U sa -P sa -o
```

Returns a list of completely unarchived studies, partially unarchived studies, and studies cached on a disabled AE, then writes them to a file that CLUI can use to initiate store jobs

run_psexec.bat / psexec.exe

(Topic number: 10625)

Extracts station configuration from the database and creates a mapping of the Client machine name to the ADAM station ID. Record this for each of the hosts on the host_list input file by downloading get_station_mapping.exe to each of the machines and running the application locally.

user_base_summary.exe

(Topic number: 10629)

Creates a summary of users and privileges in the IMPAX 4.5, 5.2, or 5.3 system. Cannot be used for IMPAX 6.2 or later. Cannot be used to capture a summary in IMPAX 6.5.1.

Solaris Migration Tools and parameters

(Topic number: 6618)

Certain tools and parameters are specific to Solaris (AS3000) migrations.

build-impax-mig-schema

(Topic number: 10631)

Installs Migration Tools database schema and data which the Migration Tools use during the preparing to upgrade phase.

database-upgrade-script

(Topic number: 10633)

Upgrades the IMPAX 5.2, 5.3, 6.2 or later database schema to IMPAX 6.5.1. This is a batch file that the user runs, which calls the executable that handles the main part of the database upgrade.

This script requires a report source. Reports are retrieved from IMPAX clusters based on matches between the report source and the value of the dosr_study table's *requesting_service* field. The value of the *requesting_service* field is set by the Connectivity Manager's requesting_service field during HIS verification. Check the Connectivity Manager for the value of the requesting_service. This field is case-sensitive.

1. On the Connectivity Manager, open osql (refer to page 146) and type

   use mcf;

   select distinct requesting_service from mcf_service_request;

Note:

If this Connectivity Manager receives data from multiple report sources, several *requesting_service* values may match each report source. If multiple values are returned, consult a Connectivity Manager integrator, as data and mappings may need to be updated.

Parameters	Values	Default value
-l	***dump_file_location_for_MAP_EVENT_and_MAP_EVENT_AUDIT***	/usr/mvf-mig/data
-a	None; runs the command in audit mode, which means that it tests the upgrade script without actually upgrading the database. However, due to changes to the default users in IMPAX 6.4, this mode no longer functions.	Not applicable
-v	{**52 | 53 | 62 | 63 | 64**}—refers to the version being upgraded from. If upgrading from IMPAX 6.5 or later, the version parameter can be omitted.	Not applicable

Examples:

```
database-upgrade-script -v 62
```

Migrate the database from IMPAX 6.2 to IMPAX 6.5.1.

mig-reporter

(Topic number: 10635)

Generates a progress report of long-running tasks as well as the final report output from each tool to a file or directly to the screen. This is an optional helper utility.

Parameters	Values	Default value
-h	***host_name***	None
-t	***Migration_Tool_name***	None
-r	***information_type***	None
-p	None; deletes prior entries	Not applicable
-v	None; verbose mode	Not applicable
-c	None; output to screen instead of to reports directory	Not applicable

Example:

```
mig-reporter -d mvf_52 -t system_inventory_tool
```

This command writes the output of the system inventory command to a report file.

mig-study-archive-report

(Topic number: 10637)

Checks the archive status of studies in the system.

Parameters	Values	Default value
-c	None; include listing for completely unarchived studies	Not applicable
-D	None; treat disabled archive or cache as active. Query only; will not enable the archive or cache. Overrides -z.	Not applicable
-n	***number***—Specifies the maximum number of studies to return. To return all, specify 0.	100
-o	None; output unarchived studies to a file which may be used by CLUI to initiate store job. The file is not created by default.	Not applicable
-x	*separator*—Item separator for report data	bar (|)
-y	None; include listing for partially archived studies	Not applicable
-z	None; include studies cached only on a disabled AE	Not applicable

Important!

On AS3000 systems, this script may take a long time to run. If the database is large, you may have to enlarge the size of the MVF tablespace before running it. As it runs, periodically check the /usr/mvf/data/logs/oracle/bdump/alert_mvf.log for tablespace-related warnings.

Example:

```
mig-study-archive-report -d mvf_52 -U sa -P sa -o
```

Returns a list of completely unarchived studies, partially unarchived studies, and studies cached on a disabled AE, then writes them to a file that CLUI can use to initiate store jobs.

migrate-to-lmt

(Topic number: 10643)

Migrates the database to Locally Managed Tablespaces. Second part of the Oracle upgrade procedure.

Not applicable to IMPAX 6.2 or later migrations.

migration_inventory

(Topic number: 10639)

Collects key IMPAX Server and Client information stored in database; for example, number of studies, number of objects, number of sources, and so on. Generally used only for upgrades from IMPAX 5.2 or 5.3.

Parameters	Values	Default value
-a	None; generates all reports	Not applicable
-s	None; generates system snapshot	Not applicable
-c	None; generates cluster summary for client and server machines	Not applicable

Example:

```
migration_inventory -d mvf_52 -U sa -P -sa -c -D 52_server
```

Produces a full cluster summary of client and server machines connected to the specified database.

upgrade-oracle

(Topic number: 10645)

The upgrade-oracle script upgrades Oracle from versions 9.2.0.4, 10.1.0.2, or 10.2.0.2.0, 10.2.0.4 to Oracle 10.2.0.4 October 2009 CPU.

upgrade-oracle-dg

(Topic number: 118902)

The upgrade-oracle-dg script upgrades an Oracle Data Guard server from version 10.2.0.2.0 to 10.2.0.4.2.

user_base_summary

(Topic number: 10641)

Creates a summary of users and privileges in the IMPAX 4.5, 5.2, or 5.3 system. Cannot be used for IMPAX 6.2 or later. Cannot be used to capture a summary in IMPAX 6.5.1.

IMPAX 5.2 preferences migrated to IMPAX 6.5.1

B

User preferences	Migrated?	Details
List area		
User Keywords	Yes	The keywords created to drive workflows continue to be used in IMPAX 6.5.1.
Worklists	No	The worklist architecture changed significantly. Standard worklists are used in IMPAX 6.5.1.
Scripts (Select wizards)	No	The Select Wizard is no longer available in IMPAX 6.5.1. This functionality has been replaced by standard worklists.
Columns	No	IMPAX 6.5.1 supports worklist-specific columns set up during the creation of a standard worklist.
Ronds	No	The IMPAX 5.2 Ronds information is not compatible with IMPAX 6.5.1. Use the scheduled worklists along with the Snapshot tool to create Ronds in IMPAX 6.5.1.
Configure area - Preferences		
Default Printers and Print Presets	Yes	The printer configurations are compatible with IMPAX 6.5.1.
Relevancy rules	Yes	The storage of Relevancy rules information has moved from IMPAX 5.2 database to the IMPAX 6.5.1 ADAM database.
Composite Layouts	Yes	WYSIWYG print templates have been renamed to Composite Print Layouts.

User preferences	Migrated?	Details
Patient name format (single-byte, phonetic, and so on)	No	The implementation of patient name has changed. IMPAX 6.5.1 can provide single-byte, phonetic, and ideographic versions of patient names.
Search Locations	No	Cannot migrate this user setting to an IMPAX 6.5.1 role. Search locations are set and configured within the Configure > Preferences area.
Transmit Locations	No	This user setting cannot be migrated to an IMPAX 6.5.1 role. In IMPAX 6.5.1, Transmit Locations are set and configured within the Configure > Preferences area.
Worklists - Study Arrival	No	The worklist architecture changed significantly in IMPAX 6.0.2. The studies added to the worklist are controlled by settings in the Configure > Preferences section and by Worklist settings in the Image area > Customize dialog.
Worklists - Audible Notification	No	In IMPAX 6.5.1 the Audible Notification operator is enabled by selecting Audible Notification from the User ID menu found on the List or Configure area bar.
Reporting method - Analog, TalkStation, Serial	No	Reporting methods are set in Configure area - Preferences, Text area bar, Reporting tab.
Configure area - Users and Roles		
User information (user ID, password, long name, description)	Yes	IMPAX 5.2 user information can be migrated to the IMPAX 6.5.1 ADAM database, including IMPAX passwords and user names.
User and license assignment	Yes	IMPAX 6.5.1 uses a role-based access control model. The migration process moves users from IMPAX 5.2 privilege levels to IMPAX 6.5.1 roles.
User mapping (to enterprise LDAP servers)	No	User and Group mappings are new features in IMPAX 6.5.1. They define how the users are authenticated in the cluster and what roles they are associated with.
Permissions	No	The default permissions for IMPAX 6.5.1 are based on roles. They can be customized prior to the migration if necessary. The user information for IMPAX 5.2 is not compatible with this model.
Configure area - Printers		
Printer information (type, AE title, hostname)	Yes	Printer information functionality is consistent between IMPAX 5.2 and IMPAX 6.5.1.
Film sizes	Yes	Film sizes are consistent between IMPAX 5.2 and IMPAX 6.5.1.

User preferences	Migrated?	Details
Formats	Yes	Formats are consistent between IMPAX 5.2 and IMPAX 6.5.1.
LUTs	Yes	LUTs are consistent between IMPAX 5.2 and IMPAX 6.5.1.
Image area		
Comparative Review Sequences	Yes	Comparative review sequences functionality is consistent between IMPAX 5.2 and IMPAX 6.5.1. New sequences have been added, however.
Wizards	Yes	Operations such as DELETE and EDIT apply only to user-defined wizards and not those inherited from a role.
Hanging Protocols	Yes	Hanging protocol functionality is consistent between IMPAX 5.2 and IMPAX 6.5.1.
Series Descriptions	Yes	IMPAX 6.5.1 can add generated series description or user-added manual descriptions.
Keyboard Shortcuts	Yes	Keyboard shortcuts are migrated for users, and system keyboard shortcuts are migrated for the entire site.
Top toolbar, Context toolbar	No	The default configurations for the toolbars are based on roles in IMPAX 6.5.1 and can be configured by the administrator.
Cine toolbar	No	The default configurations for the toolbars are based on roles in IMPAX 6.5.1 and can be configured by the administrator.
Screen Formats	No	The default configurations for the screen formats are based on roles in IMPAX 6.5.1 and can be configured by the administrator.
Default ERMF Settings	No	ERMF Settings are not migrated. ERMF calibration is now applied by default to studies of the selected modality.
Default Tool	No	The default tool is based on roles in IMPAX 6.5.1.
Default Tool Scope	No	The default tool scope is based on roles in IMPAX 6.5.1 and can be configured by the administrator.
Default Study/Series View modes	No	The default study/series view modes for the screen formats are based on roles in IMPAX 6.5.1 and can be configured by the administrator.
Strict Hanging protocols	No	Strict Hanging protocols are standard with an IMPAX 6.5.1 license.
User Profile (default toggle settings)	No	The user profile (default toggle settings) are based on roles in IMPAX 6.5.1.

User preferences	Migrated?	Details
Configurable Study Save	No	Configurable Study Save tool settings are controlled in the user profiles in IMPAX 6.5.1 and must be redefined.
Markup Statistics	No	Markup Statistics are controlled in the user profile in IMPAX 6.5.1 and must be redefined.
Modality Preferences	No	User preferences for a specific modality are controlled by user profiles in IMPAX 6.5.1 and must be redefined.
Window Level Presets	No	The default configurations for the Window Level presets are based on roles in IMPAX 6.5.1 and can be configured by the administrator.
Display Annotation Text	No	The feature is enabled with a study-based operation assigned to a permission.
Link Tool defaults (Nav, W/L, Zoom/Pan)	No	The default configurations for the link tool defaults are based on roles in IMPAX 6.5.1 and can be configured by the administrator.
Spine Annotation labels	No	The Spine Annotation tool is enabled only when a series containing axial images is displayed.
Saved Window positions	No	Docking Scout and floating palettes settings are controlled in the user profiles in IMPAX 6.5.1 and must be redefined.
Snapshots	No	In IMPAX 6.5.1, snapshots are saved to a scheduled worklist.
Worklists - Active Worklist settings	No	Standard Worklists now contain multiple Boolean searches to compile the search results.
Text area		
Canned Study Comments	Yes	Study comments functionality is consistent between IMPAX 5.2 and IMPAX 6.5.1.
Canned Keywords	Yes	Keyword functionality is consistent between IMPAX 5.2 and IMPAX 6.5.1.
Study data (Database migration)		
Markup	Yes	Markup is consistent between IMPAX 5.2 and IMPAX 6.5.1.
Teaching Files	Yes	The database table is the same in both versions. The administrator must make the data compatible with IMPAX 6.5.1.
Tabs	Yes	Tabs are consistent between IMPAX 5.2 and IMPAX 6.5.1.
Window Level	Yes	Window Level is consistent between IMPAX 5.2 and IMPAX 6.5.1.

User preferences	Migrated?	Details
Magnification	Yes	Magnification is consistent between IMPAX 5.2 and IMPAX 6.5.1.
Geometry	Yes	Geometry is consistent between IMPAX 5.2 and IMPAX 6.5.1.
Image Calibration	Yes	Image Calibration is consistent between IMPAX 5.2 and IMPAX 6.5.1.
Rearranged Images	Yes	Rearranged Images are consistent between IMPAX 5.2 and IMPAX 6.5.1.
Summary Series	Yes	Summary series created in IMPAX 5.2 are migrated to IMPAX 6.5.1; however, users can only view the migrated summary series and cannot edit the migrated summary series.
Keywords	Yes	Keyword functionality is consistent between IMPAX 5.2 and IMPAX 6.5.1.
Study Comments	Yes	Study comments functionality is consistent between IMPAX 5.2 and IMPAX 6.5.1.
Teaching Files - Folder access	No	IMPAX 5.2 teaching file folders are migrated to IMPAX 6.5.1, but the permissions to access these folders are not. To allow users to view the teaching files, the PACS Administrator must manually configure the access to each teaching file folder.

Station settings	Migrated?	Details
Configure area - Stations *		
Video Card Settings	Yes	Video card settings are consistent between IMPAX 5.2 and IMPAX 6.5.1.
Monitor Layout, Calibration, Extended settings (NEMA, Pixel Size, JL Cooper jog shuttle)	Yes	Monitor layout, calibration, and extended settings are consistent between IMPAX 5.2 and IMPAX 6.5.1.
Barcode Settings	Yes	Barcode settings are consistent between IMPAX 5.2 and IMPAX 6.5.1.
Memory Configuration	No	Memory configuration has changed for IMPAX 6.5.1 and must be redefined.

* These values are updated when a user logs into a particular IMPAX Client workstation for the first time.

Running osql to access SQL Server data

C

The osql utility can be used to access and change data in instances of SQL Server. This command prompt utility can execute one or more SQL statements and can either display the results of a query, or save the results in a text file.

Use the osql utility to enter Transact-SQL statements, system procedures, and script files. The utility uses ODBC to communicate with the server. As of SQL Server 2005, osql replaced the isql utility entirely.

To run osql to access SQL Server data

1. Open a command prompt and type

   osql -U*login_id* -P*password* -S*server_name*

   where

   - ***login_id*** is the user login ID. It is case-sensitive.
   - ***password*** is a user-specified password. It is case-sensitive. If the **-P** option is not used, you are prompted for a password.
   - ***server_name*** specifies the default instance of SQL Server to connect to or the named instance of SQL Server on that server. If no server is specified, osql connects to the default instance of SQL Server on the local computer. This option is required if you are executing osql from a remote computer.

2. At the prompt, you can type SQL statements and run them interactively (for example).

Note:

As you type SQL statements and press **Enter**, osql caches the statements, but does not run them. To run the cached statements, type **go** at the start of a new line, then press **Enter**.

3. After you have run the last batch of SQL statements, to terminate the utility, type **exit** or **quit** at the start of a new line.

For more information about this utility, refer to Command Prompt Utilities on the Microsoft site (http://msdn.microsoft.com/en-us/library/aa246885(v=SQL.80).aspx).

External software licenses

D

Some of the software provided utilizes or includes software components licensed by third parties, who require disclosure of the following information about their copyright interests and/or licensing terms.

AutoFac 2.1.13

(Topic number: 121742)

Autofac IoC Container

Copyright (c) 2007-2008 Autofac Contributors

http://code.google.com/p/autofac/wiki/Contributing

Other software included in this distribution is owned and licensed separately, see the included license files for details.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE,

ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Cygwin

(Topic number: 121758)

Copyright 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010 Red Hat, Inc.

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License (GPL) as published by the Free Software Foundation version 2 of the License.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA. Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

1. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

   Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

2. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

   You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

3. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

   a. You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

   b. You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

   c. If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print

or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

4. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

   a. Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

   b. Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

   c. Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

      The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

5. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
6. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.
7. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.
8. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

   If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

   It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

   This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.
9. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so

that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

10. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

    Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

11. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

1. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION
2. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Editline 1.2-cstr

(Topic number: 121768)

ICU License - ICU 1.8.1 and later

(Topic number: 13533)

OpenSSL

(Topic number: 121771)

This is a copy of the current LICENSE file inside the CVS repository.

LICENSE ISSUES

==========

The OpenSSL toolkit stays under a dual license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues related to OpenSSL please contact openssl-core@openssl.org.

OpenSSL License

/*

==========

* Copyright (c) 1998-2008 The OpenSSL Project. All rights reserved.

* Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgment: "This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (http://www.openssl.org/)"
4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact openssl-core@openssl.org.
5. Products derived from this software may not be called "OpenSSL" nor may "OpenSSL" appear in their names without prior written permission of the OpenSSL Project.
6. Redistributions of any form whatsoever must retain the following acknowledgment: "This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/)"

*

* THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS'' AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THEIMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES

(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

*

==========

*

* This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

*

*/

Original SSLeay License

/* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)

* All rights reserved.

* This package is an SSL implementation written by Eric Young (eay@cryptsoft.com). The implementation was written so as to conform with Netscapes SSL.

*

*This library is free for commercial and non-commercial use as long as the following conditions are aheared to. The following conditions apply to all code found in this distribution, be it the RC4, RSA, lhash, DES, etc., code; not just the SSL code. The SSL documentation included with this distribution is covered by the same copyright terms except that the holder is Tim Hudson (tjh@cryptsoft.com).

* Copyright remains Eric Young's, and as such any Copyright notices in the code are not to be removed. If this package is used in a product, Eric Young should be given attribution as the author of the parts of the library used. This can be in the form of a textual message at program startup or in documentation (online or textual) provided with the package.

*

* Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement: "This product includes cryptographic software written by Eric Young (eay@cryptsoft.com)" The word 'cryptographic' can be left out if the rouines from the library being used are not cryptographic related :-).

4. If you include any Windows specific code (or a derivative thereof) from the apps directory (application code) you must include an acknowledgement: "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"

*

*THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

* The licence and distribution terms for any publically available version or derivative of this code cannot be changed. i.e. this code cannot simply be copied and put under another distribution licence [including the GNU Public Licence.]

*/

Xerces C++ Parser, version 1.2

(Topic number: 121761)

This product includes software developed by The Apache Software Foundation (http://www.apache.org/). Please read the LICENSE files present in the Help > About dialog of the IMPAX Client.

Zlib

(Topic number: 7595)

zlib.h -- interface of the 'zlib' general purpose compression library Version 1.2.1, November 17th, 2003

Copyright (C) 1995-2003 Jean-loup Gailly and Mark Adler

This software is provided “as-is”, without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Glossary

A

ADAM

Active Directory Application Mode. Directory services for an individual application that controls user login and privilege information.

AE

Application Entity. In DICOM, the AEs are different stations in the enterprise that communicate with one other. Each requires a unique identifier known as the AE title.

all-in-one configuration

A configuration in which the Database, Archive Server, Network Gateway, and Curator Server components are all installed on a single Windows server, along with the Application Server software.

Application Server

Intermediary server between IMPAX Client and IMPAX Server machines. LDAP, Documentation, and other Business Services reside on the Application Server.

archive

A physical device or a file system used for long-term storage and retrieval of studies.

Archive Server

The IMPAX server that manages the archive. The Archive Server handles requests to store studies to the archive and to retrieve studies from the archive. The Archive Server stores studies in its cache before archiving them to long-term storage.

C

cache

Temporary storage area for data on a computer's local or external hard drives.

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.

Configure area

Section of the IMPAX Client used by PACS Administrators to set up roles and users, define printers, configure stations, and set certain preferences.

Connectivity Manager

A middleware component in the integration between hospital information systems and other hospital imaging departments. Connectivity Manager also provides connectivity to each modality and the PACS.

containers

In the navigation pane of the Configure area - Stations section, containers hold station containers. Much like a file folder, containers organize station containers into logical groupings. The container itself cannot be configured. Note that containers are surrounded by [square brackets].

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 Server

Server that hosts the Oracle or SQL database.

DNS

Domain Name System. A general-purpose distributed, replicated, data query service mainly used on the Internet for translating host names into Internet addresses. Also refers to the style of host name used on the Internet, though such a name is properly called a *fully qualified domain name*.

F

firewall

On a local area network (LAN) connected to a larger network, the security system that prevents outside intrusion and that keeps internal information from getting out. Typically, all traffic must pass through the machine on which the firewall is implemented.

H

HIS

Hospital Information System. The database used by a hospital to manage patient information and scheduling.

host name

The host name is a common alphanumeric alias for the IP address of a server.

HTTP

Hypertext transfer protocol, a TCP-based protocol for transferring hypertext requests and information between servers and browsers.

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.

IMPAX Client

IMPAX Clients are used to view study images and data. The IMPAX Client integrates PACS, RIS, and reporting applications into a single delivery of information.

IP address

The Internet Protocol address is a numeric address that identifies the station to other TCP/IP devices on the network.

L

LDAP

Lightweight Directory Access Protocol, the technology for storing user names and IDs, passwords, and user-related preferences. This information is stored in an LDAP depository.

license, IMPAX Client

IMPAX Client licenses define which IMPAX features users in a role can be given permission to access. They include standard and optional features. IMPAX Client license files are installed on Application Servers and are assigned to roles.

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.

message

Every event creates a message that contains information about the event.

mixed-host configuration

In an IMPAX mixed-host configuration, an AS3000 (Oracle) Database Server is combined with AS300 Archive Server and Network Gateway components. This configuration combines the power of the Solaris-based Database Server with the reduced cost of the Windows-based servers for other components.

multi-host configuration

Server configuration in which the Database is installed on a separate computer from the Archive Server. Network Gateway may be installed on yet another server, or it may be installed along with the Database or Archive Server (or both).

multiple IMPAX cluster configuration

In a multiple IMPAX cluster configuration, an IMPAX cluster is linked to one or more other IMPAX or external PACS clusters, such that patient and study data can be shared and synchronized between them.

MVF

Refers both generally to the Agfa IMPAX PACS system and specifically to the name of the IMPAX Server database.

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

operations, IMPAX

The IMPAX actions allowed by a permission. For example, operations include dictation, printing to paper, and executing SQL statements through CLUI. You can further refine some operations by setting a study status

flag on the operation. For example, you can allow printing only on dictated studies.

P

PACS

A Picture Archive and Communication Systems (PACS) makes it possible to electronically store, manage, distribute, and view images.

permissions, IMPAX

Permissions define the available IMPAX features and types of studies that users in a particular role have access to. Permissions are made up of a set of operations.

port number

In network communications, stations are identified by both a host name and a port number. The port number can be thought of as a specific channel on the station where the network message is sent. Port numbers allow different applications on the same computer to use network resources without interfering with each other.

preferences

Configurable options in IMPAX that can be set to accommodate the preferred workflow of defined groups or individuals.

privilege level

A particular set of features and functions that limit or extend the capability of the system. Each user is assigned a privilege level.

production server

The permanent IMPAX Server—the one that remains in place after the training server is reconfigured and the traveling server removed.

protocol

Language in which two systems communicate. For example, DICOM, HL7, and SQL are all protocols.

R

remote station

Any station that can be accessed over the network. A PACS, display station, HIS, RIS, or CIS are examples of remote stations. In an enterprise solution, remote stations may also be thought of as those connecting to the network through the Internet, rather than through any direct in-hospital or on-campus connections.

RIS

Radiology Information System. Responsible for scheduling exams and for report management in the Radiology department.

role

A collection of users or other roles that holds IMPAX Client permissions and preferences as well as licensing options. For example, a role can represent the enterprise, the institution, a department, or a team.

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.

single-host configuration

A configuration in which the Database, Archive Server, and Network Gateway server components are all installed on a single server.

single-server configuration

An IMPAX single server is a Windows server that runs the AS300 Server software in a single-host configuration along with the Application Server and Connectivity Manager software.

site

A type of resource, referring to the overall hospital facility that houses departments, locations, specialties, and stations.

standalone configuration

In an IMPAX standalone configuration, the IMPAX AS300 Server, Application Server, and Client software are all installed on the same Windows server.

station containers

In the navigation pane of the Configure area - Stations section, the station containers are like folders that organize groups of stations. You can set configuration options for the station containers, and all stations within that container inherit those configuration options.

stations

Within the context of the IMPAX Client configuration interface, refers to a computer that has the IMPAX Client installed. Stations can be in a radiology reading room, in the offices of clinicians, or in the homes of radiologists, for example. When a user logs into IMPAX for the first time, the computer name is listed in the navigation pane of the Configure area - Stations section. Stations are organized under station containers. You can set configuration options, such as diagnostic monitor settings, memory usage, and so on, for a specific station, or the station can inherit its configuration from the station container.

T

TalkStation

TalkStation is voice recognition software that can be integrated with IMPAX. TalkStation can convert spoken speech to typed text without having to go through a transcription phase.

Text area

Component of the IMPAX Client that displays study, order, and report information.

training server

A system made up of one or two AS300 (Windows-based) servers, used to train users on IMPAX 6.5.1 as well as migrate user accounts, passwords, and preferences from previous versions of IMPAX. When a traveling server is not used, this server may also be used as a temporary report repository. The training server is intended to operate in non-clinical mode.

traveling server

An AS3000 server running the previous version of IMPAX, shipped to the site approximately two weeks prior to the upgrade weekend. Incoming studies are routed to this server to create a temporary study data repository. It also houses reports migrated from IMPAX 5.2 Broker. This server becomes the production server during the upgrade weekend, greatly reducing site down time.

U

user

Users represent individuals, such as a radiologist or a clinician. Each user must belong to at least one primary role. A user can also belong to other secondary roles. Users inherit permissions, licenses, and preferences from their role.

V

volume

A volume refers to the division of data on the media. For example, if a tape has two sides, each side is referred to as a separate volume.

W

wavelet compression

Compression method using a proprietary compression algorithm that can be uncompressed only by systems that support that proprietary algorithm.

web cache

Images that have been compressed by Curator are stored in the web cache. These images are compressed using Mitra Wavelet compression to reduce their size for access over low bandwidth.

wizard

Wizards are used to automate processes. Wizards perform a predetermined sequence of actions after they are selected and applied.

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.

Index

C

D

E

F

G

H

I

K

L

M

N

O

P

Q

R

S

T

U

V

W

X

Z