# International Postal System

# Installation Guide

*version 2017 and later*


Contact

Postal Technology Centre - Universal Postal Union Weltpoststrasse 4 3000 Bern 15 - Switzerland

Phone: +41 31 350 31 11 / Fax: +41 31 352 43 23

Email: ptc.support@upu.int


UPU UNIVERSAL POSTAL UNION

# Table of contents

# About this document

## Intended audience

This manual is intended for use by IPS System Administrators and members of the Postal Technology Centre of the Universal Postal Union who are responsible for installing the software.

Installing IPS requires familiarity with Windows operating systems and SQL Server. The person installing any of the system components should have experience installing, configuring, and administering both of these applications.

This manual does not provide instructions on how to use Microsoft products. Where this documentation provides instructions specific to Windows or SQL Server, it is limited to those areas that directly affect IPS. If you need more information about SQL and the Windows operating systems refer to the documentation for these applications or search the Microsoft web site.

## How to use this manual

Each installation of IPS is different. The components you install depend on the individual postal organization's requirements. This manual includes documentation for installing all the components of IPS, so some of the sections of this manual may not apply to your particular installation.

First, read "Planning the installation" on page 9 to determine the type of setup you are installing. Second, check your system meets the minimum requirements by reading "Hardware and software requirements" on page 14. Finally, read the step-by-step installation guide in "Quick installation overview" on page 24 to install IPS, skipping any optional steps that do not apply to your particular setup.

It is recommended that you read through this document before attempting to install IPS. You must have a good understanding of the procedures for installing components that apply to your particular installation before you begin.

 However, the Postal Technology Centre welcomes your input. Please email your questions, comments and suggestions to helpdesk.ips@upu.int.

## Migrating from an earlier IPS version

If you need to upgrade your IPS software from an earlier version, this involves migrating the IPS database to the latest version, as well as installing the latest version of IPS on all of the workstations of your organization. This ensures that you have the latest database structures, queries, procedures etc. Some reference tables will also be updated by the procedure.

For full details on migrating your existing IPS installation, see section "Upgrading IPS " on page 68.

# Introduction to IPS

## Overview

The International Postal System (IPS) is a software application that provides postal administrations with computerized assistance in the handling of all types of outbound and inbound international mail. IPS was developed at the Universal Postal Union (UPU) in Bern, Switzerland.

The IPS application is an integrated international mail management system that combines mail processing, operational management, and EDI messaging in one application. IPS incorporates technologies such as bar code scanning to ensure fast and accurate data capture. IPS supports full inbound and outbound mail management functions, including:

- Automated dispatch handling
- Consignment scheduling
- Automatic preparation of standard UPU labels and documentation
- Item and receptacle bar codes
- International two-way EDI messaging
- Detailed inquiry at the item, receptacle, dispatch, and consignment level
- Tracking and tracing
- Accounting

IPS provides a means for postal operators to have an accurate and comprehensive view of their mail movement covering every point between origin and destination. This includes transit offices of exchange, international carriers, and Customs handling. IPS is designed to help postal operators improve the quality of their international mail service by accurately measuring the mail delivery cycle and end-to-end monitoring of items, receptacles and dispatches.

IPS supports all categories of international mail, as well as domestic dispatching. Features such as tracking and tracing, management functions at the national and local level, and support for electronic data exchange (EDI) expand the capabilities of IPS, providing postal organizations with a global solution for international mail processing. IPS handles EMS items as well as parcels, letters, insured and registered mail, and empty bags, and produces the standard documents that meet international requirements for mail dispatches and consignments.

The tracking and inquiry features allow postal operators to monitor the delivery process of all identified mail items such as EMS, parcels, registered and insured mail. The management features in IPS provide system administrators at both the national and local level with a means to monitor and maintain the vital operational parameters, such as flight schedules, routing plans, and office codes.

IPS also includes an accounting module that supports pre-defined accounting actions for individual partners and groups, retention of historical accounting data and management of verification notes.

## Components of IPS

IPS consists of several distinct hardware and software components that can be installed in different configurations depending on the postal operator's IT infrastructure, performance targets and operational requirements.

### Hardware components

The following are the minimum hardware components you need for running IPS:

- A machine to function as the **primary domain controller**. The primary domain controller controls the local area network security. Every location that uses a client-server configuration, with Windows authentication must have a primary domain controller. The primary domain controller is usually a separate machine from the other servers, but does not have to be. A separate machine to function as the **backup domain controller** is recommended, but not required, at all mid-level to large sites.
- A machine at each site to function as the **database server**. The database server contains the IPS databases and controls the storage of the information related to the international mail handling. Large enterprises have a national database server and local database servers at each local site. Smaller single-office organizations might only have one database server.
- A machine at the national site to function as the **communications server**. The communications server maintains the communication links between the postal organization and the EDI network. If possible, the communications server should be a separate machine from the database server.
- **Workstations** running the IPS software. These are used by the postal operator's staff to perform day-to-day inbound and outbound mail operations, as well as accounting actions.
  See the IPS online help for full details of these functions.

In addition, you can optionally use a machine to act as a **business server**, a connection point between a client workstation and the database server.

Note: If the location uses a **business server**, with SQL authentication, it is not necessary to install the primary domain controller.

With the exception of the backup domain controller and the business server, these machines are mandatory for every installation. However, it is possible for one machine to serve more than one purpose. For example, in a small-volume postal organization, one server can act as both primary domain controller/business server and database server.

The components that are needed at each site are determined by a survey of the individual site. The site surveys must be conducted before IPS can be installed. The site survey is necessary to understand the requirements for a particular site. After the site survey, a project plan is created and must be approved by the postal administration and the UPU.

It is recommended that when possible, a test platform is created at the site. This test platform can be used to train IPS users and for testing upgrades of IPS before you put a new version into production.

## Software components

IPS consists of several components that can be installed separately when you run the setup program. When you run the installation program, you can select the specific components to install. The components you install depend on the type and size of the site, whether the machine is a server or a workstation, and whether any of the components have already been installed. Some of these components can be installed automatically when you run the IPS setup program; others require some additional work to implement.

- The **IPS database** contains the data that IPS uses for management and user functions. The IPS database contains two kinds of data. Reference data is all the information pertaining to administrative functions, such as country codes, airlines and user permissions. The operational data is the daily information about the processing of items, receptacles and dispatches. The database must be installed on all database servers. An archive database is optional, but strongly recommended. It is essential that you back up your database regularly (preferably daily). Using SQL, you can back up a database manually, or automatically by scheduling an automatic back up that runs at a specific time.
- An **Archive database** is optional but highly recommended. Operational data should be archived regularly to keep the operational database from growing so large that it uses up all the space on the server, and reduces performance. The archive database stores and compresses the operational data. The setup program does not allow you to install the archive database at the same time as the IPS database if you want to install them on the same machine. You must run the setup program a second time to install the archive database.
- The **IPS software** is the actual application comprising the screens that users enter data in. The IPS software must be installed on every machine that needs to run IPS. Although it is not strictly necessary, it is strongly recommended that you also install the IPS software on the database server. To be able to install the software, you must either have already installed the database, or be installing it at the same time. When you install the software on client workstations in your network, they must be able to access the IPS database.
- The **EDI and Gateway services** are responsible for interchanging EDI message data. The EDI services should be installed on a machine physically located at the national site. This can be any machine on the local network that has access to the IPS database. The setup program installs the files necessary to enable this service, but you must use IPS to set up the schedule for the exchange.
- The **business service** serves as a connection point between the database server and client workstation. The business service is usually installed on the business server, although this depends on your individual site configuration. The setup program contains a wizard to help you automatically set up this configuration.
- **Replication** is necessary in postal organizations with multiple offices. Replication is the process that allows the transfer of data between databases. You must install the replication process on the database server at each site that uses replication.
- An **external system interface** is software that exchanges data between the IPS database and another software program, such as a point-of-sale application. To interface IPS with another application, you must set up a schedule to exchange data between IPS and the external system. This process is very similar to setting up the EDI service.

# Planning the installation

The postal organizations that use IPS have different configuration requirements, based on the number of mail items processed per year. The number of servers and workstations at a site varies. When a postal organization is interested in IPS, they must fill out a survey form. The results of the survey are used to determine the organization's needs. Before any application is implemented, a site survey is taken to determine the number of servers and workstations a site should have.

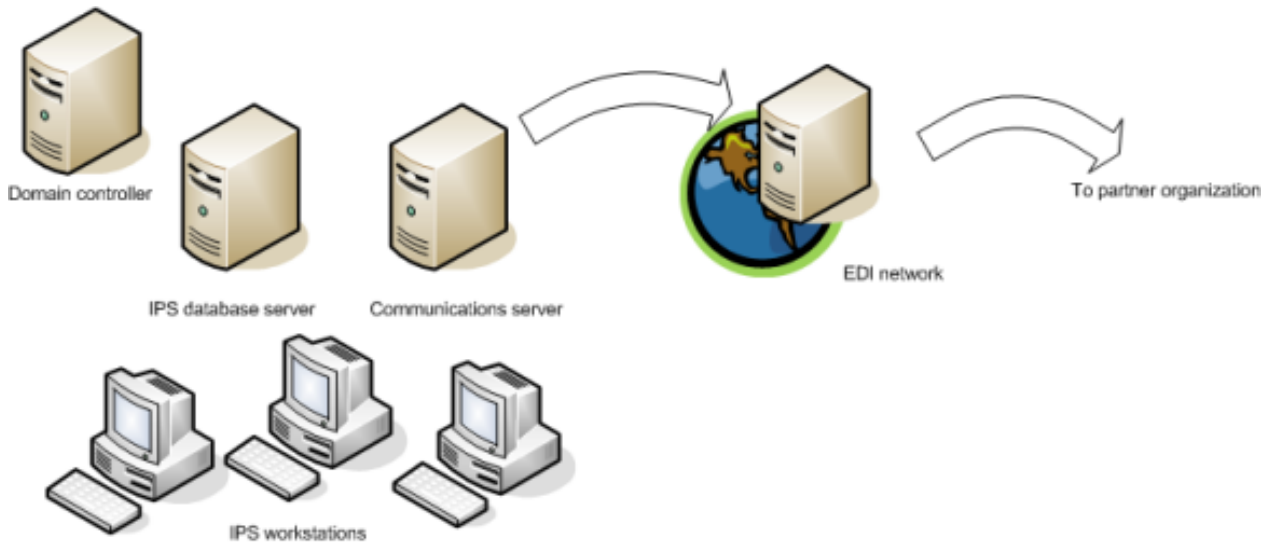
There must always be at least one server that functions as the primary domain controller and at least one workstation. A site's configuration determines the exact IPS components that must be installed. For example, in postal organizations where there is only a single office, it is not necessary to install the replication component.

## Single-office configurations

Small enterprises, defined as processing up to 60,000 items per year, typically have only one site that uses IPS. A medium-sized postal organization, (processing 60,000 to 200,000 mail items per year) may have a single office or multiple offices. Very small sites may have only a single machine that functions as the domain controller, database server, and communications server. However, a typical single-office configuration for a medium-sized organization includes the following hardware components:

- 1 national server functioning as the primary domain controller (PDC)
- 1 database server, which can also function as the backup domain controller (BDC)
- 5 to 10 workstations

The following diagram illustrates this type of configuration:



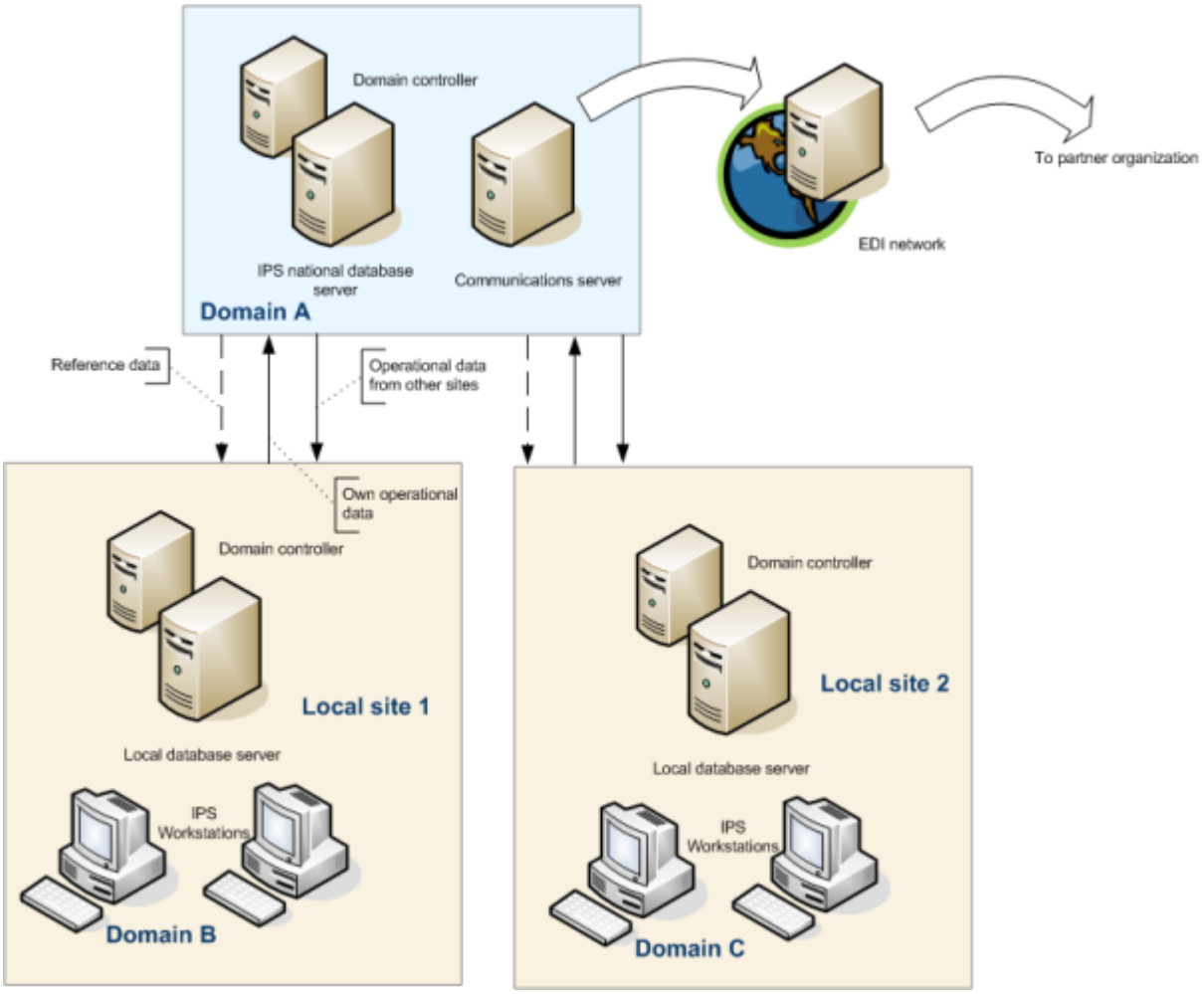
## Multiple-office configurations

Medium to very large enterprises (60,000 to more than 1.5 million items per year) consist of multiple sites. Multiple-site installations use data replication to share current operational data between sites. Typically, this type of configuration uses the following hardware components:

- 1 national server functioning as the primary domain controller (PDC)
- 1 database server, which can also function as the backup domain controller (BDC) - there may be one per site, or just one central national server, accessible by all of the local sites
- 1 local server at each office functioning as a primary domain controller
- multiple workstations

Important:Windows XP is not supported on the servers for multi-site installations because of replication issues. Use Windows 2000 on servers in multi-site installations.

The following diagram illustrates this type of configuration:



## Business server

A business server is a connection point between a client and the database server. A business server limits the number of concurrent connections that are open on the server. This increases scalability for each IPS system.

The business server creates a data connection pool for the server. This means that users can have more connections to the server. This is because each workstation requesting access to the database server connects to the business server instead of the database server and when a connection to the database server becomes available, the business server routes the connection to the workstation.

Using a business server offers the following additional advantages:

- Enhanced security: database access can be restricted to a single business server residing in a DMZ with the IPS clients
- Simplified configuration management: if the IPS database is moved or modified, only the business server needs reconfiguring
- Remote service administration: the Import/Export service, for example, can be started or stopped from any IPS client

You define the server name and port number when you configure the business server machine. Record this information in order to use it when you connect to the business server.

## System deployment

The process to implement the IPS system takes place in two main phases. The first step that always takes place before the actual installation of the application is the site survey visit. The site survey is important to understand the requirements of the organization and to assist with planning the actual installation. After the site survey visit is completed and the client has acquired the necessary hardware, the application is ready to be installed and tested in a second implementation visit.

### Site Survey Visit

The primary purpose of the site survey is to define the objectives of the project. During this phase, the UPU representative works with the postal organization to understand their current operational process. This knowledge is used to determine the configuration, the hardware infrastructure and the production sites.

The objectives of the site survey visit are to:

- Demonstrate the application
- Identify the liaison and management personnel who will be responsible locally for the project
- Assess the organization's specific operational requirements
- Determine the needs for technical training
- Delegate the tasks and responsibilities of the two parties (the postal organization and the PTC)
- Obtain precise figures for volumes of mail

- Ascertain reference data requirements
- Assess physical conditions and existing infrastructure in facilities if necessary
- Calculate the global cost of the project
- Evaluate equipment and network infrastructure
- Test the local communications infrastructure
- Evaluate networking requirements for type of connection and frequency of transmissions
- Establish a calendar for the phases to follow

The information gathered during the site survey visit makes it possible to calculate the global cost of the project and to write a project plan explaining the conclusions for each topic mentioned above. This project plan details all project steps, prerequisites, estimated costs and responsibilities. It must be accepted and signed by both parties. The document then serves as a contract between the post and the PTC of the UPU. The signature is the prerequisite for the continuation of the deployment project.

### Implementation Visit

During the implementation visit, a UPU technical expert installs, tests, and configures the system. Technical and functional training on the application is also provided to enable the post's technical team to provide support to end users and to execute the daily maintenance tasks.

After installation, communication tests are performed. With IPS, exchange with other POST*Net partners is tested first, then exchanges with partners outside the POST*Net network, such as GXS.

The main activities for the implementation visit are:

- Validation of installed equipment and network infrastructure
- Testing of the POST*Net connection for reliability and performance
- Installation and validation of the operating system, SQL, and the database
- Installation and validation of IPS
- Basic configuration of the system, including user workstation profiles and privileges
- Training postal enterprise staff
- Troubleshooting
- Observation of EDI exchanges
- Production of a detailed report for the postal enterprise

## Network considerations

Local-area and wide-area networks are vital to IPS. Two network components in particular are important to IPS: a postal organization's local network, and the connection between the organization and the EDI network. Within a postal organization, the network allows data to be replicated between offices.

The type of network structure a postal organization uses depends on many factors. Network configurations vary widely and can be affected by factors such as distance, cost and availability of technology. IPS can run on networks using different protocols, as long as they run under IP (Internet Protocol) and are recognized by Windows. Some examples are ISDN, or leased line networks. It is not necessary to use DHCP. In postal organizations that have only a few machines in the network, it may make more sense to define fixed Internet addresses.

The UPU recommends that customers run IPS on a local-area network capable of speeds of at least 100 Mb/s. Slower network speeds do not impact the functionality of IPS, but do affect its performance. The national site must also have access to an EDI network, such as the UPU's POST*Net network, to be able to transmit and receive data about EDI mail events.

You can use any networking protocol that is recognized by your operating system. If your network uses TCP/IP and you have a DHCP server, you can integrate all IPS machines into your current network configuration. The choice of cabling system used within a postal organization is entirely the responsibility of the organization. Either a dedicated line or dialup connection can be used. For the dialup option, the modem must be connected to a serial port of the server and the appropriate PPP (point-to-point protocol) software must be configured.

# Hardware and software requirements

IPS consists of several distinct hardware and software components, and supported peripherals, that can be installed in different configurations depending on the postal operator's IT infrastructure, performance targets and operational requirements.

The PTC's recommended minimum hardware and software requirements, along with supported software environments and peripherals, are listed below. Using the recommended hardware, software and peripherals will ensure IPS functions correctly and provides optimum performance.

Note: These recommendations are limited to the version of IPS indicated in this guide. Please contact the PTC for recommendations for other IPS versions.

## Table of IPS components

The following table contains a complete list of IPS components:

| Software components | | Description |
|---|---|---|
| ***Databases*** | Production database | Repository of IPS production data |
| | Archive database | Repository of IPS archive data |
| | Web Tracking database | Repository of the data used to provide mail item tracking |
| ***Services*** | Business service | Proxy service between workstations and database components |
| | Communication service | EDI and external interfaces with local systems |
| | Gateway service | Connection to the UPU EDI network (POST*Net) |
| | Web Tracking service | Web application for online mail item tracking |
| | Web Client service | Web application for performing online operational functions |
| ***Applications*** | IPS installed on client workstations | The IPS application itself |
| | Web Tracking | Web application for online mail item tracking |

| Software components | | Description |
|---|---|---|
| | Web Client | Web application for performing online operational functions |

The following sections provide the detailed technical hardware and software environment requirements for each IPS component.

## Database requirements

This section gives the hardware and software requirements for IPS database servers.

The table below applies to the:

- Production database - the repository of IPS production data
- Archive database - the repository of IPS archive data
- Web Tracking database - repository of the data used to provide mail item tracking

| Hardware | Configuration |
|---|---|
| CPU | - Quad core |
| RAM | - 8GB or greater |
| Disks | - RAID level protection with hot spare<br>- 250GB or greater |
| Network interface | - 1000 Ethernet |
| Power supply | - UPS Backup |
| **Software** | **Configuration** |
| Operating systems | - Windows 2016<br>- Windows 2012 R2<br>- Windows 2012<br>Virtualized environment is supported |
| SQL Server | All of the following with the latest service pack:<br>- Microsoft SQL 2016<br>- Microsoft SQL 2014<br>- Microsoft SQL 2012<br>Note: The compatibility level of your IPS |

| | |
|---|---|
| | database must be set to a minimum of SQL 2012 (110). |

## Service requirements

This section gives the hardware and software requirements for servers where the different IPS services are installed.

### Business and communication services

The business and communication services are Windows services that facilitate data flow between the IPS workstations, local systems and peripherals. The table below applies to the:

- Business service - proxy service between workstations and database components
- Communication service - EDI, XML Import-Export and IPS customer-specific interfaces

| Hardware | Configuration |
|---|---|
| CPU | - Quad core |
| RAM | - 4GB or greater |
| Disks | - 160GB or greater<br>- NTFS 512 bytes cluster size for Communications server |
| Network interface | - 1000 Ethernet |
| Power supply | - UPS Backup |
| **Software** | **Configuration** |
| Operating systems | - Windows 2016<br>- Windows 2012 R2<br>- Windows 2012<br>Virtualized environment is supported |
| .NET Framework | - .NET Framework 4.6 |

### Web Tracking service

This service facilitates online access to the Web Tracking interface.

Installation and configuration instructions for this service can be found in the IPS Web Tracking Guide.

| Hardware | Configuration |
|---|---|
| CPU | - Quad core |
| RAM | - 4GB or greater |
| Disks | - RAID level protection with hot spare<br>- 160GB or greater |
| Network interface | - 1000 Ethernet |
| Power supply | - UPS Backup |
| **Network** | **Configuration** |
| External access | - 128Kb/s Internet or intranet connection |
| **Software** | **Configuration** |
| Operating systems | - Windows 2016<br>- Windows 2012 R2<br>- Windows 2012<br>Virtualized environment is supported |
| Internet Information Server (IIS) | - IIS 7.0, 7.5, 8.0, 8.5 |
| .NET Framework | - .NET Framework 4.0 |

## Web Client service

This service facilitates online access to the Web Service interface.

Installation and configuration instructions for this service can be found in the IPS Web Client Deployment Guide.

| Hardware | Configuration |
|---|---|
| CPU | - Quad core |
| RAM | - 4GB or greater |
| Disks | - RAID level protection with hot spare<br>- 160GB or greater |
| Network interface | - 1000 Ethernet |

| | |
|---|---|
| Power supply | - UPS Backup |
| **Network** | **Configuration** |
| External access | - 128Kb/s Internet or intranet connection |
| **Software** | **Configuration** |
| Operating systems | - Windows 2016<br>- Windows 2012 R2<br>- Windows 2012<br>Virtualized environment is supported |
| Internet Information Server (IIS) | - IIS 7.5 |
| .NET Framework | - .NET Framework 4.6 |

## Gateway service

The IPS connection to the UPU POST*Net for the transfer of EDI files is facilitated by a standalone application - the Postal Network Gateway (PNG). Installation and configuration instructions for this service can be found in the *PNG User Guide*.

Important:Although it is not mandatory to use PNG for exchanging EDI messages, you must install a tool capable of sending and receiving EDI messages before you can send and receive EDI messages to and from IPS.

The table below applies to Gateway service - PNG version 2 and later.

| **Hardware** | **Configuration** |
|---|---|
| CPU | - Dual core |
| RAM | - 4GB or greater |
| Disks | - 100GB or greater<br>- NTFS 512 bytes cluster size |
| Network interface | - 1000 Ethernet |
| Power supply | - UPS Backup |
| **Network** | **Configuration** |
| External access | - 128Kb/s Internet connection |
| **Software** | **Configuration** |

| | |
|---|---|
| Operating systems | - Windows 2016<br>- Windows 2012 R2<br>- Windows 2012<br>Virtualized environment is supported |
| .NET Framework | - .NET Framework 3.5 |

## Application requirements

This section gives the hardware and software requirements for client workstations where the different IPS applications are installed.

### Virtualized environments

Important:Installing IPS applications in a virtualized environment is not supported.

### IPS

The IPS application is used for postal operational and accounting procedures.

| Hardware | Configuration |
|---|---|
| CPU | - Dual or Single core |
| RAM | - 2GB or greater |
| Disks | - 50GB or greater |
| Network interface | - 1000 Ethernet |
| Power supply | - UPS Backup |
| Monitor | - Recommended minimum screen resolution of 1024x768 |
| **Software** | **Configuration** |
| Operating systems | 32-bit and 64-bit editions of the following:<br>- Windows 10<br>- Windows 8 (8.1) |
| .NET Framework | - .NET Framework 4.6 |

### The Web Tracking application

The Web Tracking application is used for public mail item track & trace access. Web Tracking can be used on any Internet browser.

Installation and configuration instructions for the Web Tracking application can be found in the IPS Web Tracking Guide.

### The Web Client application

The Web Client application is used for operational functions by postal operators. Details of recommended Internet browsers can be found in the table below.

Installation and configuration instructions for the Web Client application can be found in the IPS Web Client Deployment Guide.

| Software | Configuration |
|---|---|
| Internet browser | Must support HTML5, CSS3, ECMAScript 5 and PDF version 1.4. Recommended browsers are:<br>- Chrome (48.0.2564 or above)<br>- Firefox (48 or above)<br>- Internet Explorer (9 or above) |

## Software translation

IPS is supplied in English. It is also available in French, Spanish, Portuguese and Russian. If your organization wants to translate the IPS user interface into your local language, you need to use a software translation (localization) application.

| Software | Configuration |
|---|---|
| RC-WinTrans | - Version 9.0 or later (used by the PTC) |
| Other software translation products | - Any product that can handle both Windows 'traditional' resources and resources created with Microsoft's .NET Framework. |

# Supported peripherals

The following table contains a complete list of IPS supported peripherals:

| Peripheral | Description |
|---|---|
| Laser printers | For printing operational and accounting documents |
| Label printers | For printing labels |
| Electronic scales | For measuring and recording the weight of receptacles and mail items |
| Handheld scanners (barcode readers) | For reading barcodes on labels and documents |
| Portable Scanning Device (PSD) | Portable devices for performing operational functions |

The following sections provide the detailed technical hardware and software environment requirements for each IPS peripheral.

## Laser printers

Laser printers are used to print operational and accounting forms.

| Hardware | Configuration |
|---|---|
| Document printer | - Provides a Windows driver |

## Label printers

The minimum label size is 126mm x 80mm.

| Hardware | Model |
|---|---|
| Monarch | - Monarch 9xxx series |
| Zebra | - Zebra G-series or industrial printers series for high volume |
| Datamax | - Datamax e-Class series or m-Class series for high volume |
| Citizen | - Citizen CL-S600 and CL-S700 series |

| | |
|---|---|
| Other models | - Any label printer that has a Windows driver can be used with IPS<br>A USB communication usually performs better (faster) than a serial port communication |

## Electronic scales

Electronic scales are used to measure and record the weight of receptacles and mail items. All models of electronic scales must connect to a COM (RS-232) port.

Note: IPS handles electronic scales with a USB connection, as long as the USB driver simulates a COM port.

## Handheld scanners (barcode readers)

These scanners are used for reading barcodes on labels and documents.

| Hardware | Configuration |
|---|---|
| All models | - Must emulate keyboard entry (keyboard wedge) in wired or wireless mode<br>- Some USB keyboards may not accept these scanners<br>- Support for Code 39 and Code 128 barcodes |

## Portable scanning devices (PSD)

These are portable devices used for performing operational functions. For all supported PSD models, you require the following software:

| Software | Configuration |
|---|---|
| Operating systems | - Windows Embedded Compact 7<br>- Windows Embedded Compact 2013<br>- Windows Embedded 8 (8.1)<br>- Windows Mobile 10 |
| .NET Framework | - .NET Compact Framework 3.5 |

## Windows support for PSD file synchronization

Windows Mobile Device Center (WMDC) is used to transfer files between the PSD and a workstation. The types of files you may need to transfer between a PSD and a workstation are as follows:

- The cab file, to install or upgrade the PSD software
- Reference data files, to update the reference data on the PSD
- Mail item scans to a workstation from the PSD, when operating in batch mode

Note: WMDC may not be compatible with the latest Windows operating systems, or you may need to go through some extra configuration steps in order to be able to use it. Check the Microft recommendations for your operating system for more information.

WMDC is not needed for the following:

- The PSD communications service (PSDCommsService) - used when operating in online mode
- The IPS functionality to import scan files stored on the workstation (after they have been transferred from the PSD )

It is also important to note that the reference data can be updated without WMDC, by using online mode.

# Quick installation overview

IPS must be installed on each workstation in the local network and on the servers at the local and national level. The procedure to follow and the components that you must install on each machine depend on various factors, such as the size of postal organization and whether the machine is a workstation or server.

Important:IPS servers must be installed by someone with experience of installing, configuring and administering Windows and SQL Server. This guide is not intended to provide complete instructions on installing Windows operating systems, but the parameters that must be configured in a specific way for IPS are explained here.

## Before you begin

Before you begin performing the installation steps in the next section, you must:

- Have a good understanding of the different IPS components (see "Components of IPS" on page 7 and "Table of IPS components" on page 14)
- Plan your environment (see "Planning the installation" on page 9)
- Check the "Hardware and software requirements" on page 14

## Installation steps

This table gives a quick overview of the installation steps you need to follow to install IPS. For each task, you can find more information in the corresponding chapter or document.

| Step | Action | See |
|---|---|---|
| 1 | Install the operating system software, including the service packs, on all IPS servers | "Install the Windows operating system" on page 27 |
| 2 | Install SQL Server | "Install SQL Server" on page 28 |
| 3 | Install the IPS database on all database servers | "Install the IPS database" on page 29 |
| 4 | Configure replication (optional) | The *IPS Replication Handbook* |
| 5 | Complete the SQL configuration for the new database servers | "Create the SQL login" on page 32, "Register the server" on page 33 |
| 6 | Schedule the stored procedure for transport accounting (optional) | "Schedule the stored procedure for transport accounting " on page 33 |

| Step | Action | See |
|---|---|---|
| 7 | Install the business server services (optional) | "Install the IPS business server" on page 34 |
| 8 | Install the communications server services (optional) | "Install the IPS communications server" on page 38 |
| 9 | Install the IPS software on all client work-stations | "Install the IPS application" on page 45 |
| 10 | Change the IPS user rights | "Add users and workstations" on page 49 |
| 11 | Install and set up archiving (optional) | "The archive-purge process" on page 50 |
| 12 | Set up hot update (optional) | "Setting up the hot update utility" on page 64 |

# Installing the operating system

When you install Windows on the workstations, begin with the primary domain controller. When the domain controller has been installed, you can install the operating system on the database servers. If the machine has previously been installed with any software, it is recommended that you delete any existing partitions and start with a clean install.

**Important!**

Regardless of the operating system you use, you must install Windows on an NTFS partition!

Note: To perform all installations and initial configurations you must be logged on under a logon ID that belongs to the Windows Administrator user group. It is strongly recommended that you create a new Administrator account specifically for the installation of IPS.

## Naming restrictions

You must only use alphabetic characters in domain and server names. Do not use any kind of special characters ($, &, @, etc.). Non-alphabetic characters, particularly the underscore ( _ ), will cause problems with SQL and create problems installing IPS, particularly the replication portion. Although it is theoretically possible to work around these restrictions, the PTC provides support only when special characters are not used.

## Before you begin

You must first obtain the operating system software for each of the database servers and workstations to be installed for IPS. To see the Windows operating system versions that are compatible with this version of IPS:

- For database servers, see "Database requirements" on page 15
- For workstations, see "Application requirements" on page 19
- For servers running services, such as business and communications servers, see "Service requirements" on page 16

## Install the Windows operating system

### Procedure

1. Remove any previous operating systems that were installed on the machine and delete existing partitions.
2. Follow the instructions in the setup program.
3. Install the latest service pack. To download a service pack, go to the Microsoft web site at www.-microsoft.com/downloads.

Repeat the steps above for each workstation, database server and any other servers that you will be using for IPS.

## Configure your local language

Several tools are available to help you to translate IPS into your local language. However, to be able to store any characters beyond the first 128 characters of the ANSI set, the operating system must run in the local language and the SQL settings must match those of the operating system language.

For more information on translating IPS, see "Software translation" on page 20.

# Installing SQL Server

## Install SQL Server

Before you install the IPS database on the database server, you must first install SQL Server (see www.-microsoft.com for more information).

## Which authentication to use?

IPS supports a choice of authentication methods:

- Windows authentication
- Mixed authentication (Windows authentication *and* SQL Server authentication)

The method you choose depends on your network configuration: if the workstations in your network must pass through a firewall to access the database server, Windows authentication will fail. In this case you must use mixed authentication and follow some additional steps to define authentication after you have installed the SQL Server. For details, see "Create the SQL login" on page 32.

Important:If you are installing IPS with a business server in a workgroup environment, it is *essential* to use mixed authentication (Windows and SQL Server authentication). If you use Windows authentication only, the installation will fail.

# Installing the IPS database servers

This chapter explains how to install IPS on database servers. During the installation, you will specify whether the machine is a standalone server, a local database server, or a national database server. If there are multiple sites that are going to use IPS in your organization, this server must be either a local or national database server and you must configure replication before you begin. For instructions on installing servers with replication, see the PTC publication, *IPS Replication Handbook*.

Please note that the IPS setup program does not install country-specific database features (for example, tables or stored procedures developed specifically for a country). New IPS users whose installation requires country-specific configuration should first install the standard IPS database(s) (following the instructions in this guide) and then add the country-specific database features immediately afterwards, following the specific instructions for their particular country.

When you install IPS on a server, the setup program gives you the option of installing the database, the communication services, and the IPS software. When you install the database on the servers, you do not install the IPS software.

## Before you begin

You must complete the following important tasks before you begin installing IPS:

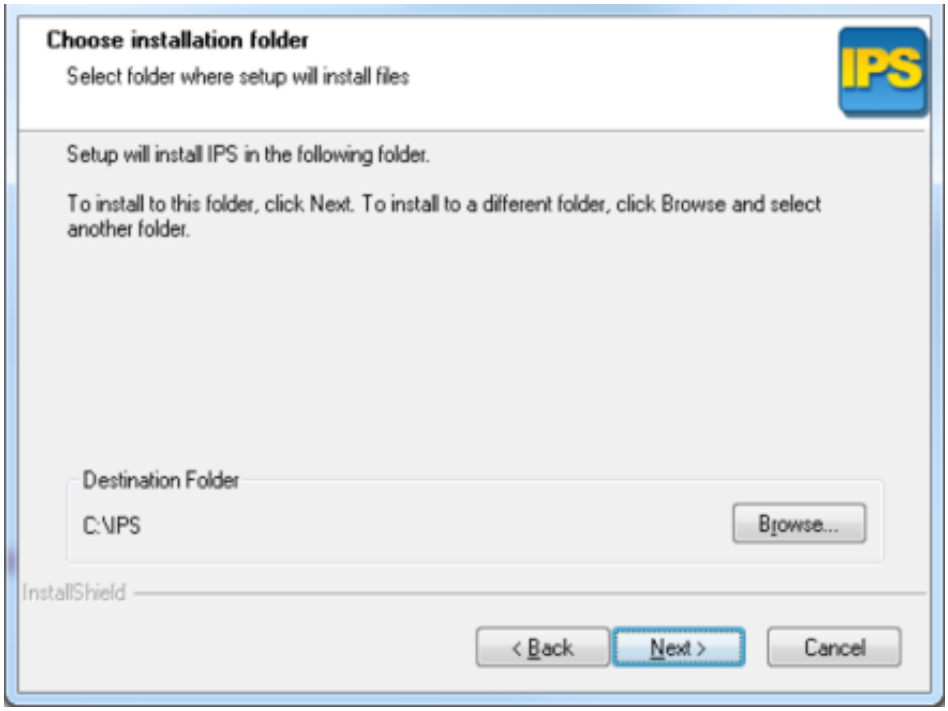
- Ensure the correct operating system and .NET Framework are installed (see "Database requirements" on page 15); you can download the appropriate version of Microsoft .Net Framework Redistributable Package from www.microsoft.com
- Make sure that the SQL service on the database server is started; if the service is not started, installation of IPS will fail

## Install the IPS database

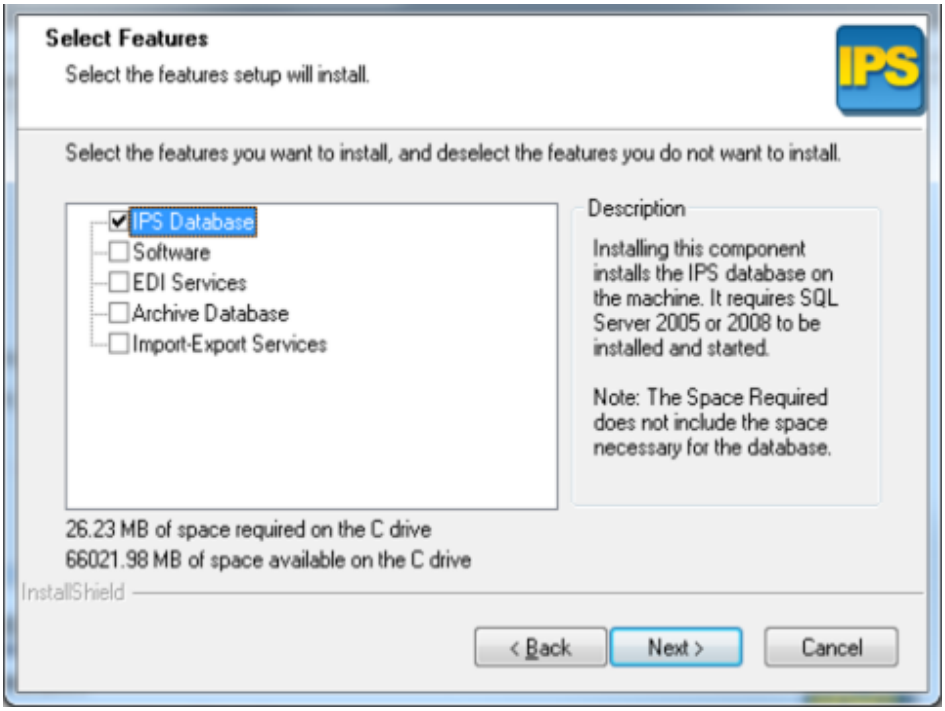
### Procedure

1. Run the IPS setup program (`setup.exe`) and enter your two-letter country code.
2. You will be prompted to select the directory where you want to install the IPS software. You can install IPS on any directory on the server where there is enough space on the disk for the

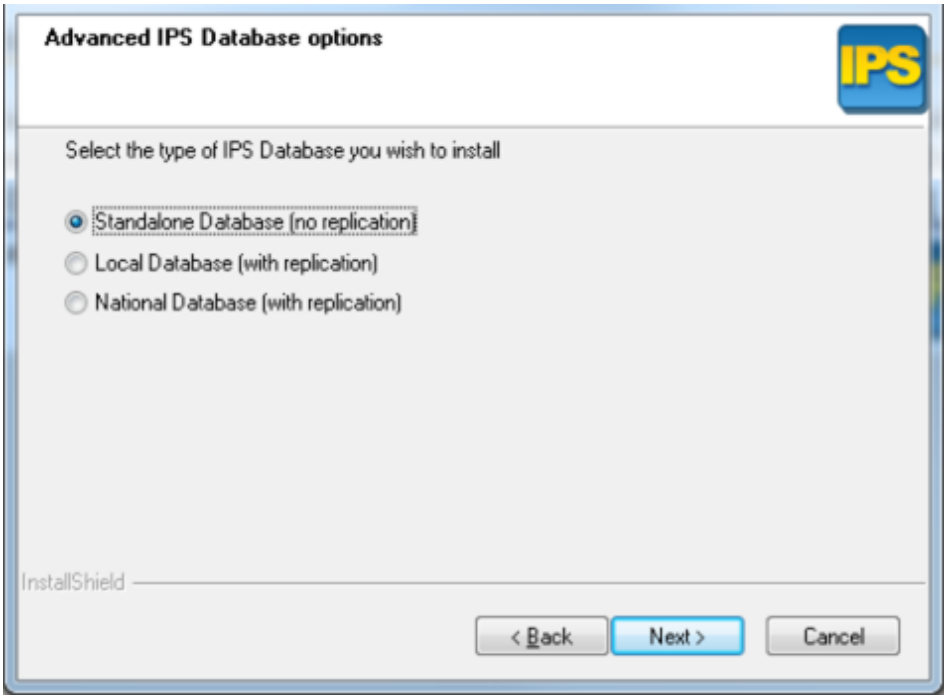
software and the database.



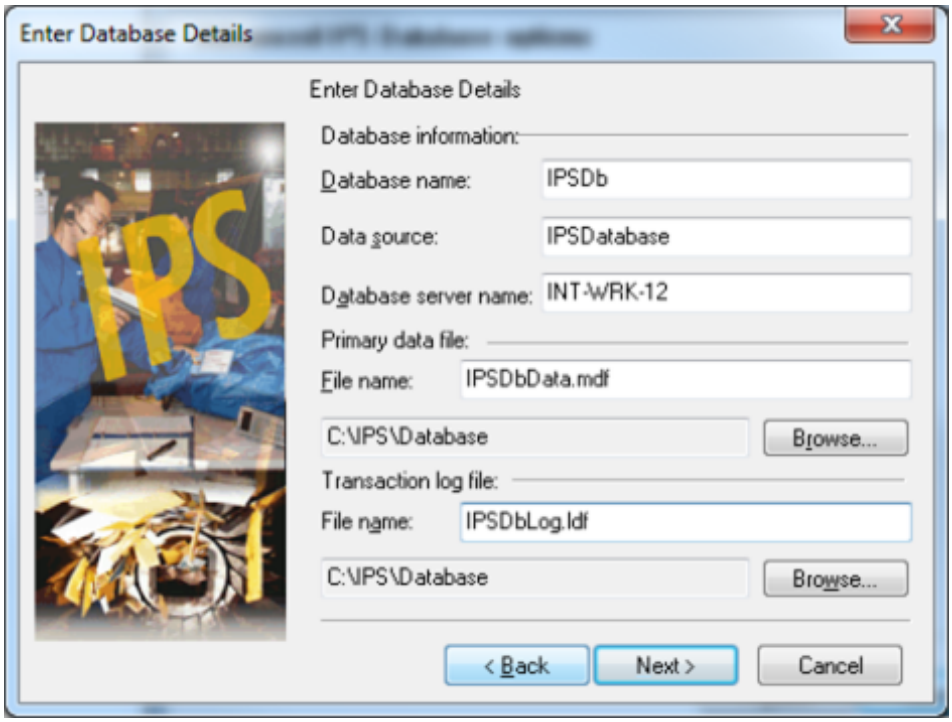

3. Select the **IPS Database** feature.




4. Choose the type of database you wish to install. If you are not using replication, select **Standalone Database**. If you are using replication, choose between **Local Database** and **National Database** (for more information, see the *IPS Replication Handbook*).



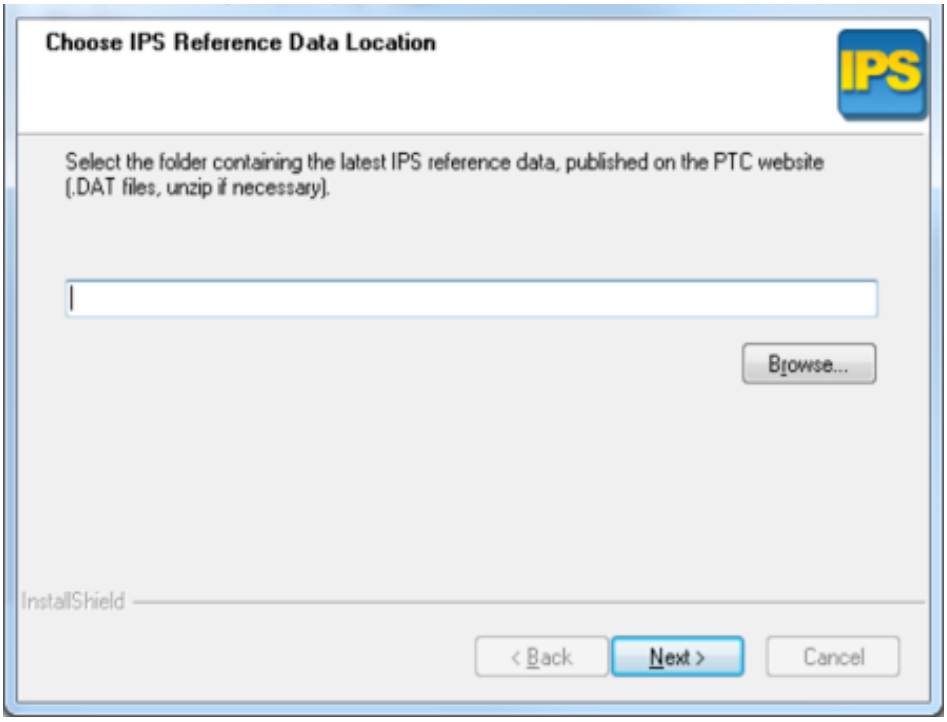

5. Enter the database details. When you create the IPS database, you cannot use blanks in the name.




6. Review your settings and click **Next**.

   IPS starts the database installation.

7. Browse to the folder where the IPS Reference Data will be stored.




8. If the IPS application is not yet installed and registered on your network, you will be prompted to provide the registration key.
9. Click **Finish** to complete database installation.

## Create the SQL login

If you specified Mixed Mode authentication during the SQL Server setup, you must create an SQL login and add it to the **IPSUsers** role in the IPS database. After you have run the IPS setup program and installed the IPS database, complete the procedures below for each login that you create.

Tip: You can create a single SQL login that corresponds to multiple IPS users.

### Procedure

1. In your SQL Server management software, expand the server that hosts the IPS database, by clicking the plus sign next to the server name.
2. Expand the **Security** folder and right-click **Logins**.
3. From the pop-up menu select **New Login**.
4. The **General** tab is active by default. In the **Name** field, type the login name.
5. Click the **SQL Server authentication** button.
6. In the **Password** field, type the password for this login. When you click the **OK** button, a new dialog appears, prompting you to confirm the password.
7. Click the **Database access** tab.
8. In the top section, select the checkbox in the **Permit** column next to the IPS database.

9. In the lower section, select the checkbox next to the role **IPSUsers**.
10. Click the **OK** button. A new dialog opens, prompting you to confirm the password.
11. In the **Confirm new password** field, type the same password again. Click the **OK** button to close the dialog. The new login appears in the list of logins for the database.

## Register the server

Note: If you are using the SQL Server management software on the server where the SQL database is installed, you do not need to complete this step.

When the setup tool has finished installing the database, expand the list of server groups in your SQL Server management software and click once on the server that will be the IPS database server. If there are no problems with your installation, SQL automatically connects to the server and creates a registration.

## Schedule the stored procedure for transport accounting

If you want to use IPS for transport accounting, you must set up a job in SQL Server, scheduled to run a special stored procedure. This stored procedure prepares information for the transport accounting process.

### Procedure

1. In SQL Server, open the SQL Server Agent.
2. Create a new **Job**.
3. In the **Steps** section, select the IPS database and in the **Command** box, type the following script:

   ```
   exec USP_ACC_CREATE_UPDATE_TRANSPORT_LINES 'xx'
   ```

   (where 'xx' is your two-letter country code, for example, 'DK' for Denmark)
4. In the **Schedules** section, define how often you want the procedure to run.

# Installing the business and communications server

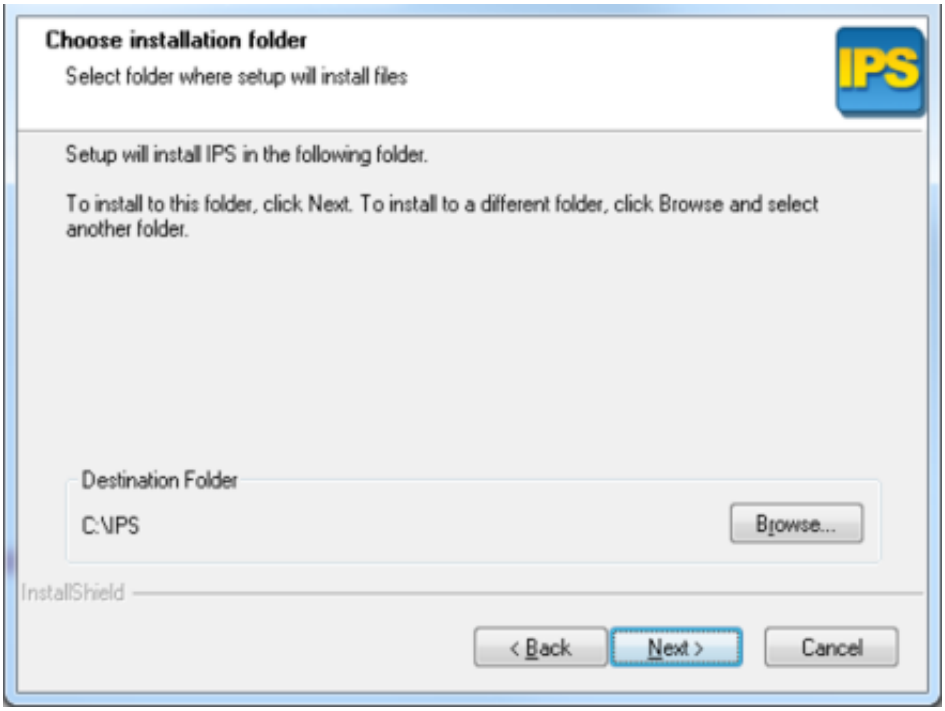
## Install the IPS business server

It is recommended that you install the communications server services (EDI and Import-Export services) on a business server if you are using one. The steps below explain how to install a business server. If you wish to install one or both communications server services on the business server, refer to "Install the IPS communications server" on page 38 for guidance on the extra steps.

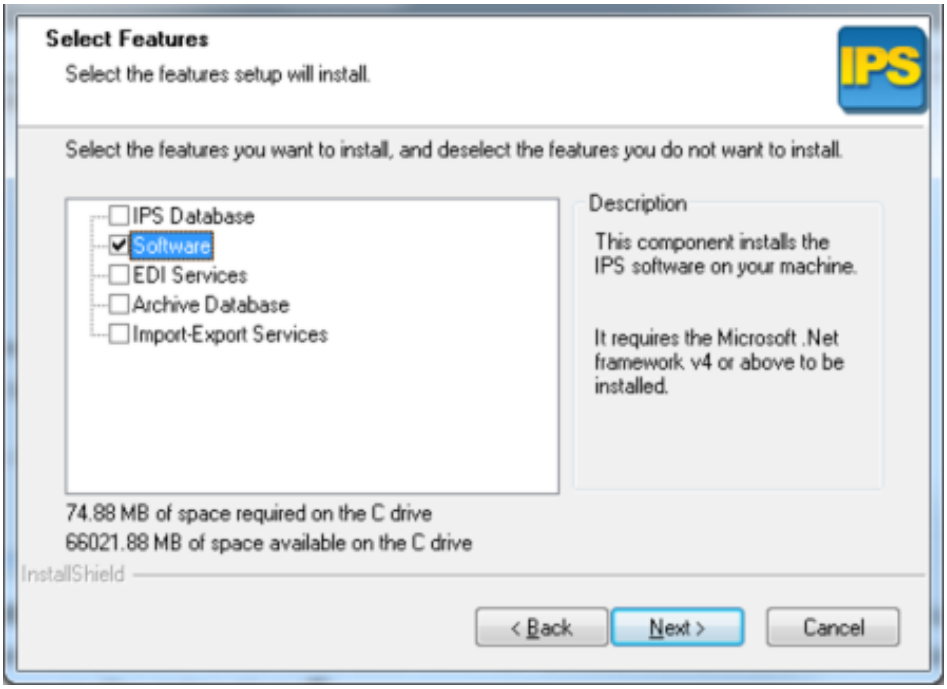
Important:If you have a business server in a workgroup environment, you must specify SQL Server authentication, otherwise the installation will fail.

### Procedure

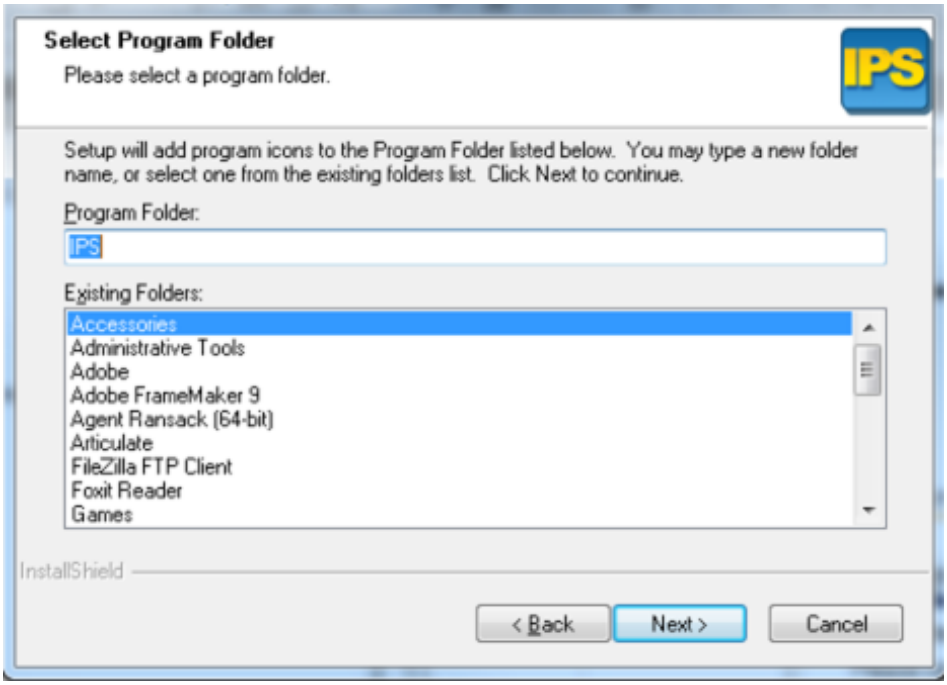
1. Run the IPS setup program (`setup.exe`). You will be prompted first to select the directory where you want to install the IPS software.



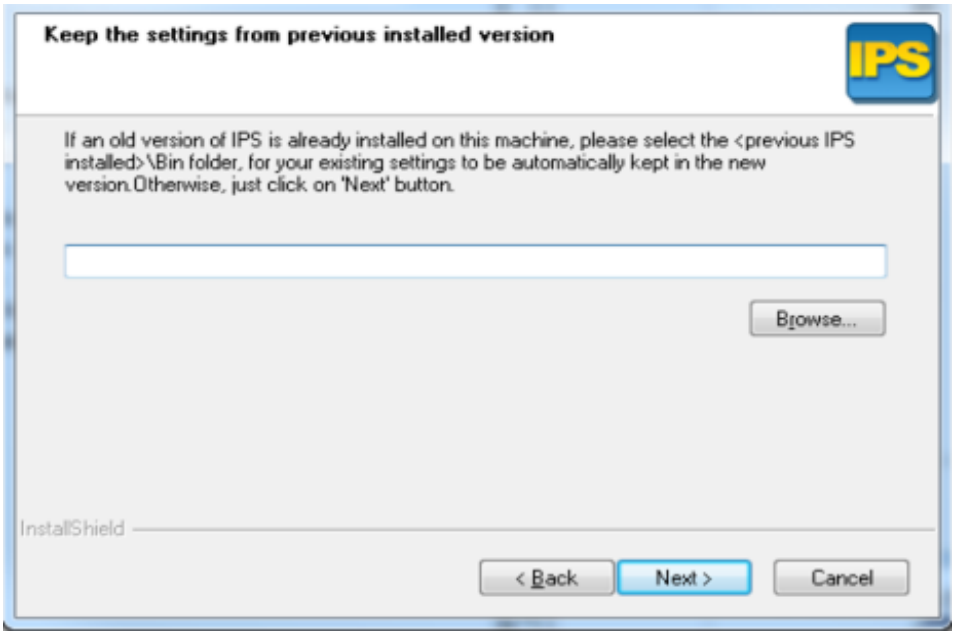
2. In the **Select Features** screen, choose **Software**. If you are also installing EDI Services and/or Import-Export Services, select them here and refer to "Install the IPS communications server" on page 38below for guidance on the extra steps.



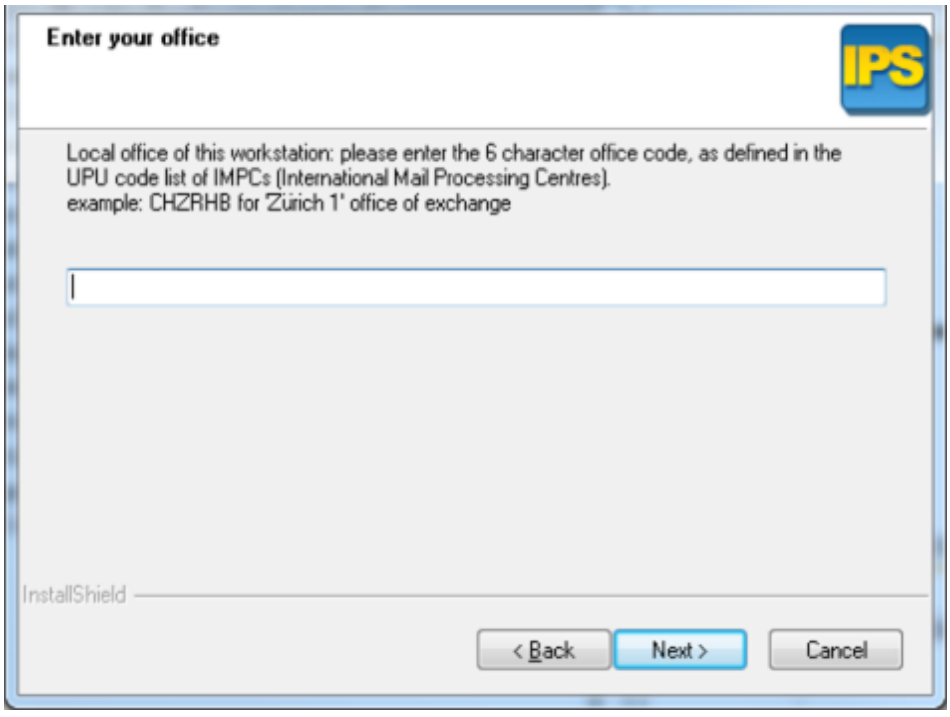

3. In the **Select Program Folder** screen, choose the Windows program folder.



4. Choose whether to keep the settings from a previous version of IPS, if applicable.

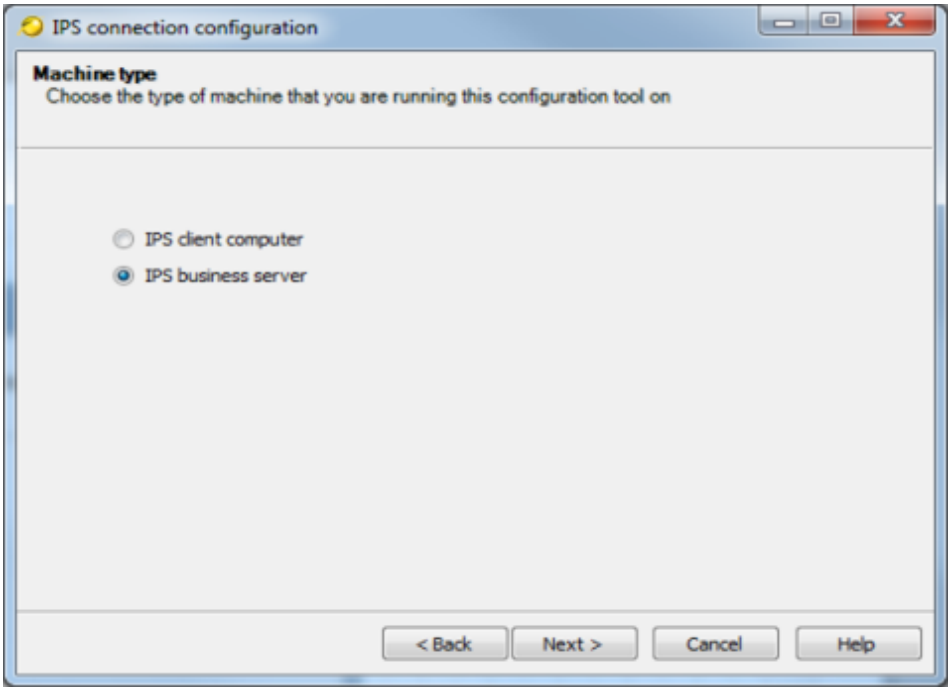



5. Enter your office code.

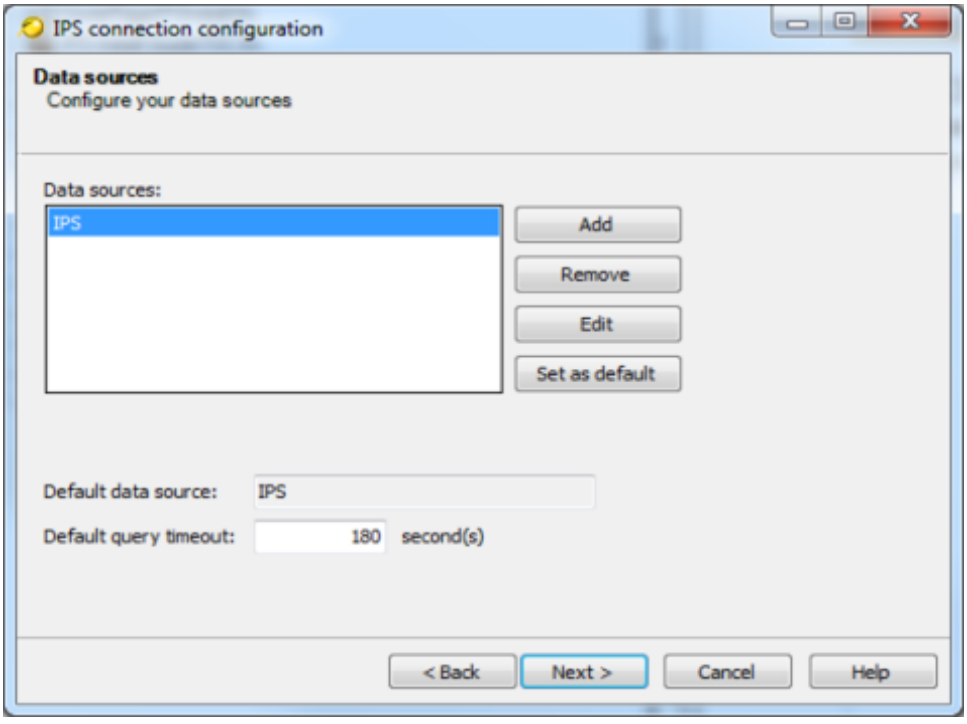



6. Review your settings so installation can begin.

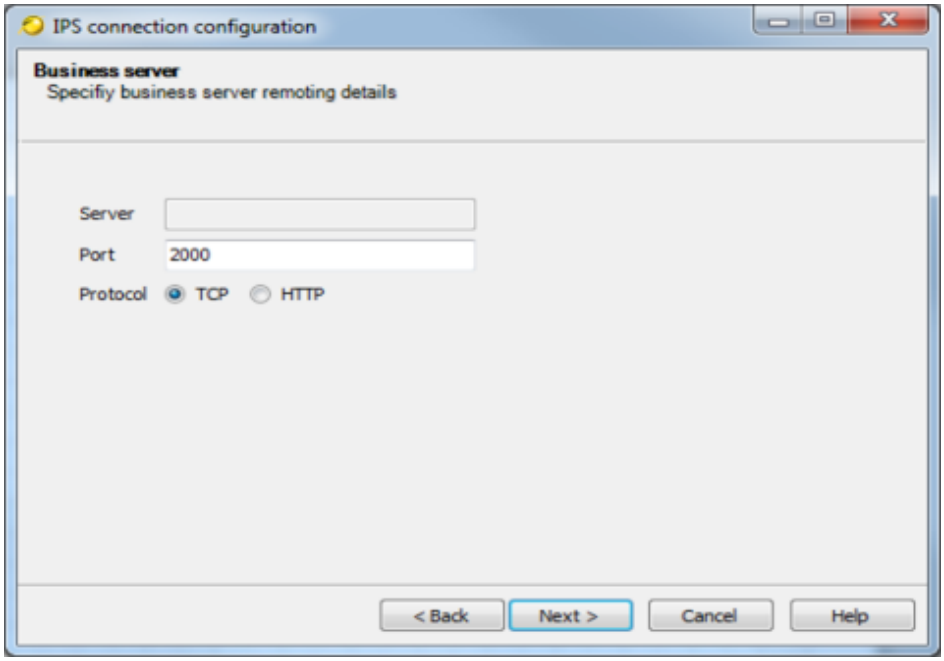
7. When the installation program ends, the tool for configuring the connection starts. It is located in `<IPS>\Bin` and is called `IPS.Util.IPSConnectionConfiguration.exe`. You can run the tool whenever you want to check or modify the connection. The connection configuration wizard appears. In the **Machine type** screen, select **IPS business server**.




8. Choose the data source.



9. In the **Business server** screen, enter the name of the database server, the number of the port on the business server to be used to connect to it, and the protocol. Make a note of this data as you will need to configure every client workstation with the same connection parameters.




10. Click **Finish** to complete business server installation.
11. Configure and start the business server service, by going to **Control Panel > Administrative Tools**, and double-clicking the **Services** icon.
12. The **Services** control dialog opens. Find and double-click the service called **IPS Remoting Server**. The **Properties** dialog opens for the service.
13. In the **General** tab, change the **Startup type** to **Automatic**.
14. In the **Log On** tab, enter the account details of a user who can run the service, and who has access rights to the database server.
15. Click the **OK** button.
16. In the **General** tab, start the service by clicking the **Start** button.

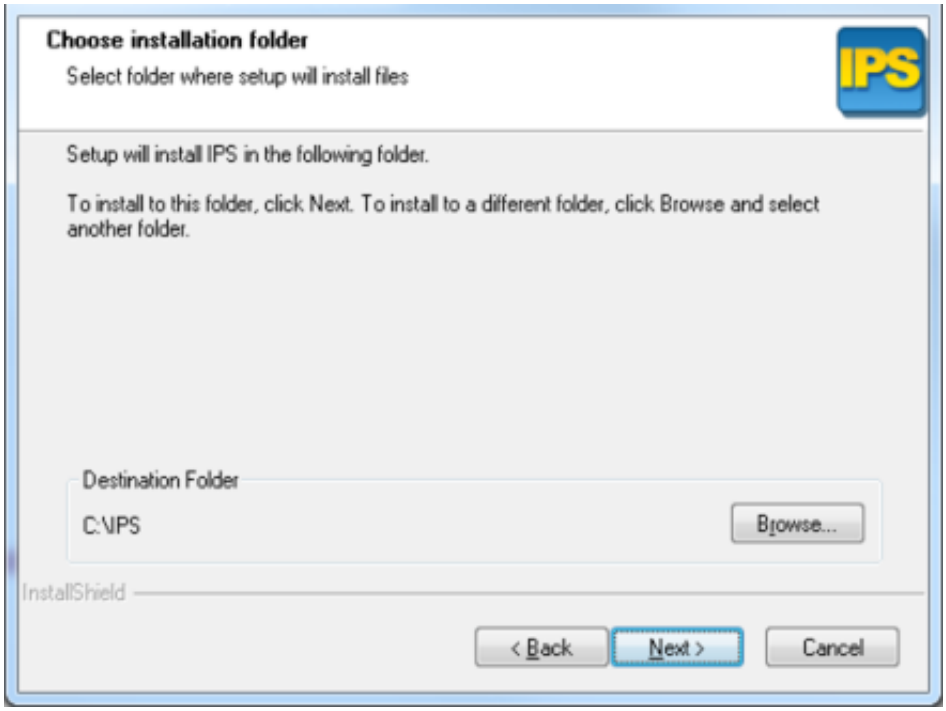
If there is a firewall between the business server and the client workstations, you must configure it to allow connections to be established with the workstations. Go to **Control Panel > Windows Firewall**, and in the Exceptions tab, click the **Add Port** button. Enter the same port number as the one you specified in step 9 above.

## *Install the IPS communications server*

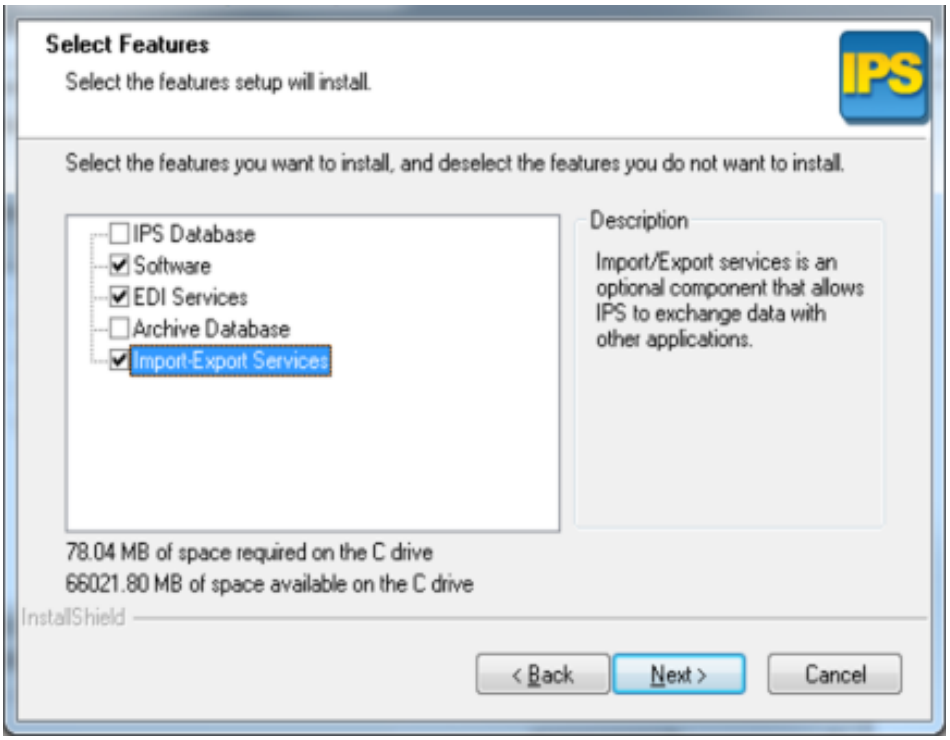
The EDI and Import-Export services should **not** be installed on the database server. It is recommended that you install them on the business server if you are using one. The IPS software must be installed on the machine where these services are installed, in order to configure the scheduling of the services, and for monitoring their activity.

## Procedure

1. Run the IPS setup program (`setup.exe`). You will be prompted first to select the directory where you want to install the IPS software.



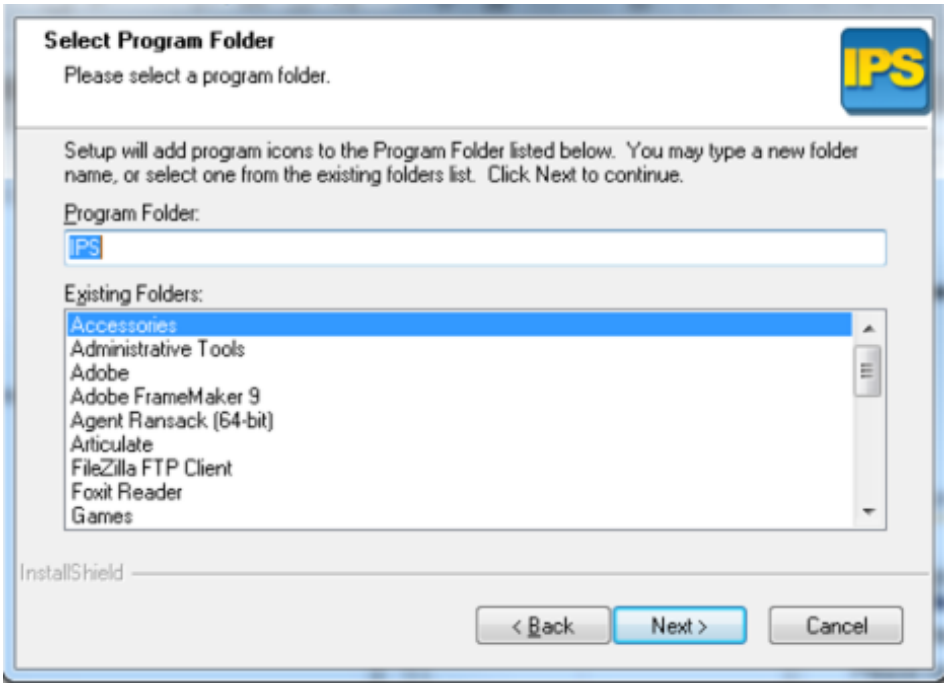

2. In the **Select Features** screen, choose **Software, EDI Services** and/or **Import-Export Services**, select them here. You must choose install the software with the services.



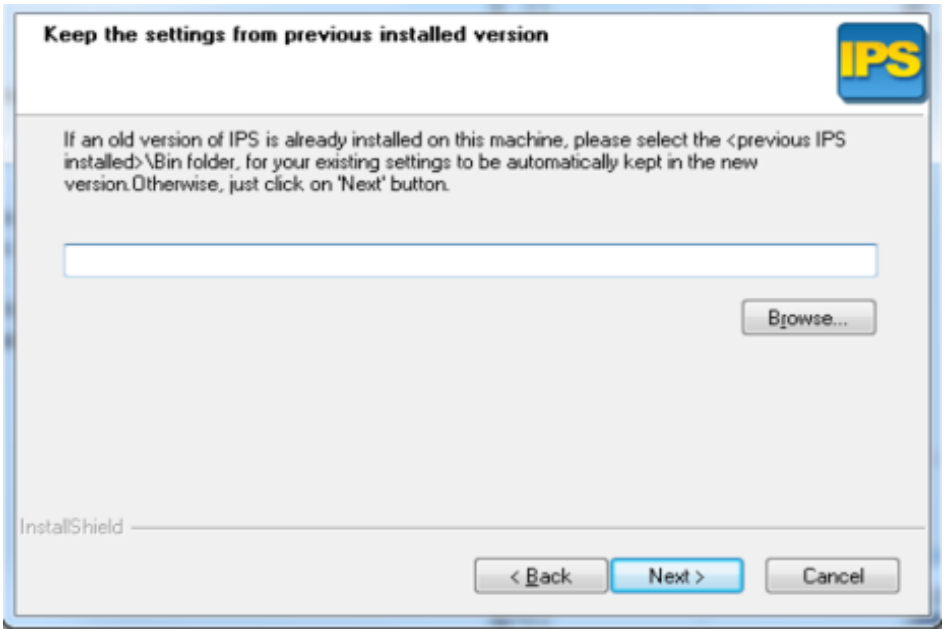

3. When the installation program ends, the tool for configuring the connection starts. It is located in `<IPS>\Bin` and is called `IPS.Ap-`

`plicationLayer.Utilities.IPSConnectionConfiguration.exe`. You can run it whenever you want to check or modify the connection.

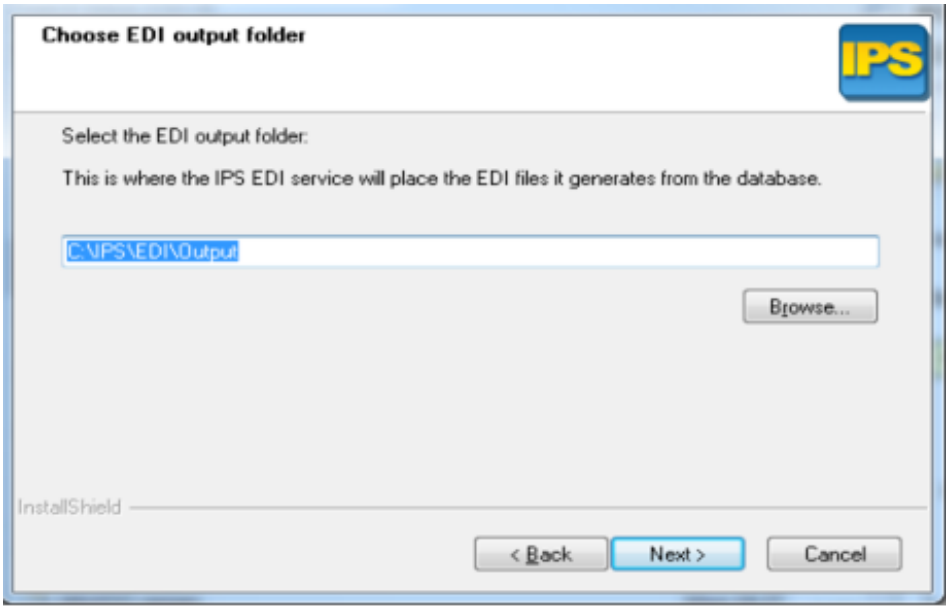
4. In the **Select Program Folder** screen, choose the Windows program folder.

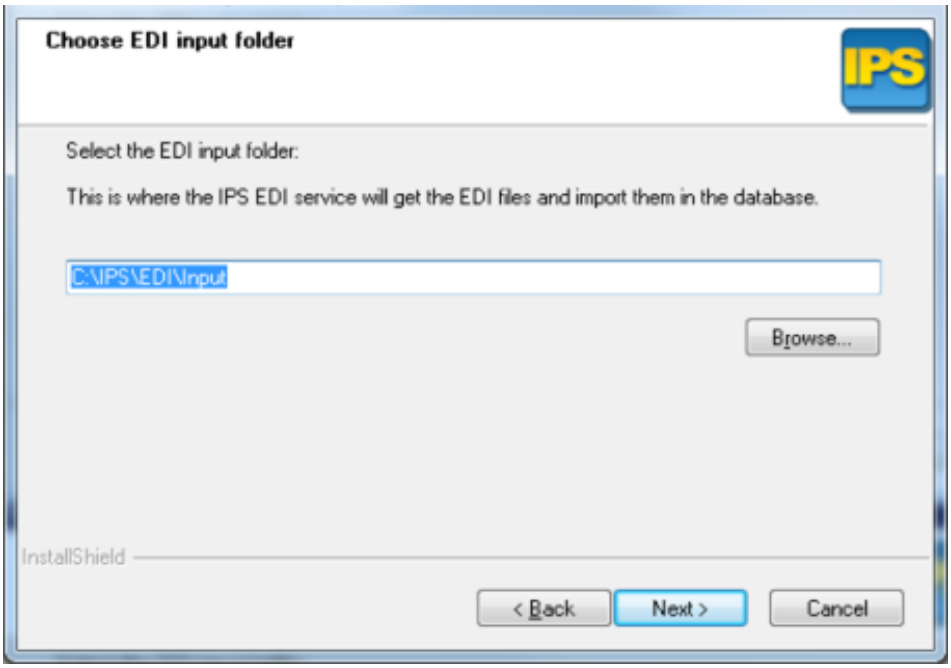



5. Choose whether to keep the settings from a previous version of IPS, if applicable.

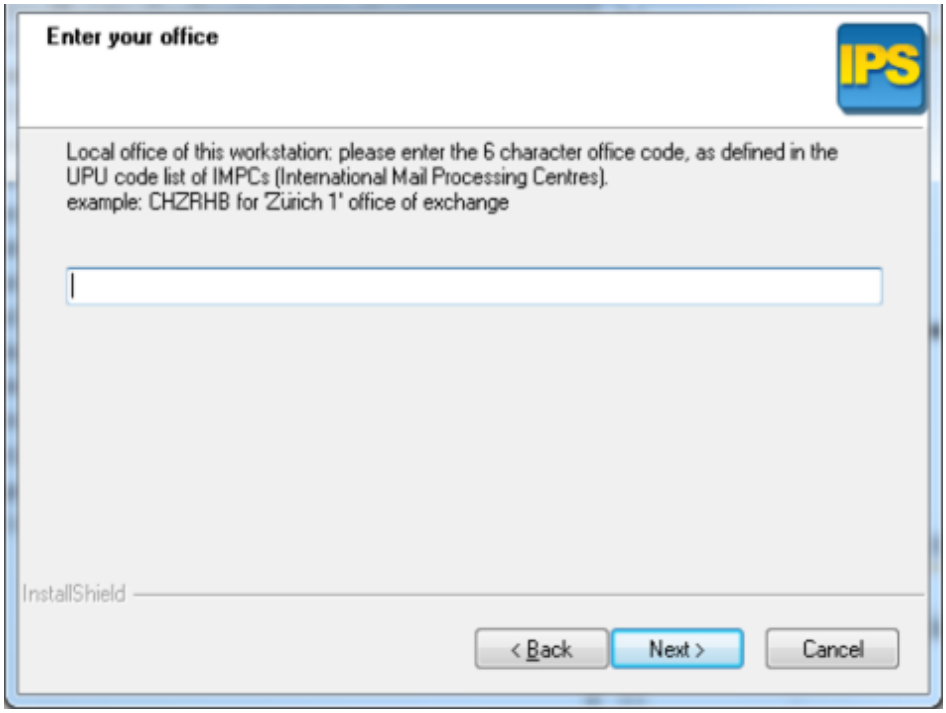


6. If you are installing EDI Services, choose the EDI output and input folders.

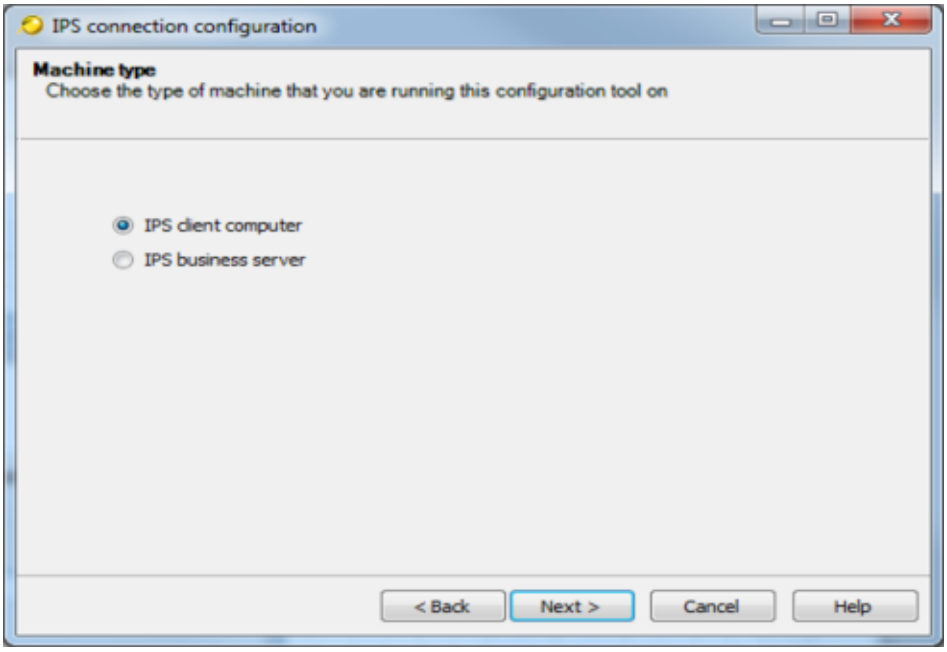


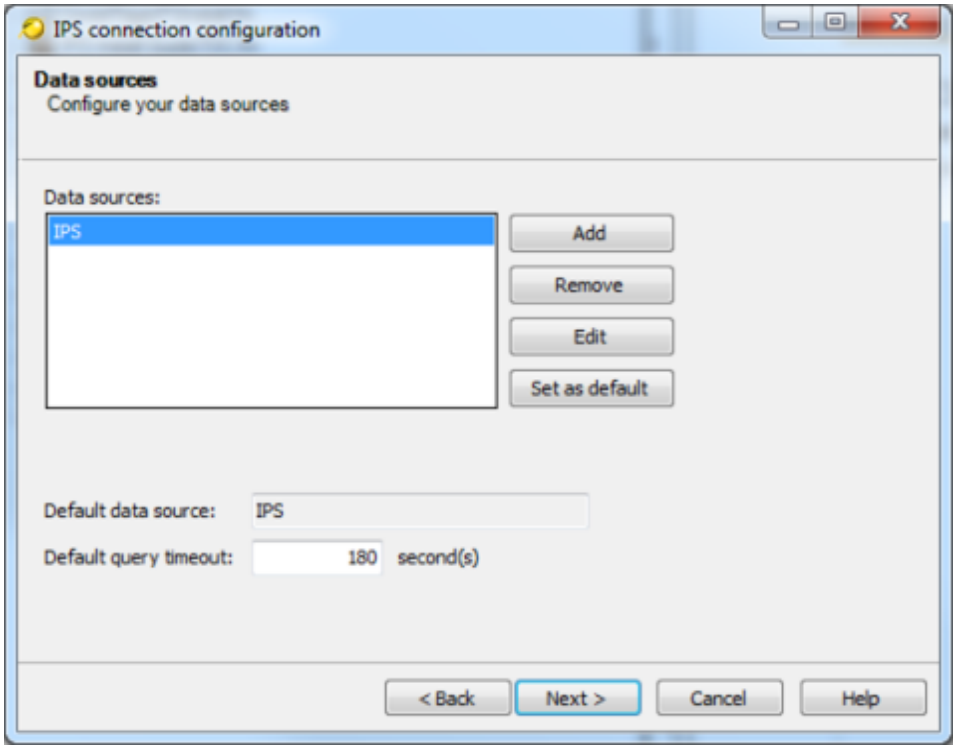
7. Enter your office code.




8. Review your settings so installation can begin.
9. The connection configuration wizard appears. In the **Machine type** screen, select **IPS client computer**.



10. Choose the data source.




11. Configure and start the services, by going to **Control Panel > Administrative Tools**, and double-clicking the **Services** icon.

12. The **Services** control dialog opens. Repeat the following steps for each of the required services (IPS EDI NG Service, IPS Edi Input Process, IPS Edi Input-Output Common Process, IPS Edi Output Process, IPS Interfaces Service):

a. Double-click the required service. The **Properties** dialog opens for the service.

b. In the **General** tab, change the **Startup type** to **Automatic**.

c. In the **Log On** tab, enter the account details of a user who can run the service, and who has access rights to the database server.

d. Click the **OK** button.

e. In the **General** tab, start the service by clicking the **Start** button.

# Installing the workstations

When you install the IPS components on a workstation, you install only the IPS software. On a workstation, you do not have the option of installing the database or replication. The IPS software must be installed on each workstation that will run IPS.

## Adding users

You must complete all installations and initial configurations from a user account that is part of the Windows Administrator user group. A user account called Administrator is the only account defined in this group immediately after the IPS database is created. It is strongly recommended that you create at least one additional account, and use this one instead of Administrator for the installation of IPS. During the installation, you will be asked to supply the name of the user group that was established to hold the administrator accounts. The users that belong to this group are automatically defined as valid IPS users.

Consider defining the IPS users as a Windows user group. It will be easier to add them as users later. The Windows user group must be defined as a global group. Do not worry if all users have not already been defined. It is not necessary for all users to be defined in Windows before IPS is installed. They can be added later.

## Problems connecting to the database

In some instances, the workstations are not able to connect to the database using Windows authentication. This happens, for example, if the workstations must pass through a firewall to connect to the server. If the setup program is unable to connect to the database during installation, the installation stops and prompts you to provide more information. To continue installing IPS, you must supply the SQL login and password that you created when you installed SQL Server. After you have provided this information, the setup resumes and should finish normally.

## Before you begin

You must complete the following important tasks before you begin installing IPS:

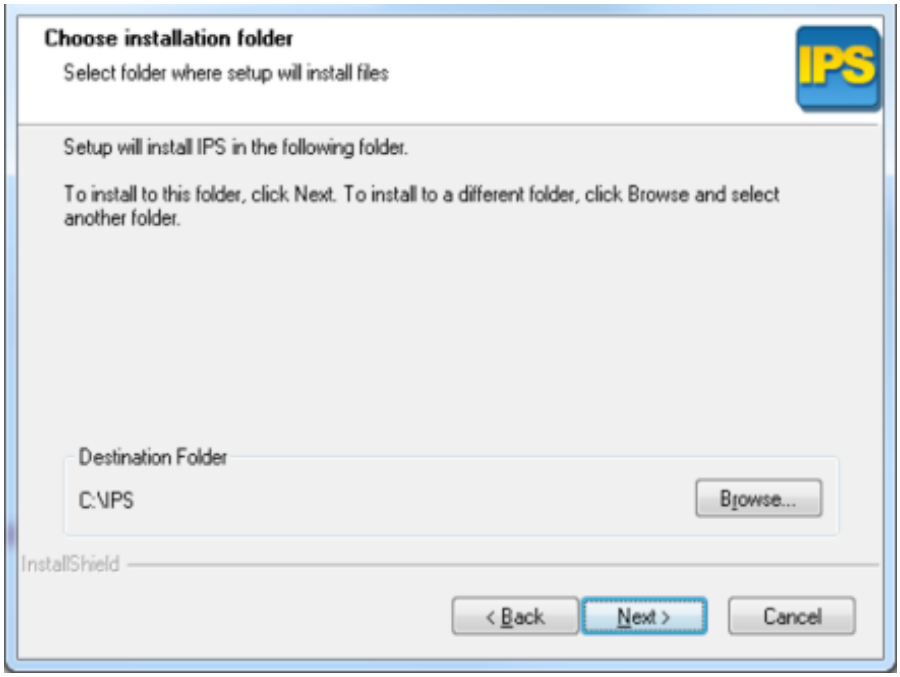
- Install the correct operating system and .NET Framework (see "Application requirements" on page 19); you can download the appropriate version of Microsoft .Net Framework Redistributable Package from www.microsoft.com
- Make sure you have finished installing the database servers and the SQL service on the database server is started; if the service is not started, installation of IPS will fail

## Install the IPS application

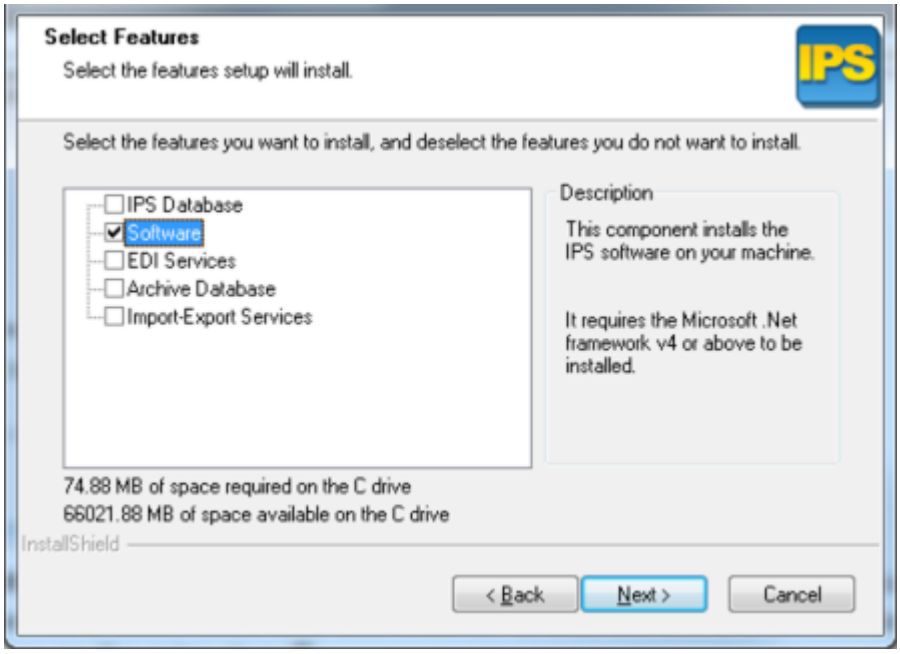
Important:The IPS binary files must be installed on each client workstation. An IPS configuration with binary files shared over a network can cause unpredictable results.

### Procedure

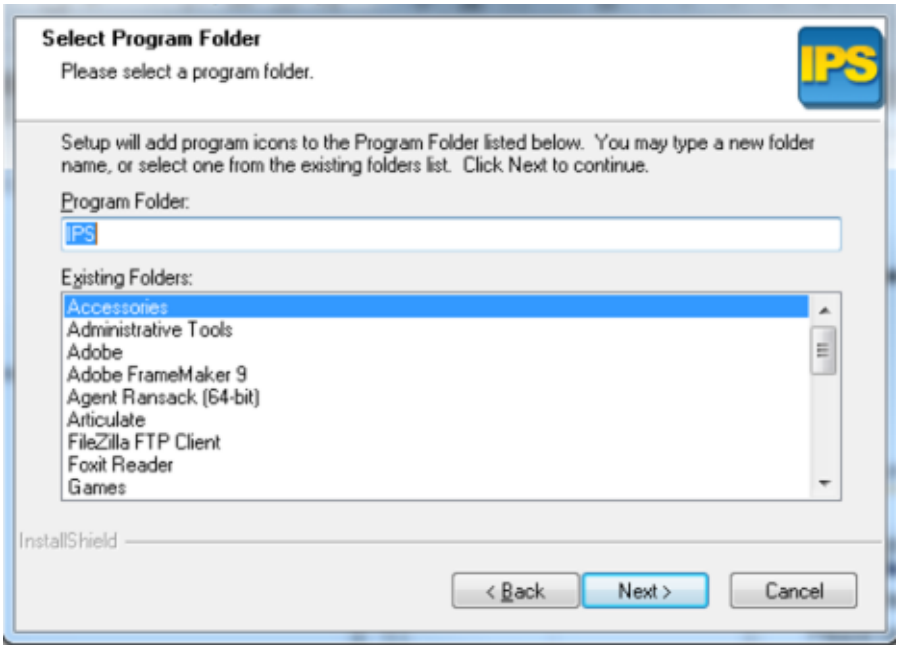
1. Run the IPS setup program (`setup.exe`) and enter your two-letter country code. If you have copied the program to a directory on a server, such as the national server, you can also run it from there. You will be prompted first to select the directory where you want to install the IPS software. You can install IPS on any directory on the server where there is enough space on the disk.



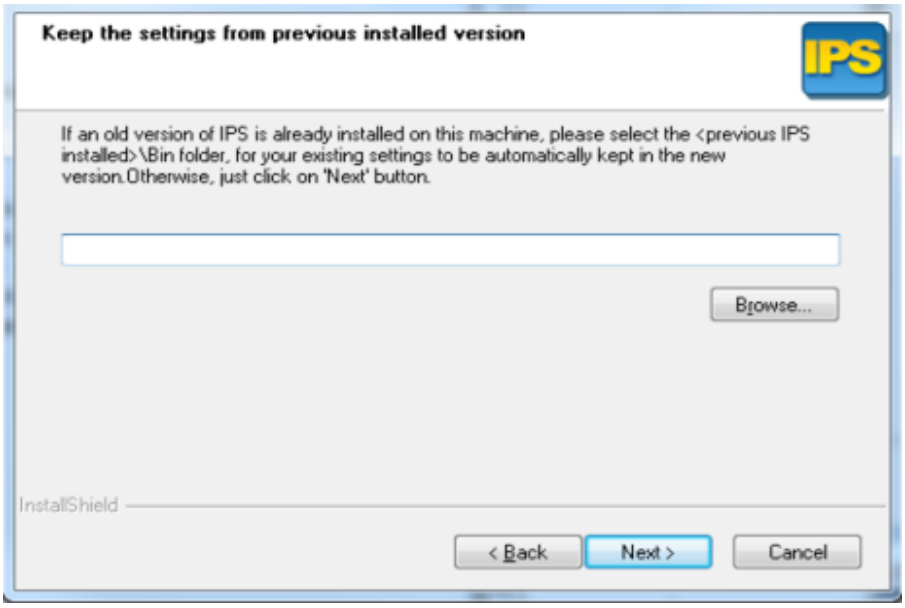

2. In the **Select Features** screen, choose **Software**.



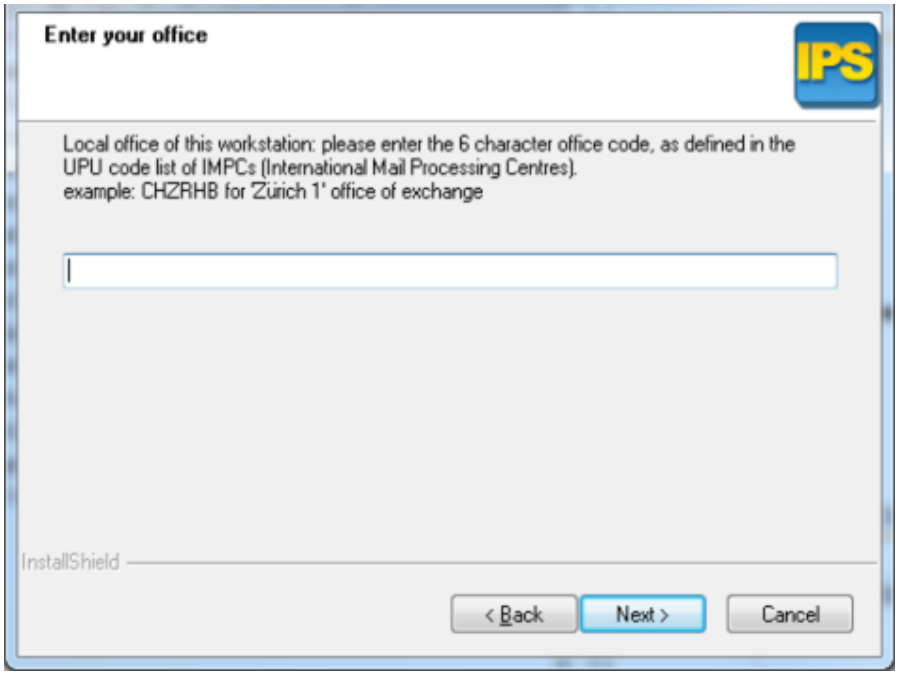
3. In the **Select Program Folder** screen, choose the Windows program folder.



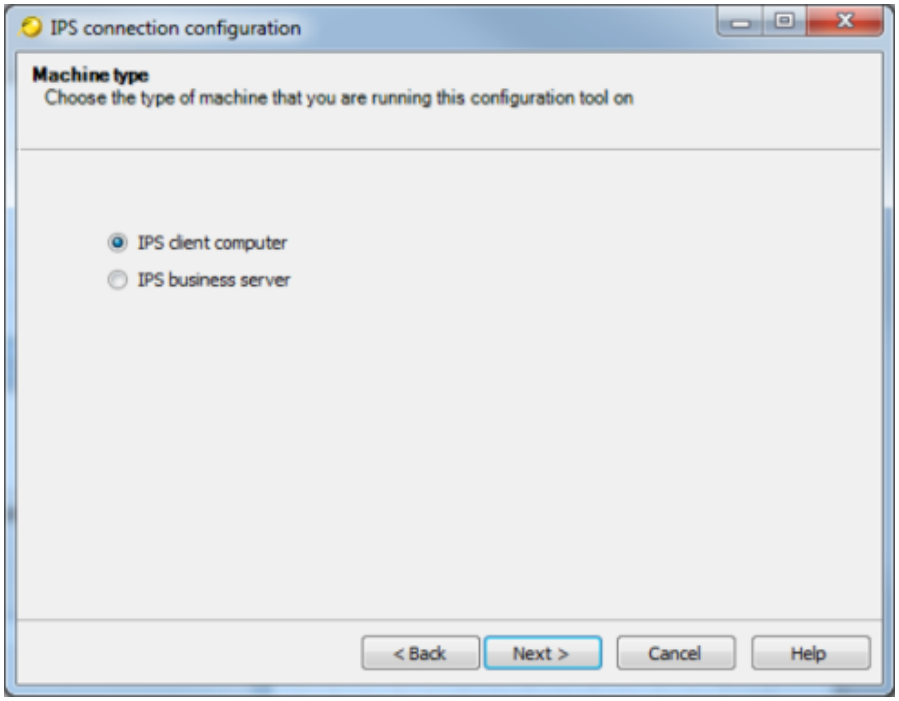

4. Choose whether to keep the settings from a previous version of IPS, if applicable.



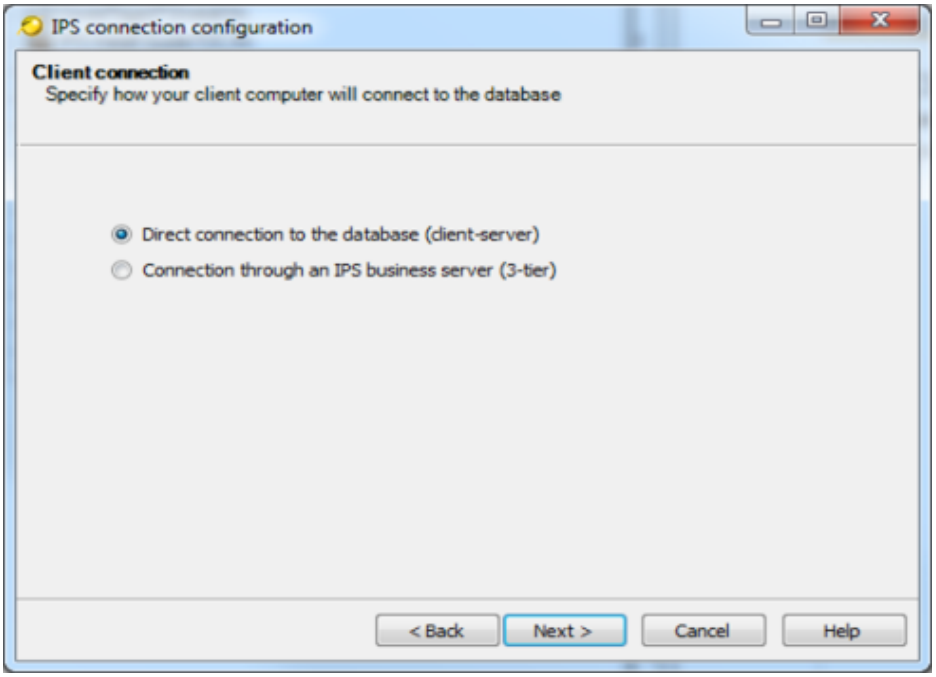
5. Enter your office code.



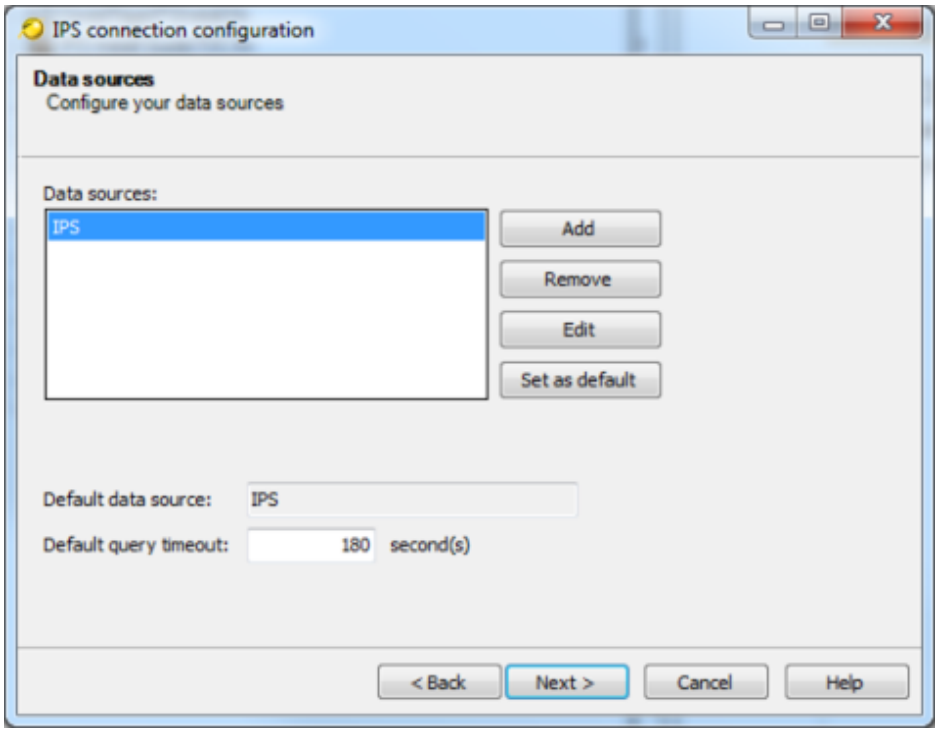

6. Review your settings so installation can begin.
7. The connection configuration wizard appears. Choose **IPS client computer**.




8. Choose if the database connection will be direct or via a business server (only choose the second option if you have installed a business server; see "Install the IPS business server" on page 34).




9. Choose a data source or add a new one.




Note: If an error message appears saying that the setup is unable to connect to the database, the installation stops. Typically this happens when the workstation must go through a firewall to connect to the database. To continue, you must change the authentication method. To complete the installation, on the SQL Server login window enter the SQL login and password that were created when SQL Server was installed. Click the **OK** button to continue running the setup program.

## Add users and workstations

Launch IPS on the server or any workstation where IPS is configured with Windows authentication and open the **Users & workstations** window. In this screen, it is now possible to add users and workstations, even if they are not visible as members of a Windows domain. You must configure each login and workstation. You can open the IPS online help from this screen for more detailed instructions on adding users and workstations.

Note: Even if you use SQL authentication, in which case the SQL connection does not use the Windows login on the workstation, the user rights inside IPS still depend on this Windows login. In this case, you must configure the user's Windows login to have access to IPS functions.

## Troubleshooting

### Missing user or workstation from IPS database

If you experience problems starting IPS on your workstation, your user or workstation could be missing from the IPS database. You can add them either with the **Users & workstations** screen of another instance of IPS, as described in "Add users and workstations" on page 49, or by adding a 1 to the `Register User` and `Register Wrkstn` values in the `[Config]` section of the IPS.ini file:

```
Register User=1
Register Wrkstn=1
```

The current user and/or workstation is added to the IPS database when you next start IPS. At that point the values in the INI file will return to their initial state:

```
Register User=
Register Wrkstn=
```

# The archive-purge process

## Overview

Retaining old data in your production database prevents IPS from operating at its optimum efficiency. To keep performance levels high, you should copy your old data into a secondary database. After the old data has been copied, you can then delete it from the production database. If IPS does not have to process old data, the performance is optimized. By moving old data to a secondary database, the size of the IPS production database remains relatively small and this will improve performance.

The secondary database is called the *archive database*, or the *history database*. In this guide, we will refer to it as the archive database. The archive database has exactly the same structure as the production database: the same tables, relationships between tables, stored procedures, and the same views. However, when it is installed, the archive database is empty of any reference data. The reference data is entered into the archive database the first time the archive process is performed. This data is subsequently updated each time the archive process is performed.

### Archiving vs purging

The *archive process* copies selected data from the production database to the archive database, leaving the data intact on the production database. The *purge process* deletes the data from the production database, after it has been copied to the archive database.

Typically, you should only keep three or four months of operational data in the production database. You should store any operational data that is older than that in the archive database and purge it from your production database. For accounting purposes, all data for the current year must be kept in the production database. Also, you must keep data from any previous years, whose accounts have not been settled, in the production database. You can use IPS to access the archive database and review old data.

## Install the archive database

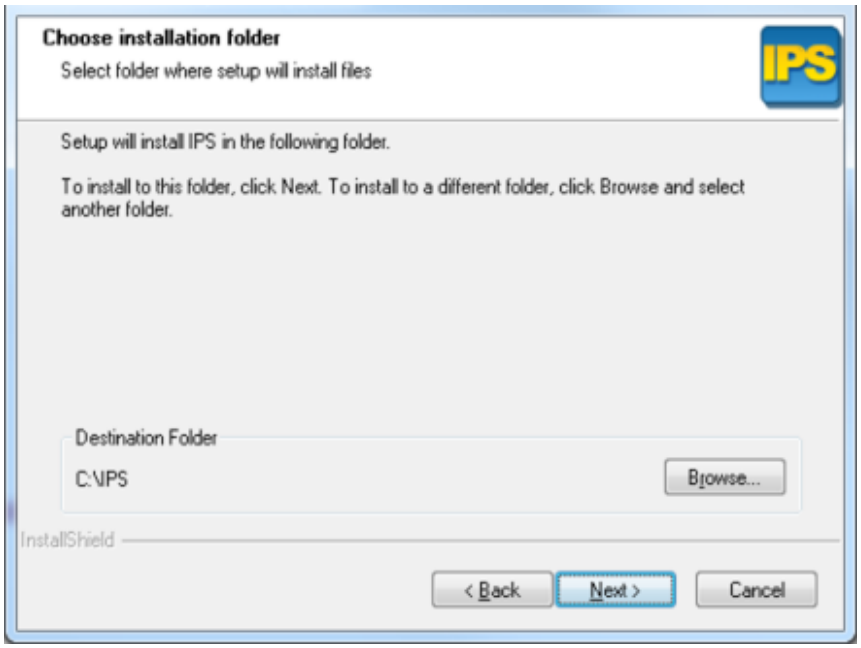
The following steps will install the archive database.

Important:It is strongly recommended that you install the archive database on a different server to the production database server for security reasons, as well as for the performance improvement described above. So if the server containing the production database gets damaged, you will still be able to recover your archived data.

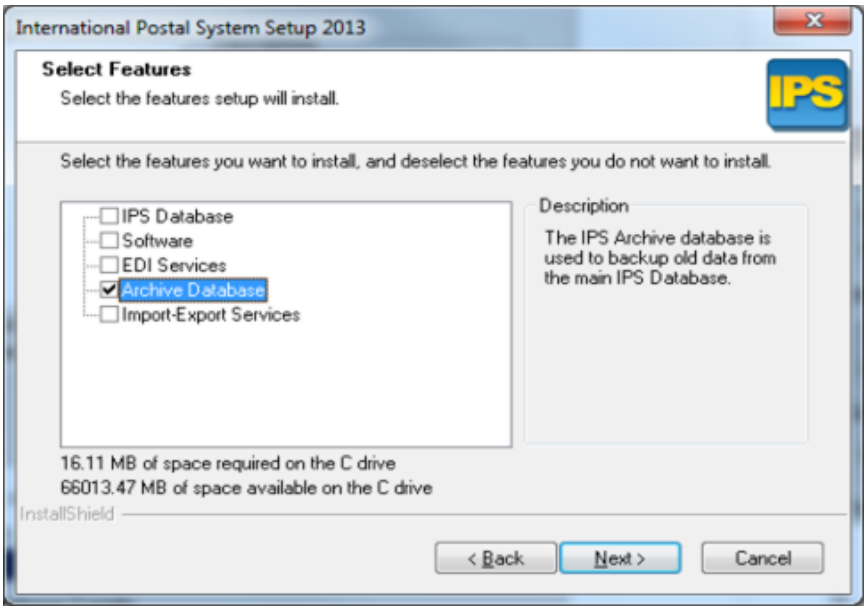
### Procedure

1. Run the IPS `setup.exe` program.
2. In the **Welcome** screen click **Next**.

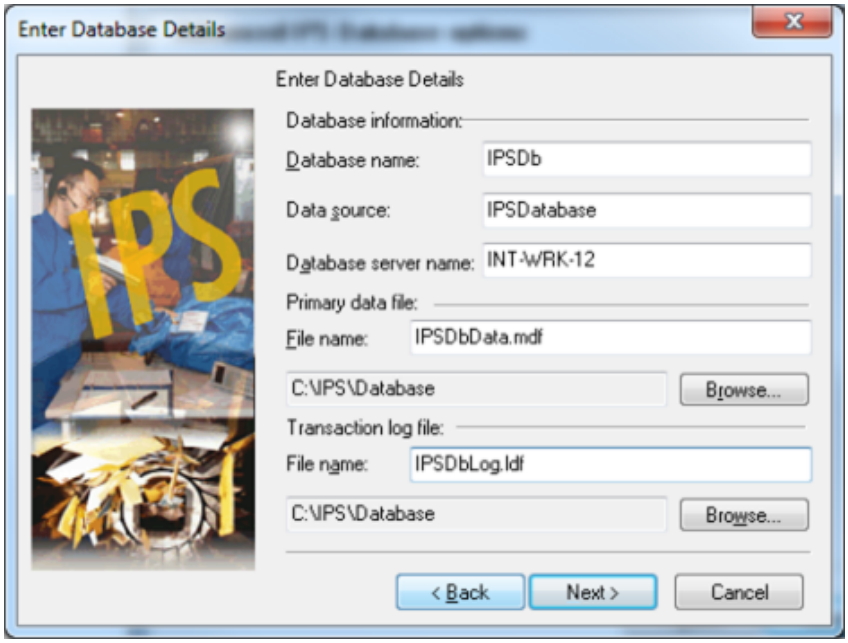
3. Enter your two-letter country code and click **Next**.
4. In the **Choose installation folder**, accept the default or enter a new folder name.



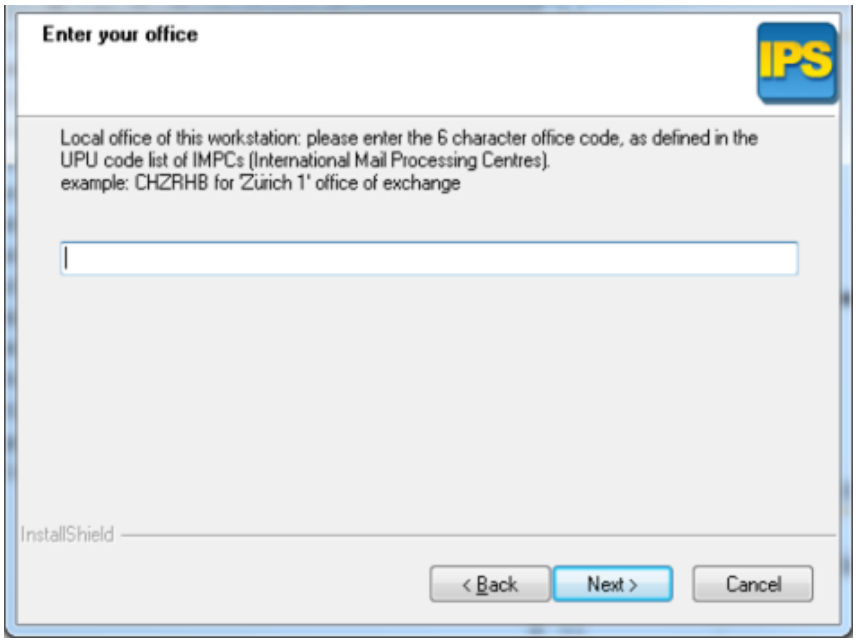

5. In the **Select Features** screen, select only the **Archive Database** option, and click **Next**.



6. In the **Enter Database Details** screen, enter the data source name, the archive database name and the archive database server name, and click **Next**.




7. In the **Enter your office** screen, enter the six character code for your local office.




8. Click the **Next** button to continue through the screens in the installation wizard, supplying the required information until the installation procedure is completed.

## Procedure to install the Archive and Production databases on the same server

When you install the archive database, you cannot install any other IPS features at the same time. If you want to install the archive and production databases on the same server, you should first install the production database, then exit the setup program, restart it and finally install the archive database. These steps are described in more detail below.

Important:Installing the archive and production databases on the same server is **not recommended**. If both databases are on the same server, there is a risk that all of your data could be lost if there is a computer failure.

1. Install the Production database using the procedure described in "Install the IPS database" on page 29.
2. Run the IPS `setup.exe` program again.
3. From the **Welcome** screen, select the **Modify** option. From the **Select Features** window, select just the **Archive Database** feature and click the **Next** button.
4. Click the **Next** button to continue through the screens in the installation wizard, supplying the required information for configuring the connection to the archive database server.

## Assign access rights

When the IPS installation is completed, you should assign access rights to certain IPS users, so that they can connect to the archive database to review old data.

In addition, if you are using SQL authentication (not recommended), you need to assign access rights to the corresponding SQL logins, using the following procedure.

### Procedure

1. Run the SQL Server.
2. Open the user role **IPSUsers**.
3. To grant users access to the archive, associate the corresponding SQL Server logins to the **IPSUsers** role.

Note: If the archive database and the production database are on the same server, then the SQL Logins already exist. If the archive database and the production database are on different servers, you must create the SQL Logins before you can associate rights to any IPS users. (See "Create the SQL login" on page 32.)

Important:If the archive database server is not the same as the IPS production server, you must set up one SQL Server user with administrative rights in both databases. This user will then be able to run the archive-purge process.

If you install the databases on separate servers, we recommend having both servers under the same domain. If not, the domains must be trusted for the above procedure to work.

Refer to the *IPS Replication Handbook* for instructions on defining trust relationships.

## Set up the archive process

You can set up stored procedure USP_ARCH_PROCESS in SQL Server to automatically purge or archive your database regularly without intervention. You must have defined at least one user with full access to both the IPS production database and the archive database. It is best to run the

archive/purge process on a small date range or pass parameter @NO_ROWS_DEL with a small value so the database does not get blocked and unable to process IPS user requests.

From IPS 2017, there is a new stored procedure which allows you to force the purge of data from the IPS database between specific dates, even if it is referenced by other data (this is not a replacement for USP_ARCH_PROCESS and should only be used in the specific case described). The syntax is as follows:

```
USP_ARCH_PURGE_DATA_BY_DATE, @DATE_FROM, @DATE_TO, @NO_ROWS_DEL
```

Important:The job must only be run when users are not accessing IPS.

## Stored procedure parameters

| Param No. | Name | Description |
|---|---|---|
| 1 | @SERVER_NAME | The name of the archive server. |
| 2 | @DATABASE_NAME | The name of the archive database on the archive server |
| 3 | @DATE_FROM | The date, starting with which you want to archive/purge items, in yyyy-MM-dd format. |
| 4 | @DATE_TO | The date, up until which you want to archive/purge data, in yyyy-MM-dd format. |
| 5 | @OPERATIONAL | Specifies whether to archive/purge operational data. Specify 0 if you do not want to archive/purge operational data, or 1 to include it. |
| 6 | @EDI | Specifies whether to archive/purge EDI data. Specify 0 if you do not want to archive/purge EDI data, or 1 to include it. |
| 7 | @ACCOUNTING | Specifies whether to archive accounting data. Specify 0 if you do not want to archive accounting data, or 1 to include it. |
| 8 | @ARCHIVE | Specifies whether to archive data. Specify 0 if you do not want to archive data, or 1 to archive the data. |
| 9 | @PURGE | Specifies whether to purge data. Specify 0 if you do not want to purge data, or 1 to purge the data. |
| 10 | @NO_ROWS_DEL | This parameter specifies how many rows should be deleted per operation. This is to reduce the amount of time the table is blocked during purge. The lower the number of rows, the less time the table will be blocked. Default value is 10,000. Can be adjusted with no impact to the overall res- |

| Param No. | Name | Description |
|---|---|---|
| | | ult. |
| 11 | @OPERATOR_LIST | Use this parameter to pass a list of partners for which to archive/purge data (separated by semi-colon). This parameter can only be used for accounting data and will be ignored if no accounting data is being archived/purged. |
| 12 | @DISABLE_FK | This parameter can no longer be used. |

## Mapping between the old and new archive/purge function

This archive/purge function was implemented in IPS 2013 SP3 as a replacement for the previous function. The table below maps the parameter names of the previous function to the new parameter names.

| Old parameter name | New parameter name | Comments |
|---|---|---|
| @ARC_SRV_NM | @SERVER_NAME | |
| @ARC_DB_NM | @DATABASE_NAME | |
| @FROM_DT | @DATE_FROM | |
| @TO_DT | @DATE_TO | |
| @ARC_OPE_IND | @OPERATIONAL | |
| - | @EDI | New in replacement function |
| @ARC_ACC_IND | @ACCOUNTING | |
| - | @ARCHIVE | New in replacement function |
| @PURGE_IND | @PURGE | New in replacement function |
| - | @NO_ROWS_DEL | New in replacement function |
| - | @OPERATOR_LIST | New in replacement function |
| - | @DISABLE_FK | New in replacement function |
| @ARC_ROUTING_IND | - | Removed from replacement function, because routing information is archived in old function if operational data is archived |

| Old parameter name | New parameter name | Comments |
|---|---|---|
| @ARC_TRA_IND | - | Removed from replacement function, because transport information is archived in old function if operational data is archived |

## Procedure

To set up the stored procedure:

1. Run the SQL Server management software and connect to your IPS production server.

   Note: Make sure that the SQL Server agent is running and will re-start automatically next time SQL Server is restarted.

2. Use the SQL Server Agent window to create a new job.

3. In the command section, call the stored procedure `usp_arch_process` and set the parameters described in the table "The archive-purge process" on page 50, according to your requirements.

Note: You must run these procedures in the IPS main database.

## Example

In order to archive/purge the production database of operational data that is more than 3 months old, limiting the number of rows to 5000, you would run the procedure as follows:

```
declare @dt smalldatetime
set @dt = getdate() -- current date
set @dt = dateadd(month, -3, @dt) -- 3 months ago, for example
declare @dt_to varchar(10)
set @dt_to = convert(varchar(10), @dt, 121)

exec USP_ARCH_PROCESS 'BAK_DEPT_SRV','IPS5Db_Archive','1970-01-01',
 -- from date: take everything
@dt_to, -- 3 months ago
1, -- archive and purge old operational data
0, -- do not archive and do not purge old EDI data
0, -- do not archive and do not purge old accounting data
1, -- perform the archive
1, -- perform the purge
5000, -- delete 5000 rows
0, -- no operators specified for accounting data
1, -- disable foreign keys during purge
```

4. Create a suitable schedule for running the archive job. We recommend scheduling the job once a week or at least once a month. You should set the schedule to run when you are sure that

there aren't any users accessing the database (e.g. late at night, at the weekend).

5. Save the new job.

## With replication: purging old data without archiving

For instructions on how to set up replication between your national and local databases, see the *IPS Replication Handbook*.

If your IPS configuration consists of one national database plus one or more local databases that are inter-connected using replication, you can have an archive database just for your national IPS production database, not for each local database. Replication copies data from the local databases to the national database, so you only need to archive data from a single (national) database.

In this case, in order to keep your local database(s) small, you simply want to remove old data, without copying it to the archive database.

In order to purge old data without archiving it, you must configure the archive-purge job with special values in parameters '<IPS5ArcServerName>' and '<IPS5ArcDbName>'.

Enter the name of the IPS local production server and database instead of the name of an archive server and database.

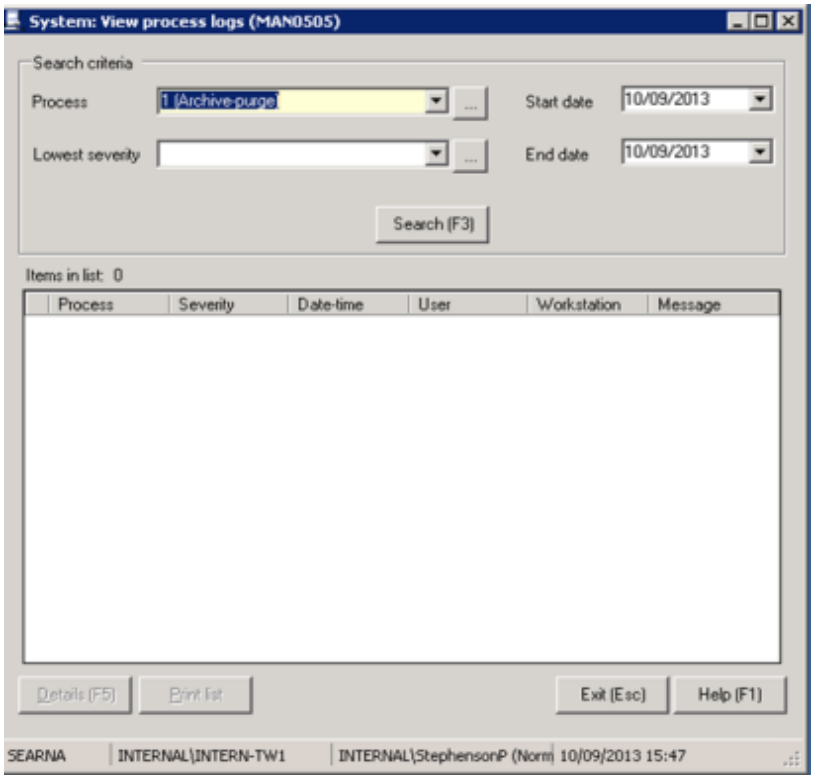
### *Example*

For a local server, IPS_PROD_SRV with the database IPS5Db, specify:

```
exec USP_ARCH_PROCESS 'IPS_PROD_SRV','IPS5Db','1970-01-01','2004-
01-01',1,0,0,0,0
```

## Monitoring

To check that the archive-purge process ran successfully, from any IPS workstation, run the function **Local management > System > View process logs** and choose your search criteria.



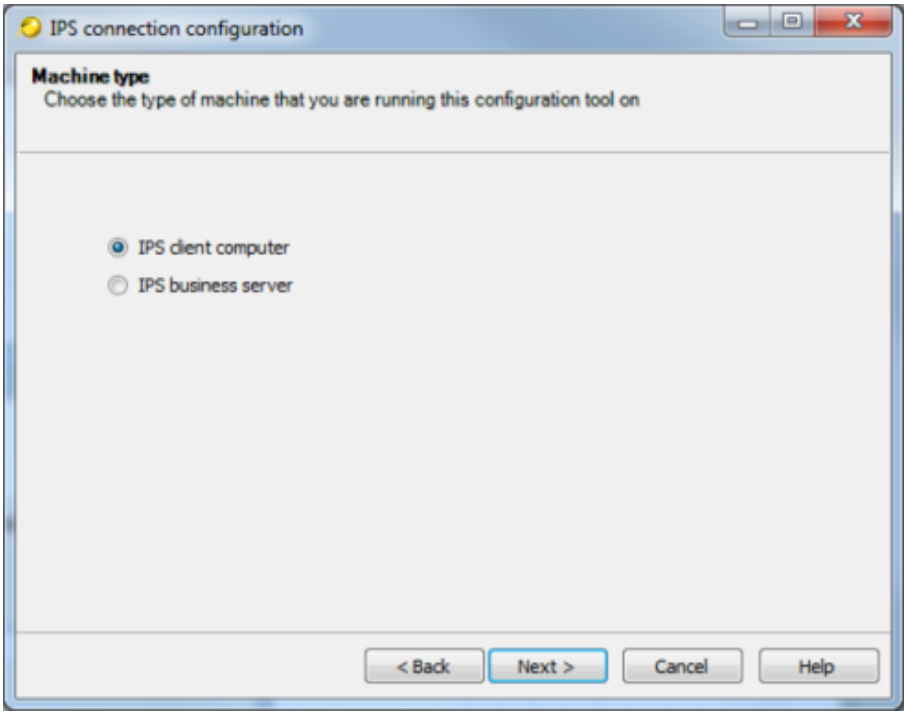

## Configure the IPS workstations to connect to the archive database

To access archived data, you must run the connection configuration wizard on each workstation and create a new data source that connects to the archive database. You only need to configure each workstation once. The data source settings will remain valid after an IPS upgrade.

Important:If you have a business server defined in your set-up, there is no need to configure each workstation separately to access the archive database. You only have to run the procedure below on the business server.

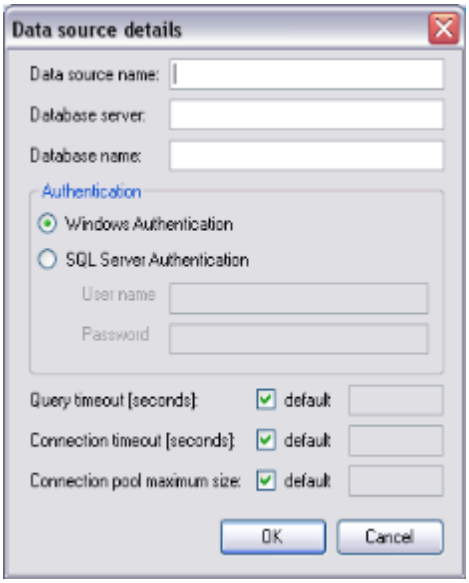
### Procedure

1. Run the connection configuration wizard, `IPS.Util.IPSConnectionConfiguration.exe`, located in the `\Bin` folder under the root IPS installation folder. Click **Next** in the **Welcome** screen.
2. Select **IPS client computer** if you are configuring a workstation, otherwise select **IPS business server**.




3. Click **Next**. If you are configuring a workstation, the **Client connection** window opens. Choose the option **Direct connection to the database (client-server)** and click **Next**.
4. Create a new data source for the archive database by clicking **Add**. A new window opens.

5. Enter the details of the data source, including the archive server name and archive database name.



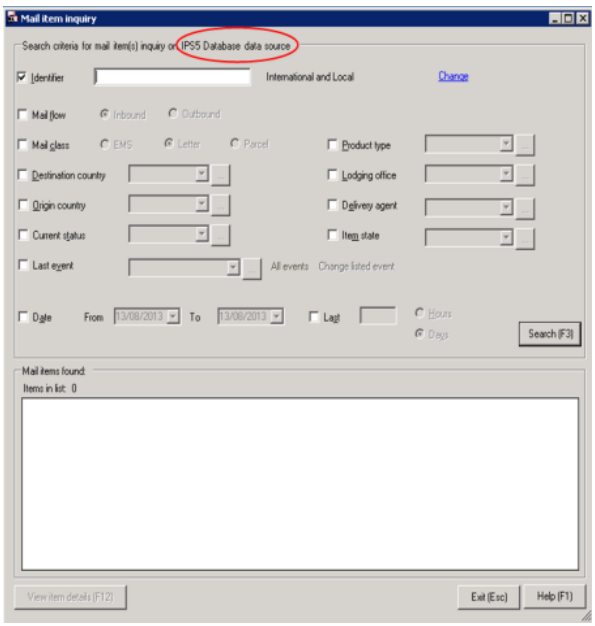

6. Click **OK**. The new data source is displayed in the list.
7. Click **Next** to proceed to the next screen.
8. Click **Finish** to complete the installation.

## Connect to the archive database through IPS

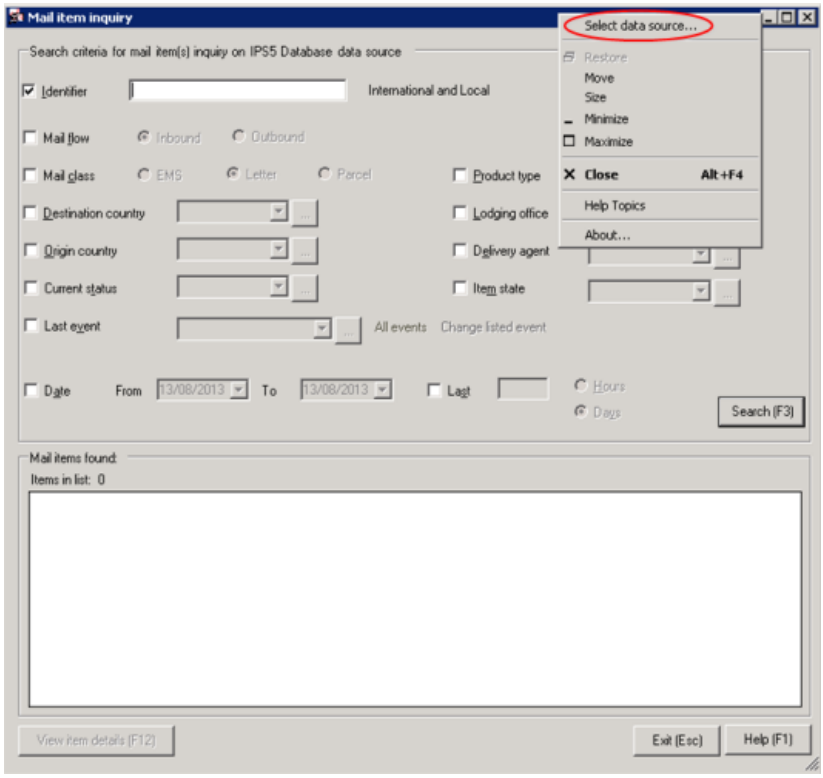
You can connect to the archive database through IPS. To do this, you must open an IPS window that displays the current data source for IPS; for example, the Track and Trace and Accounting Reports actions windows all display the current data source.

### Procedure

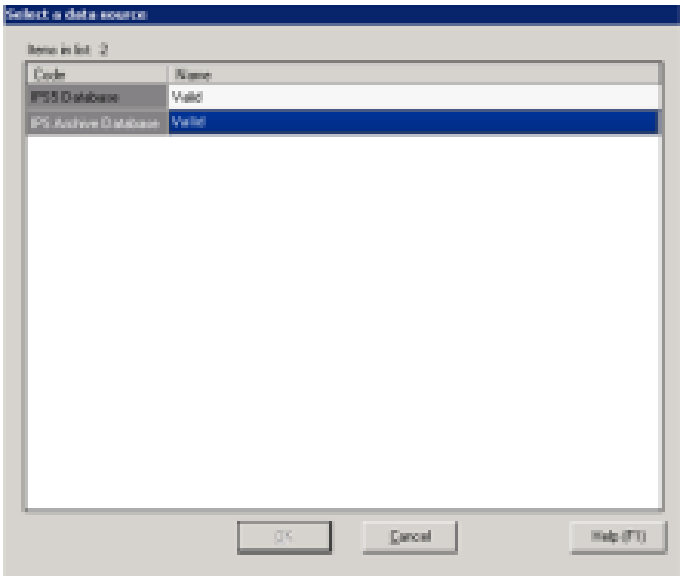
1. Open any IPS window that displays the current data source for IPS.



2. Right-click the cursor on the window header of the open IPS window.
3. Click the **Select data source** option on the drop-down list.

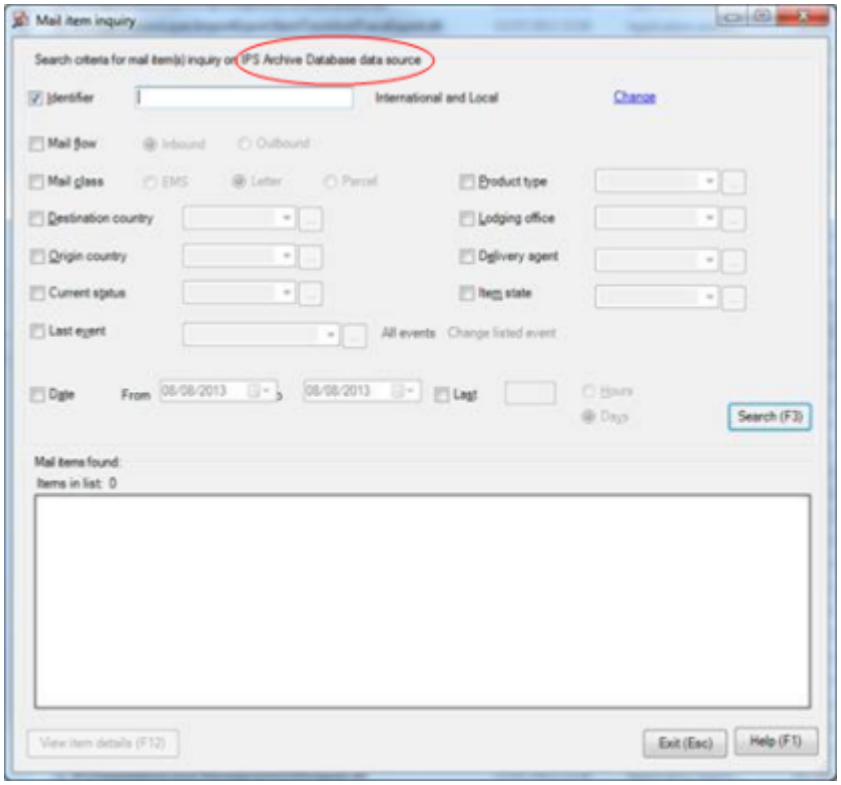



4. In the window that opens, select the data source corresponding to the archive database, **IPS Archive Database**.



5. Click **OK**. You can now view data stored in the archive database.

The open IPS window now displays the selected data source, as shown circled in the screen below. Any tasks or modifications performed in this window will be performed in the archive database. The connection to the archive database is closed when you exit the screen.


Mail item inquiry
Search criteria for mail item(s) inquiry on: IPS Archive Database data source
Identifier
International and Local
Change
Mail flow
Inbound
Outbound
Mail class
EMS
Letter
Parcel
Product type
Destination country
Lodging office
Origin country
Delivery agent
Current status
Item state
Last event
All events
Change listed event
Date
From
08/08/2013
08/08/2013
Last
Hours
Days
Search (F3)
Mail items found
Items in list: 0
View item details (F12)
Exit (Esc)
Help (F1)

# Setting up the hot update utility

## Overview

Hot Update is a feature that gives IPS administrators a convenient way to update multiple client workstations on the same network, by distributing the same set of files to each client workstation. It works as follows:

| Step | Action |
|---|---|
| 1 | The administrator places a set of files (usually a hot fix or service pack) in a shared directory. |
| 2 | The administrator creates an update notification in Hot Update, in the form of a file detailing the update. |
| 3 | The next time IPS is started on each of the client workstations, it checks for an update notification and retrieves the corresponding set of files. |

When you put the latest version of the software in the shared directory on your network, the workstations in your network all need access to this directory. Each time a user launches IPS, the application checks the Hot Update server for updates. If updates are available, they are automatically installed on the workstations. Using the Hot Update function, you can see which workstations in your network have been updated and whether any problems have occurred to prevent the update.

## Set up Hot Update

To set up Hot Update, specify a shared directory on your network where you will put updated .dll files for IPS. Each local site must set up Hot Update separately. Each time you put a new update in the Hot Update directory you launch the update process that creates a file containing information about the updates that have not yet been applied on the workstations. After that, every time a user on your network launches IPS, the application first accesses Hot Update. The software on the workstations is updated automatically.

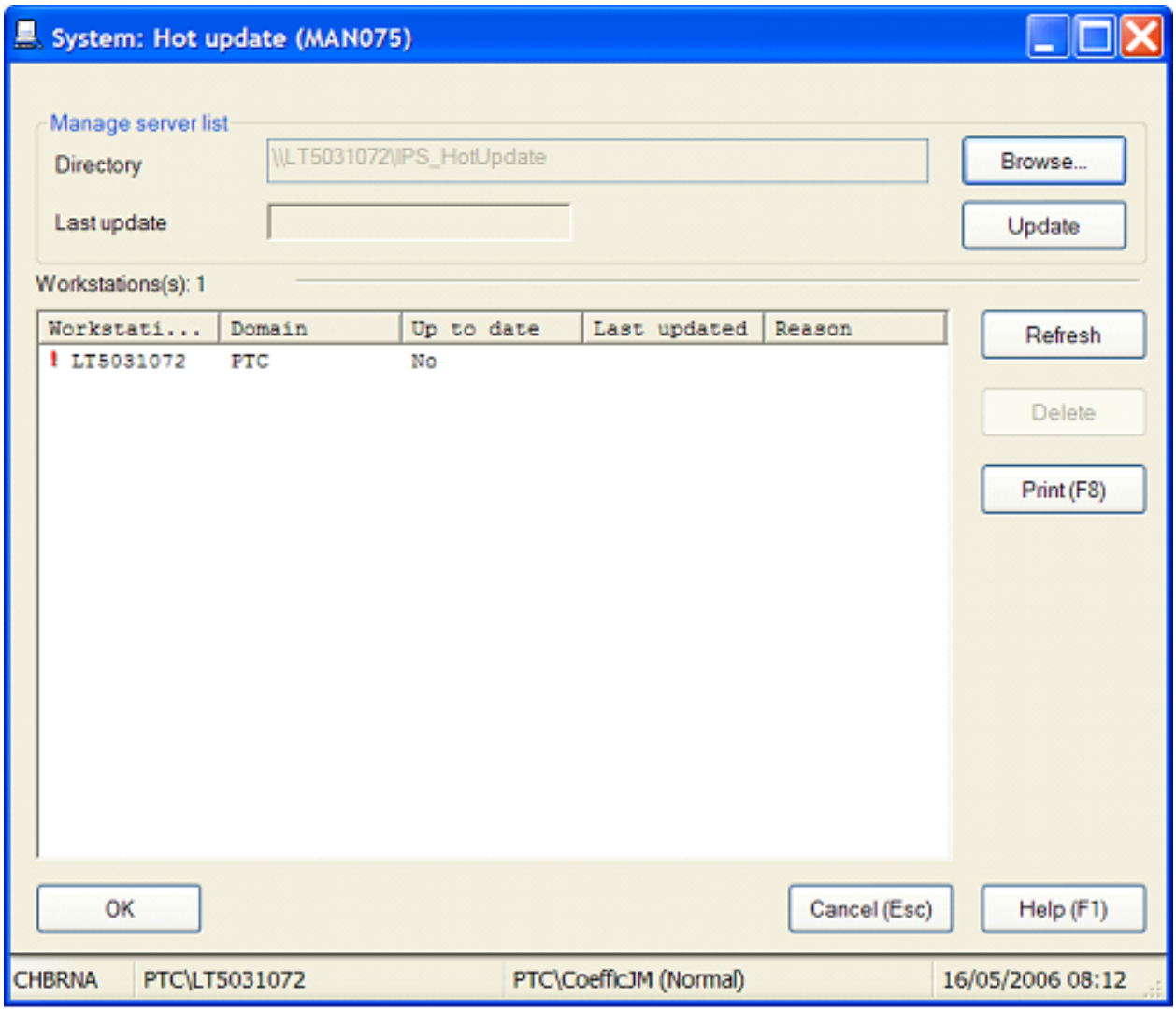
Note: All users must have Read access to the Hot Update shared directory. However, users who will post updates to the Hot Update shared directory must have Full control access to this directory.

## Procedure

1. Create a shared directory on your network to hold the files.
2. Open **Local management** > **System** > **Hot Update**.
3. In the **Directory** field, specify the shared directory that contains the IPS updates. You can type the directory in the format `\\server\directory`, or click the **Browse** button to display a standard Windows dialog box that you can use to locate the directory.
4. Use Windows Explorer to verify the directory you have selected is shared. Right-click the folder name and select **Properties** from the drop-down list.

Note: If you run IPS from the server containing the shared directory, you will get a message stating that you need to enable the directory for sharing so that IPS client workstations may access it.

After the directory has been successfully recognized by IPS, it appears in the **Directory** field in this screen.



## Posting a new update

When a new update for IPS is released, you will post the new update by copying new files to the shared directory.

You can get updates from the PTC in different ways. The table below summarizes the different ways of getting updates and the associated steps for the hot update mechanism:

| PTC updates | What to do for the hot update |
|---|---|
| Hot fix: the PTC sends some .dlls or other IPS files | Copy the .dlls to <shared directory>\Bin<br>There may be other files provided, such as 'Tpl', '.DAT' files. In that case, instructions are given by the PTC to indicate where to copy these files (For example, 'Tpl' files would go under <share directory>\Bin\Tpl) |
| Service pack: a service pack is provided exactly the same way as hot fixes: dlls | Same as above |

After you have posted the new update to your shared directory you must notify your IPS system that a new update is available so that all other workstations will be upgraded.

### Notifying IPS that a new upgrade is available

1. Run the function **Local management > System > Hot update**.
2. Click the **Update** button.
3. On the following screen, click the **Update** button again to close this task. This creates a text file with details of the updates to apply when IPS is next started from the workstations accessing the network location.

Note: The user performing this action must have full access rights in the shared directory.

### Obtaining a new upgrade from a workstation

To obtain the new upgrade, start IPS on each workstation by running IPSCliUpdate.exe. This both updates and launches IPS.

Note: Hot Update does not provide immediate distribution. Instead, it is the IPS software itself that performs the automatic upgrade when the system is started on each workstation as described above. IPS must be started on a workstation for that workstation to be upgraded. If IPS is not started on a workstation, that station will not be upgraded by the hot update mechanism.

## Using Hot Update to distributed translated files to IPS

IPS is supplied in English and French. Your organization can choose to translate the IPS user interface into your local language. To do this, you must have additional .dll files installed on all of your

workstations. For example, if you want to translate IPS into Spanish, you must first translate the necessary .dll files into Spanish and then include the translated files in a language folder called \SP in the \Bin folder of your IPS directory. The additional files you would need to distribute to all of your workstations are:

```
IPS.Acc.Pres.GUI.dll
IPS.Core.Business.dll
IPS.Core.Pres.Common.dll
IPS.Core.Pres.Doc.dll
IPS.Core.Pres.GUI.dll
IPS.Core.Sys.UserString.dll
IPS.Ops.Pres.GS.dll
IPS.Ops.Pres.GUI.dll
IPSGUI.dll
IPSManGUI.dll
IPSOpeGUI.dll
IPSUStrings.dll
```

See the Understanding and performing localization guide for more information.

### Procedure

1. Copy the translated files to your shared directory.
2. Open the **Hot Update** window.
3. Click the **Update** button.
4. Follow the procedure to update the workstations described in "Obtaining a new upgrade from a workstation" on page 66.

The Hot Update feature allows you to distribute additional documents, label printer drivers and anything else that you want to update into the IPS sub-directory.

## Warnings and recommendations

When you originally installed IPS, a shortcut to the program was created on the start menu. With the Hot Update mechanism enabled, we recommend creating another shortcut to the Hot Update mechanism. If you choose to create a new shortcut to the update mechanism, you must name the shortcut **IPSCliUpdate.exe**. Do not name this new shortcut IPS.exe. If you do, the Hot Update mechanism will not work.

We recommend that you create a new shortcut because IPS cannot upgrade itself. The program IPSCliUpdate.exe checks for updates from the shared directory, performs any necessary upgrades, and then launches the main IPS program.

If you do not choose to create the new shortcut, you must locate the IPSCliUpdate.exe program within the IPS\bin folder and open it manually to use the hot update feature.

# Upgrading IPS

This chapter describes the procedure for upgrading your IPS database and software from an earlier version to a later version of IPS.

Important:We strongly recommend you read the whole chapter before beginning your upgrade.

## Introduction

Every IPS upgrade involves two main activities: migrating the database, and updating the software on servers and workstations (including the IPS application, interfaces, services, etc.).

You need to migrate your existing IPS database to be compatible with the new structure and modified data contents in each new version of IPS. You can migrate the database using the Database Migration Tool provided with each new version of IPS, as described in "Overview of the IPS upgrade tools" on page 69.

The database migration affects all of the table structures, contents, as well as the stored procedures, views and triggers. After the Database Migration Tool has migrated the database, it also updates the contents of some reference tables (e.g. functions and event types).

Once the database is migrated successfully, you can update the software. Both procedures are explained in more detail in the following sections.

## Migrating a distributed architecture

If in your organization IPS is deployed with a distributed architecture, i.e. with several databases connected via replication, you must migrate all of the **local databases** to the latest version as well as the national one.

## Overview of the upgrade procedure

You must follow this procedure for a successful upgrade:

1. **Test:** Always perform the database migration on a test server before migrating your production server. For your test environment, select a hardware and software configuration that is the same as, or as close as possible to, your production environment.

   Perform thorough User Acceptance Testing of the new IPS version in your test environment, so that users can validate the new functionality and its impact on the use of IPS within your organization.

Additionally, if you have integrated IPS with third-party software (e.g. your domestic or accounting systems), perform the required integration tests to make sure the interfaces will not be affected by the IPS upgrade.

2. **Test migration logs:** After the test migration, send your test migration log files to the PTC, so that we can examine them in detail and give you feedback. You can send your log files to ptc.support@upu.int.
3. **Upgrade dates:** Once you have received the go-ahead to upgrade from the PTC and planned the upgrade in production, inform the PTC of your upgrade dates, so that if a problem occurs, we can prioritize your case and respond as quickly as possible.
4. **Production migration logs:** After the production migration, send your logs once again for validation to ptc.support@upu.int.
5. **Success:** When the upgrade has completed successfully, inform the PTC using the above email address, so that we can update your records and provide appropriate support for the correct product version in the future.

## Overview of the IPS upgrade tools

In addition to the IPS setup file itself, the IPS setup package includes tools to be used specifically when upgrading IPS.

### IPS Database Migration Tool

The IPS Database Migration Tool is used for upgrading the IPS database to a **later major version** (e.g. IPS 2014 to IPS 2015). The Database Migration Tool, located in the setup directory, makes the necessary changes to the relevant components in the database. It also saves all of your existing data. See "Upgrade the IPS database" on page 71 for more information.

### IPS Service Pack Upgrade Tool

The IPS Service Pack Upgrade Tool is used for upgrading to a **later service pack of the same version** (e.g. IPS 2014 SP1 to IPS 2014 SP2). The Service Pack Upgrade Tool, available from IPS 2014 SP1 onwards, is located in the setup directory.

You do not need to run the Service Pack Upgrade Tool for each individual service pack. The latest tool can apply all service packs in one go. So, for example, to upgrade from IPS 2014 to IPS 2014 SP2 you only need to run the tool for IPS 2014 SP2, you do not need to run the tool for SP1 as well.

You can use the tool to upgrade the IPS software and database. You can use it as part of a major update migration process, but you must use the Database Migration Tool first. See "Upgrading to the latest service pack" on page 75 (database upgrade) and "Upgrading to the latest service pack" on page 77 (software upgrade) for more information. For additional guidance, you can use the online help included with the tool.

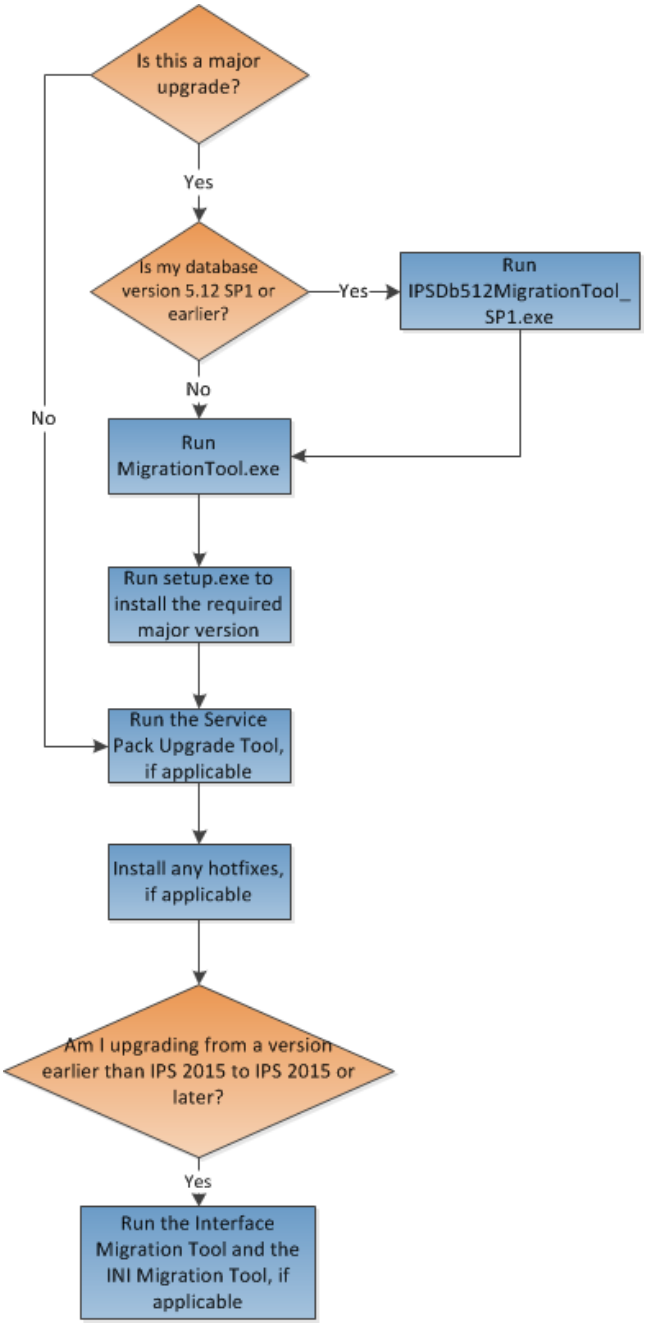
### Migration Tools for IPS 2015 and later

The following Migration Tools are provided only with IPS 2015 or later:

- **The IPS Interface Migration Tool**: for upgrading IPS Import/Export interfaces from versions earlier than IPS 2015 to be compatible with the latest version; see "Upgrade the IPS interfaces (upgrades to IPS 2015 or later)" on page 78
- **The IPS INI Migration Tool**: for upgrading the `IPS.ini` file from versions earlier than IPS 2015 on machines where IPS services (EDI or Interfaces) are installed; see "Upgrade the IPS INI file (upgrades to IPS 2015 or later)" on page 79

## Upgrade steps

The diagram below gives a quick guide to all the steps needed to upgrade IPS.



# Upgrade the IPS database

## Before you begin

Before you migrate your database, you **must** complete the following steps:

1. Check the C_CONFIG table (for version 5.20 or earlier) or N_CONFIG_PARAMS (for version 2013 or later) to make sure that it contains an entry for the Operator code. If this is not the case, you must enter your organization's 3-character code manually, otherwise the migration will fail. To do this, run this statement on your IPS database:

   5.20 or earlier:

   ```
   if not exists(select config_value from c_config where config_key = 'Oper-
   ator code')
   insert into C_CONFIG values ('Operator code', <OperatorCode>)
   ```

   2013 or later:

   ```
   if not exists(select config_value from n_config_params where config_key =
   'Operator code')
   insert into N_CONFIG_PARAMS values ('Operator code', <OperatorCode>)
   ```

   where `<OperatorCode>` is the value for the Operator code for the country, for example CHA for Switzerland.

2. Install the most recent version of the .NET Framework on the machine you will run the tool from. If you do not, the migration procedure will fail.

3. Verify your user rights:
   - You are administrator of the servers where you are performing the upgrade
   - You have read/write permissions on all folders specified in the migration and service pack upgrade tools (including for logging)
   - You have **db_owner** role on the database

4. Ask all users to log out of IPS, and make sure no-one is still logged in before you continue with the migration.

5. Stop all running IPS services (Business Server, EDI, Import/Export and PSD communication service, as applicable).

6. If you are using replication, ensure that all pending data is replicated, then disable publishing and distribution.

7. Back up your current IPS production database.

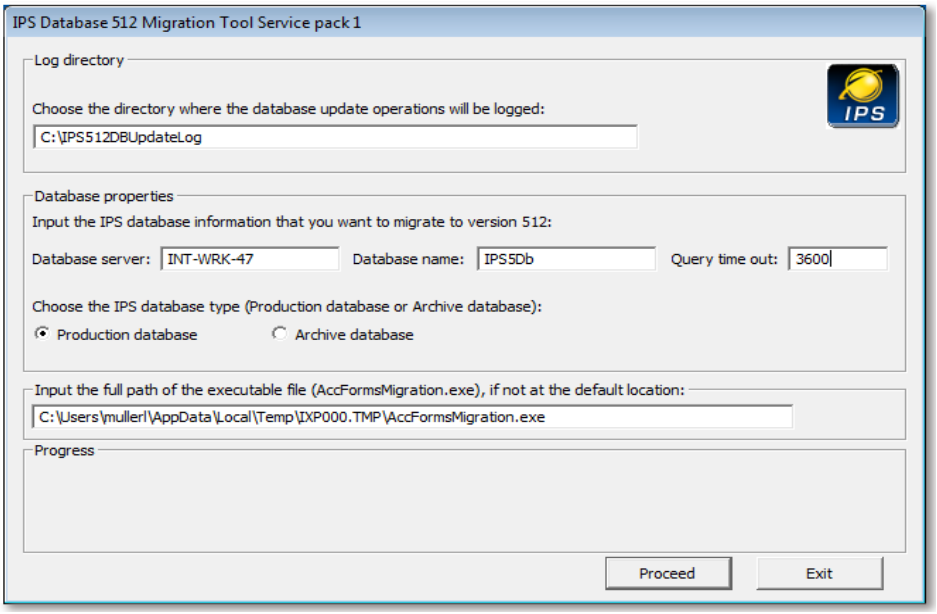
8. Deactivate the production database using SQL Server (right-click on the database and select **Tasks > Take offline**).

## Upgrading from a version earlier than IPS 5.12 SP1

If you are upgrading from a version **earlier than IPS 5.12 SP1**, you must first upgrade to IPS 5.12 SP1, as described in the following steps. If you are upgrading **from version 5.12 SP1 or later to the**

**latest version**, skip this procedure and go straight to "Upgrading from IPS version 5.12 SP1 or later to the latest version" on page 73.

1. Under the setup directory, `Setup_xx` (where 'xx' is the version of IPS you are installing), right-click the IPS 512 SP1 DatabaseMigration Tool and choose **Run as administrator**, to start migrating your database to IPS version 5.12 SP1. The Database Migration Tool is named **IPSDb512MigrationTool_SP1** and appears as follows:




2. Enter the following information in the IPS Database Migration Tool screen:

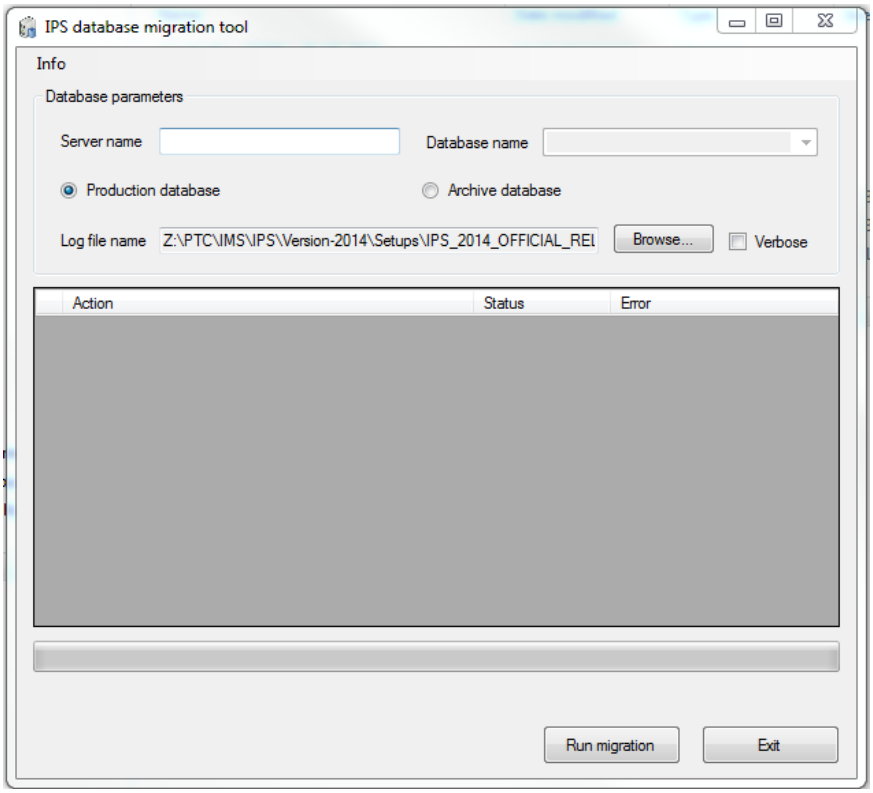
| | |
|---|---|
| **Log directory** | Enter the location where you want to store the log files that are created during the upgrade procedure, or leave the default entry unchanged. |
| **Database properties** | Enter the **Database server** name and the **Database name** of the database that you want to migrate . Lastly, specify the type of database you want to migrate: **Production** or **Archive.**<br><br>Note: You must run the migration tool separately for the production database and the archive database (if any) to make sure that they are both at the same version of IPS. |
| **Query time out in seconds** | For version 5.11 and later - in the **Query time out** field, enter the maximum amount of time in seconds that can elapse for the database to be accessed successfully. If the database server doesn't respond within the time out period specified, the procedure is |

| | |
|---|---|
| **The executable file path** | stopped. The default time out is 360 seconds.<br><br>Enter the full path of the accounting information migration executable, **AccFormsMigration.exe**, or leave the default entry unchanged. This file will be run automatically by the main migration program, in order to migrate the accounting data used by IPS. Note: If you do not have read/write access to the folder specified, copy and paste the content of the executable folder to a folder of your choice and specify it here. |

3. Click the **Proceed** button to start the migration. The time it takes for the migration depends on the size of your database.
4. Check to see if any errors were detected during the migration procedure: you can view them in the log files, created in the log directory (see above). A separate log file is created for each step of the migration; so for example, if your current version is two versions older than the latest version, there will be two log files. Also, separate log files are created for running other scripts like Stored Procedures, Functions or Triggers. They should also be checked for errors.
5. Send the log files to ptc.support@upu.int for validation.

## Upgrading from IPS version 5.12 SP1 or later to the latest version

1. Under the setup directory, right-click the `MigrationTool.exe` file and choose **Run as administrator**, to start migrating your database from the currently installed version to the newer version. The following window appears:



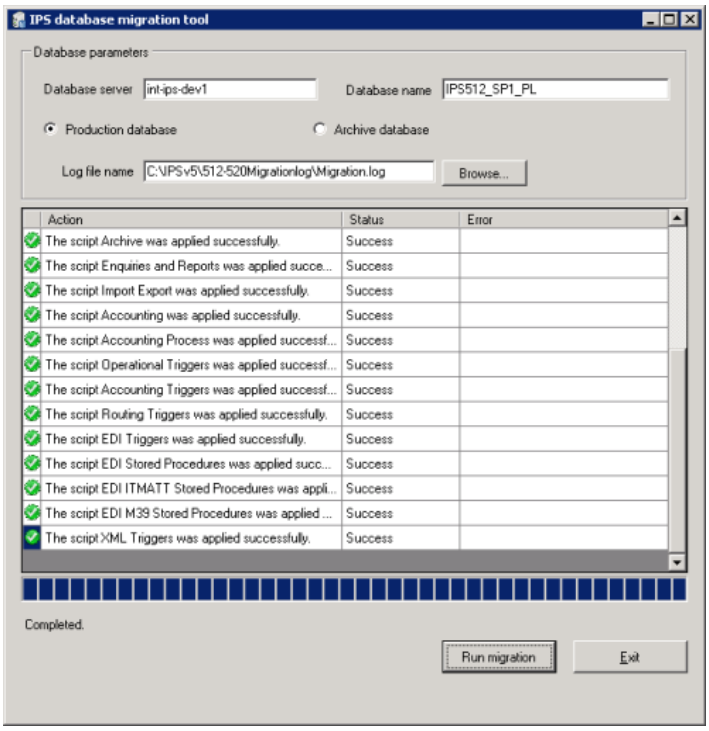

Note: You can also run the Database Migration Tool from the command line by right-clicking `cmd.exe` and selecting **Run as administrator**. Navigate to the setup directory and type `MigrationTool.exe`. When you run the Database Migration Tool from the command line, you can also specify an option to stop the migration if a patch fails, by typing `MigrationTool.exe /stop`. If you add this option, when the IPS Database Migration Tool screen opens, the banner at the top includes the words **Stop on patch failure**.

2. Enter the following information in the IPS Database Migration Tool screen:

| | |
|---|---|
| **Database parameters** | Enter the **Server name** and the **Database name** of the database that you want to migrate. Lastly, specify the type of database you want to migrate: **Production database** or **Archive database**.<br><br>Note: You must run the migration tool separately for the production database and the archive database (if any) to make sure that they are both at the same version of IPS. |
| **Log file name** | The migration tool creates a single log file. Enter the full file name, including the directory where you want to store the log file, or leave the default entry unchanged. |

3. Click the **Run migration** button to start the migration. The time it takes for the migration depends on the size of your database.

4. The progress of the migration is displayed in the migration tool screen:



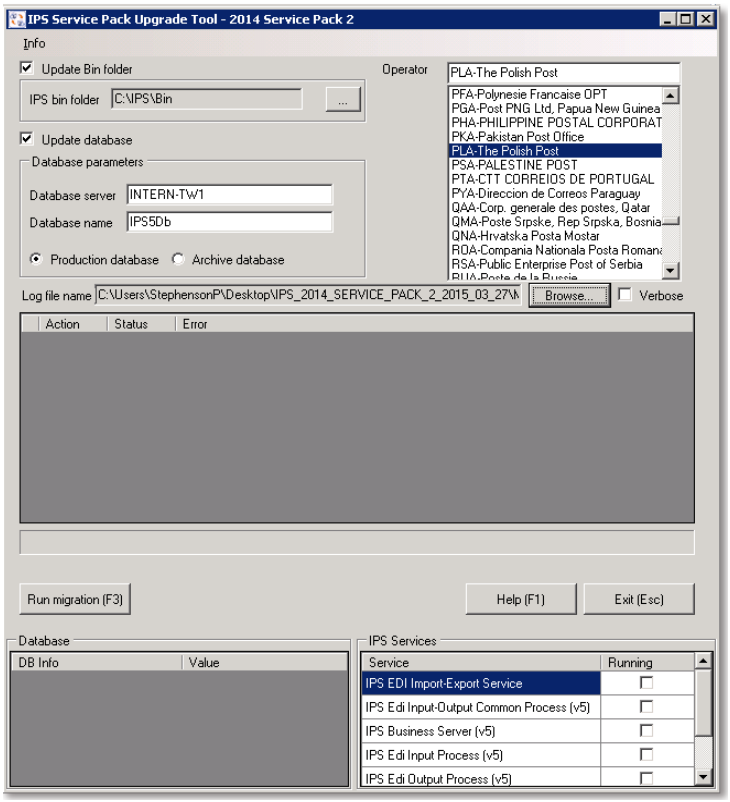

5. Check to see if any errors were detected during the migration procedure. Any errors will be displayed in the migration tool screen, shown above. You should also check the log file (specified above) for errors.

6. Send the log files to ptc.support@upu.int for validation.

## Upgrading to the latest service pack

1. If you have not already done so, complete the steps in "Before you begin" on page 71.

2. In the IPS setup directory, right-click the Service Pack Upgrade Tool .exe file and select **Run as administrator**.




3. Select the current **Operator**.
4. Check **Update database** and specify the database server and name. You can update the production or archive database.
5. Specify where you want to store the log file. Check **Verbose** to log more detailed information.
6. Click **Run migration** to start the upgrade.
7. Send the log files to ptc.support@upu.int for validation.

## Upgrade the IPS software

When you have finished migrating the database, you must complete the following steps on **all** machines where the IPS software is installed.

### Before you begin

Before you upgrade the IPS software, you **must** complete the following steps:

1. Ensure the EDI services are stopped.
2. Ensure the XML Import-Export service is stopped.
3. Ensure the IPS Business Server service is stopped.
4. Uninstall the EDI services from the machine they are installed on.
5. Uninstall the Import/Export service from the machine it is installed on.
6. Uninstall the software from the machines it is installed on.

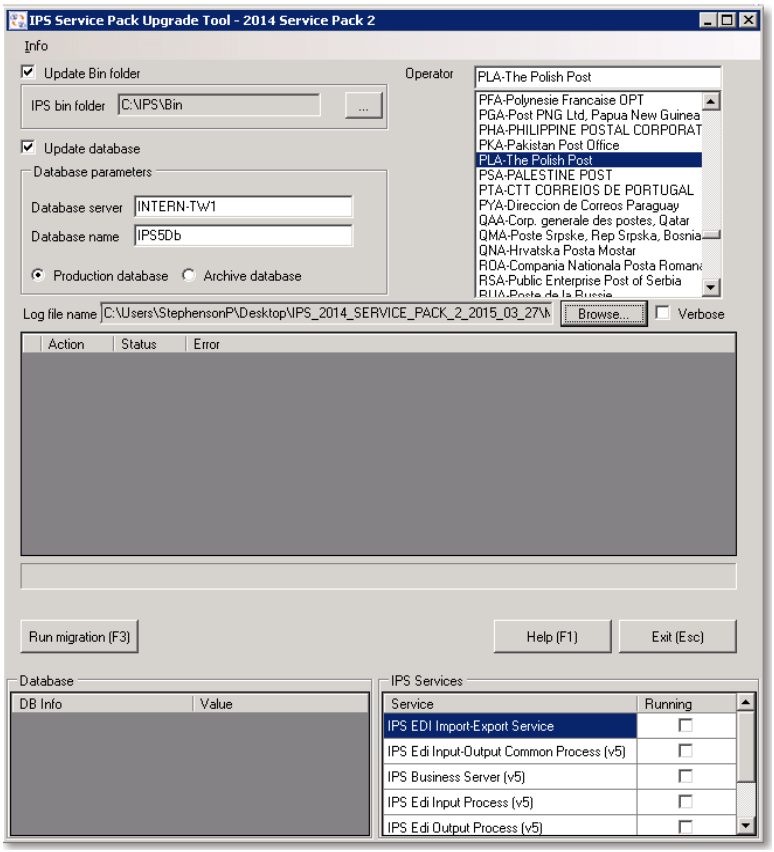
## Procedure

1. Install the latest base version of IPS using setup.exe, choosing the components required for the machine you are currently installing on (see chapters "Installing the business and communications server" on page 34 and "Installing the workstations" on page 44 for more information).
2. Install the latest service pack on all machines where the software is installed (see "Upgrading to the latest service pack" on page 77).
3. Install all the hotfixes (if provided by the PTC) on the machines where the software is installed.
4. If you are using a Business Server:
   a. Regenerate the **ServerRemoting.config** file on the Business Server by running utility **IPS.ApplicationLayer.Utilities.IPSConnectionConfiguration.exe**.

   b. Regenerate the **ClientRemoting.config** file on client installations by executing the utility **IPS.ApplicationLayer.Utilities.IPSConnectionConfiguration.exe**.
5. Restart all services stopped in steps 1 to 3 of "Before you begin" on page 76.

## Upgrading to the latest service pack

1. Stop the services as detailed in "Before you begin" on page 76.
2. In the IPS setup directory, right-click the Service Pack Upgrade Tool .exe file and select **Run as administrator**.




3. Select the current **Operator**.

4. Check **Update Bin folder** and specify its location. Note: You must run this update on each of your client workstations. Alternatively, you can run it once and deploy the DLLs to your workstations using your preferred method.
5. Specify where you want to store the log file. Check **Verbose** to log more detailed information.
6. Click **Run migration** to start the upgrade.
7. Send the log files to ptc.support@upu.int for validation.

## Upgrade the IPS interfaces (upgrades to IPS 2015 or later)

If you are upgrading from a version prior to IPS 2015 to IPS 2015 or later, after you have completed the other upgrade steps, you need to upgrade your IPS interfaces using the Interface Migration Tool. You can find `IPSInterfacesMigrationTool.exe` in the same directory as the Database Migration Tool.

Important:If you are upgrading from a version prior to IPS 2015 to version 2015 or later, you **must** complete this procedure for the upgrade to work properly. It will not be completed as part of any of the other upgrade procedures described in this chapter.

The Interface Migration Tool moves interface details stored within the file `IPS.Core.App.ImpExp.Service.exe.config` into the IPS database, then replaces it with a new file called `IPS.Interfaces.Service.exe.config`. Note that most of the content of the previous file remains in the database only, e.g. details of custom schemas created.

### Procedure

1. Back up configuration file `IPS.Core.App.ImpExp.Service.exe.config`.
2. Run the executable `IPSInterfacesMigrationTool.exe`, completing the fields as follows:
   - **Server Name**: the name of the IPS database server
   - **Database**: the name of the database
   - **Source Config File**: the full path to the old IPS.Core.App.ImpExp.Service.exe.config file; when the user selects the file, **Destination Config Folder** is automatically set to the same folder
   - **Destination Config Folder**: the full path to the folder where the new file is to be placed
3. Click **Migrate**.
4. The `IPS.Core.App.ImpExp.Service.exe.config` is replaced by the `IPS.Interfaces.Service.exe.config` configuration file generated by the tool.

### Notes

- The migration tool checks for database connectivity automatically
- The source .config file must be placed in the same folder as the `IPS.Core.App.ImpExp.Service.exe` file
- If any errors occur the tool shows an error message and creates a log file
- If the migration completes successfully, a success message is displayed

- If there is any interface defined that does not have a corresponding transformation file defined in the source .config file, a warning message is displayed

## Upgrade the IPS INI file (upgrades to IPS 2015 or later)

Most values in the IPS INI file are moved to the IPS database beginning with IPS 2015. This process is normally not visible to the user and occurs when starting the IPS application. However, on machines running IPS services (EDI or interfaces) where the IPS application never runs, the INI file needs to be migrated manually using this tool.

You only need to migrate your IPS INI file (`IPS.ini`) if you are upgrading IPS from a version earlier than IPS 2015 to IPS version 2015 or later, on a machine that runs IPS services (EDI or Interfaces). You run this migration after you have completed the other upgrade steps.

To migrate the IPS INI file, run the following the following command from the Windows command line:

```
IPSIniMigrationTool ServerName DatabaseName [IniFilePath
(optional)]
```