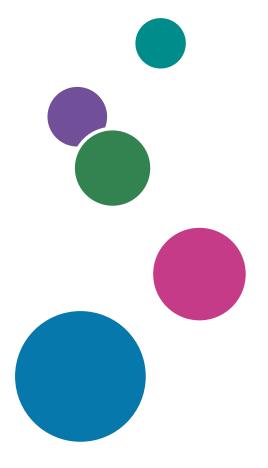


RICOH ProcessDirector™ for Windows

Planning and Installing

Version 3.13.2

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For information not in this manual, refer to the Help System in your product.





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Introduction

Important

To the maximum extent permitted by applicable laws, in no event will the manufacturer be liable for any damages whatsoever arising out of failures of this product, losses of documents or data, or the use or non-use of this product and operation manuals provided with it.

Make sure that you always copy or have backups of important documents or data. Documents or data might be erased due to your operational errors or malfunctions of the software. Also, you are responsible for taking protective measures against computer viruses, worms, and other harmful software.

In no event will the manufacturer be responsible for any documents created by you using this product or any results from the data executed by you.

Cautions regarding this guide

- Some illustrations or explanations in this guide could differ from your product due to improvements or changes in the product.
- The contents of this document are subject to change without notice.
- No part of this document may be duplicated, replicated, reproduced in any form, modified, or quoted without prior consent of the supplier.
- Throughout this publication, references to directory paths indicate the default paths only. If you
 install RICOH ProcessDirector or any of its components in a different location, including a different
 drive, you must adjust the paths accordingly.
 - For example, if you install RICOH ProcessDirector on the D: drive of a computer running a Windows operating system, replace C: with D: in the directory paths.

Publications for this product

The RICOH ProcessDirector publications CD includes the RICOH ProcessDirector publications.

Instruction manuals

These instruction manuals are included:

- RICOH ProcessDirector for Windows: Planning and Installing (this publication)
 This guide explains planning and installation procedures for RICOH ProcessDirector.
- RICOH ProcessDirector: Integrating with Other Applications
 This guide provides technical information about the ways that you can configure RICOH ProcessDirector to exchange data with other applications.
 - This guide can be opened from the Help menu.
- RICOH ProcessDirector: Installing Document Processing Features

This guide explains how to install RICOH ProcessDirector features that control and track both jobs and the individual documents in jobs.

RICOH ProcessDirector: Using RICOH ProcessDirector Plug-in for Adobe Acrobat
 This guide explains how to use RICOH ProcessDirector Plug-in for Adobe Acrobat. You can use the Adobe Acrobat plug-in to define text, barcodes, images, and other enhancements in a PDF file.
 After you save your enhancements in a control file, RICOH ProcessDirector workflows can use the control file to make similar enhancements to PDF files.

Font Summary

This guide explains font concepts and the different types of fonts in the RICOH InfoPrint Font Collection. The *Font Summary* is available only in English.

- White Paper–Using the Enhance AFP Function
 - This guide explains how to configure and use Enhance AFP control files. The guide is available only in English.
- The RICOH ProcessDirector readme file (readme.html).
 This file tells you how to access the other publications. The readme file is available only in English.
- The RICOH ProcessDirector release notes
 These release notes provide information about the RICOH ProcessDirector release, including new functions and updates; known limitations, problems, and workarounds; and code change requests. The release notes are available only in English.

You can also download English publications in PDF format from the RICOH Software Information Center (https://help.ricohsoftware.com/swinfocenter/).

RICOH ProcessDirector Information Center

The Information Center contains topics that help administrators, supervisors, and operators learn about and use RICOH ProcessDirector. The Information Center is available from the user interface and provides quick navigation and search features.

Help

Field help is available on many screens to provide information for specific tasks and settings.

How to read the documentation

Before using RICOH ProcessDirector

This manual contains instructions and cautions for correct use of RICOH ProcessDirector. Before using RICOH ProcessDirector, read this manual thoroughly and completely. Keep this manual handy for future reference.

How to use the manuals

Use the instruction manuals according to your needs.

To learn how to plan for, install, and start RICOH ProcessDirector:

See RICOH ProcessDirector for Windows: Planning and Installing.

To learn about the functions and operations of RICOH ProcessDirector and its installed features:

See the RICOH Process Director Information Center.

To learn how to set property values in the user interface:

See the field help.

To learn how to install a document processing feature:

See RICOH ProcessDirector: Installing Document Processing Features.

To learn how to use the functions and operations of RICOH ProcessDirector Plug-in for Adobe Acrobat

See RICOH ProcessDirector: Using RICOH ProcessDirector Plug-in for Adobe Acrobat.

To learn how to configure RICOH ProcessDirector to exchange data with other applications:

See RICOH ProcessDirector: Integrating with Other Applications.

Displaying the publications

The RICOH ProcessDirector publications are available on the publications CD, so you can access them before you install the application.

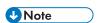


A PDF viewer, such as Adobe Acrobat Reader, is required to view the publications.

To access the RICOH ProcessDirector publications CD on Windows:

- 1. Insert the CD in the CD drive.
 - If the Windows system is configured to autorun CDs, Windows Explorer opens automatically to show the contents of the CD.
- 2. If Windows Explorer does not start automatically, open it and display the contents of the CD drive.
- 3. Open the readme.html file for information about the contents of the CD.

Some of these publications are also available from RICOH ProcessDirector user interface.



You must log in to the RICOH ProcessDirector user interface to view the publications.

In the banner of the RICOH ProcessDirector user interface, click the button and select one of the following publications to download:

- RICOH ProcessDirector: Integrating with Other Applications
- RICOH ProcessDirector: Installing Document Processing Features
- RICOH ProcessDirector: Using RICOH ProcessDirector Plug-in for Adobe Acrobat
- RICOH ProcessDirector: Release Notes

Displaying the Information Center

The RICOH ProcessDirector Information Center is available from the user interface.

To display the Information Center:

- In the banner of the RICOH ProcessDirector user interface, click the button and select Help.
- If you are not logged in to RICOH ProcessDirector, enter this URL in the address bar of your browser:

http://hostname:15080/pdhelp/index.jsp

In the URL, *hostname* is the host name or IP address of the computer where RICOH ProcessDirector is installed.

In addition, you can bookmark the location of the Information Center in your browser and open it at any time outside of RICOH ProcessDirector.

Information about using the functions and operations of features are available only when the features are installed in the system.

Related information

For information about our products, see:

- RICOH website (https://ricohsoftware.com)
- RICOH Software Information Center (https://help.ricohsoftware.com/swinfocenter/)

For information about related products, see:

- InfoPrint Manager for AIX: Getting Started, G550-1061
- InfoPrint Manager for AIX: Planning Guide, G550-1060
- InfoPrint Manager for Linux: Getting Started, G550-20263
- InfoPrint Manager for Linux: Planning Guide, G550-20262
- InfoPrint Manager for Windows: Getting Started, G550-1072
- InfoPrint Manager for Windows: Planning Guide, G550-1071
- InfoPrint Manager: PSF and Server Messages, G550-1053
- RICOH InfoPrint XT for Linux: Installation and User's Guide, G550-20375
- RICOH InfoPrint XT for Windows: Installation and User's Guide, GLD0-0025
- AFP Conversion and Indexing Facility User's Guide, G550-1342
- IBM Print Services Facility for z/OS: AFP Download Plus, \$550-0433
- IBM Print Services Facility for z/OS: Download for z/OS, \$550-0429

Symbols

The following symbols are used in this manual to help you to identify content quickly.

• This symbol indicates points to pay attention to when using the product. Be sure to read these explanations.



• This symbol indicates helpful supplementary information that is not essential to completing a task.

Bold

Bold type indicates the names of dialogs, menus, menu items, settings, field labels, buttons, and keys.

Italic

Italic type indicates the titles of manuals and variables that you must replace with your own information.

Monospace

Monospace type indicates computer input and output.

Abbreviations

AFP

Advanced Function Presentation

API

Application Programming Interface

CSV

Comma-Separated Values

HTTP

Hyper Text Transfer Protocol

ΙP

Internet Protocol

JDF

Job Definition Format

LPD

Line printer daemon

PDF

Portable Document Format

PSF

Print Services Facility

REST

Representational State Transfer

SOAP

Simple Object Access Protocol

SSL

Secure Sockets Layer

WSDL

Web Service Description Language

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The proper names of the Windows operating systems are as follows:

Windows XP:

Microsoft Windows XP Professional

Microsoft Windows XP Enterprise

Windows 7:

Microsoft Windows 7 Professional

Microsoft Windows 7 Ultimate

Microsoft Windows 7 Enterprise

• Windows 10:

Microsoft Windows 10 Pro

Microsoft Windows 10 Enterprise

• Windows 11:

Microsoft Windows 11 Pro

Windows Server 2008:

Microsoft Windows Server 2008 Standard

Microsoft Windows Server 2008 Enterprise

• Windows Server 2016:

Microsoft Windows Server 2016 Standard

Windows Server 2019:

Microsoft Windows Server 2019 Standard

• Windows Server 2022:

Microsoft Windows Server 2022 Standard

Other product names used herein are for identification purposes only and might be trademarks of their respective companies. We disclaim any and all rights to those marks.

New in this release

These new functions and updates have been included in RICOH ProcessDirector Version 3.13.2

New functions and updates in Version 3.13.2

Communicate inside RICOH ProcessDirector with Notes

Added by customer request: Communicate with your colleagues right from the user interface to enable effective, real-time collaboration. Open the **Notes** panel from the banner to leave messages for the next shift, alert operators about service updates, and report status. You can create, edit, and delete messages, with support for reactions and replies to facilitate dynamic conversations.

You can tag colleagues and incorporate hashtags to link messages to specific objects or workflows, keeping conversations contextually relevant. Selecting a tag or hashtag filters the content to display only messages where those terms appear.

Additionally, the entire message history in **Notes** is fully searchable, allowing for fast retrieval of past communications.

Order Management feature enhancements

In Version 3.13.2, the Order Management feature becomes even more powerful! Orders and order properties are more integrated with the user interface and other features. Added function includes:

- Define custom properties for orders.
- Include order properties on banner pages.
- Collect order data using the Reports feature and a new data collector.
- Include orders and order properties in custom portlets.
- Reference order properties from jobs.
- Use order properties in connector logic.

• Set locations at the group level

Make managing access to resources by location more efficient by setting locations at the group level. Previously, locations were set for each user and updated individually. Now, you can set locations for a group and all users added to the group inherit the settings. Move a user to a different group and their locations are updated automatically.

RICOH Supervisor[™] renamed to RICOH Predictive Insight[™]

In April 2025, RICOH Supervisor was renamed to RICOH Predictive Insight. RICOH ProcessDirector is now updated to reflect that product name change.

Updated PostgreSQL

The version of PostgrSQL provided by RICOH ProcessDirector is updated to version 17.4.

Improved support for Custom PDF printers

Custom PDF printers are easier to manage with the introduction of the Printer Definition object. Now, when you upload a GPZ file from a Ricoh representative, you create a Printer Definition, then use the printer definition when you add the Custom PDF printer. With this change, you can migrate printer definitions and Custom PDF printers using Migration Assistant more easily.

New functions and updates in Version 3.13.1

Updated translations

The content of the Version 3.13 product interface and the help system have been translated into these languages:

- Brazilian Portuguese
- French
- German
- Italian
- Japanese
- Spanish

To see the translated user interface and help content, download and install the Language Pack for your language.

Updated PostgreSQL

The version of PostgreSQL included with RICOH ProcessDirector is updated to version 16. If you previously installed the PostgreSQL database provided with RICOH ProcessDirector, you now have the option to update that database during the installation process. You can also choose to complete the installation without updating the database and install the database update later.

Usability improvements

This release includes improvements in the behavior of the user interface, including:

- In the Workflow Editor step template list, moved the Favorites group to the top of the list.
- In the **Jobs** portlet, added a collapsible area for filters, so they take up less space on the screen.
- In the Orders portlet, made order numbers active, so clicking on them opens the order property notebook.

Optimizing the BuildPDFFromDocuments step

For very large PDF jobs or jobs with complex processing requirements, the BuildPDFFromDocuments step can run for hours to finish processing. In this release, we introduce advanced configuration options to help optimize the step to complete faster. If you are interested in exploring this option, contact your Ricoh representative.

New functions and updates in Version 3.13

Order Management feature

At long last, order support comes to RICOH ProcessDirector! The Order Management feature adds the ability to create and track orders submitted from your MIS or order processing system, or to build orders manually in the **Submit Jobs** portlet. Submit your order file in XML format and RICOH ProcessDirector interprets the file, creating orders and jobs to your specifications.

The Order Management feature is included with the base product as a no-charge feature, but is not installed by default.

MarcomCentral Connect improvements

With the addition of the Order Management feature, integration with MarcomCentral is easier than ever. Sample workflows provided in the MacomCentral Connect feature have been updated to use the objects introduced by Order Management for faster integration with your Marcom storefront.

Improved license key installation

We have redesigned the license installation process to improve the experience. The process is now faster and has better messaging and feedback, so you know which feature licenses are activated.

Support for RICOH Pro 8400 series printers

RICOH ProcessDirector now supports sending jobs to these printers with the Fiery EB-36 digital front end:

- Pro 8400S
- Pro 8410
- Pro 8410S
- Pro 8420
- Pro 8420S

- Pro 8420Y (Japan only)

Usability improvements

- On the Workflow Editor, step templates and step chains have been moved to a stationary side panel, instead of displaying in a floating window. In the panel, both step templates and step chains have also been grouped into categories, to make finding the item you need easier.
- In the Migration Assistant, you can now cancel and revert a migration in progress. Objects and files that were migrated are reverted to their pre-migration versions.

New functions and updates in Version 3.12.2

Integrate document composition using FusionPro into your workflows

With this release, we introduce the **FusionPro Connect** feature, which lets you send jobs from RICOH ProcessDirector to **FusionPro Server** for composition and/or impositioning.

Run RICOH ProcessDirector with your own PostgreSQL database

You can now configure RICOH ProcessDirector to use a PostgreSQL database that you install, instead of using the version installed with the product or using IBM DB2. Your database can be installed on the primary computer or anywhere in your network that the primary server can access.

Migration Assistant enhancements

The Migration Assistant makes moving from one system to another easier with two major improvements:

Configuration file migration

You can now migrate configuration files stored in the /aiw/aiw1 directory to the target system without manual intervention.

Reports database configuration and migration

The Migration Assistant can help you set up your Reports database on the target system. Whether you want to set up the target system to connect to the same Reports database that the source system currently uses, or you want to create a new database and move your existing data into it, the Migration Assistant makes the process easier.

In addition, you can now pause/resume and cancel a migration that is in progress.

Improved security with fapolicyd support

If your company uses the File Access Policy Daemon (fapolicyd) to secure your computing environment, RICOH ProcessDirector now provides scripts to generate the list of the standard directories that it uses and a list of rules that permit RICOH ProcessDirector to run.

Support for requesting a printer preset with a job

If you print AFP jobs, you can now send a printer preset request along with the job. If the printer supports the function, it changes its settings to use that preset automatically before printing the job.

• Embedded Tomcat version updated

To address security and functionality issues, the version of Tomcat included in RICOH ProcessDirector has been updated to version 9.

New functions and updates in Version 3.12.1

Updated translations

The content of the Version 3.12 product interface and the help system has been translated into these languages:

- Brazilian Portuguese
- French
- German
- Italian
- Japanese
- Spanish

To see the translated user interface and help content, download and install the Language Pack for your language.

Upgrade and migrate to PostgreSQL on the same system

In RICOH ProcessDirector version 3.12, we introduced support for PostgreSQL as the main database underlying RICOH ProcessDirector. To move to PostgreSQL, you were required to install version 3.12 on a different server and use the Migration Assistant to migrate your data. With version 3.12.1, you can upgrade and migrate your data on the same system. Install RICOH ProcessDirector, making sure to choose the PostgreSQL database configuration. After the installation completes, follow the instructions to migrate your data, then remove IBM DB2 from your primary computer.

XML-RPC calls no longer supported

The Connect extension, which let you connect to RICOH ProcessDirector remotely and use XML-RPC calls in scripts, is deprecated and no longer supported. We recommend using RICOH ProcessDirector web service API instead.

Additional updates include:

- Ability to save the View job in workflow image
- Added the StepChainDemo workflow to illustrate the use of step chains
- Updated prerequisites for the Preprinted Forms Replacement feature, so customers with the AFP Support Feature can install Preprinted Forms Replacement without also installing PDF Document Support.
- Usability updates for the Migration Assistant

New functions and updates in Version 3.12

Primary database options now available

After many years of supporting only one database, RICOH ProcessDirector can now run with PostgreSQL as its primary database. While IBM DB2 is still supported in the same configuration as it has been, PostgreSQL is now the default database configuration. Existing customers can upgrade to version 3.12 and continue to use DB2 with no interruptions, or can choose to migrate their data to a PostgreSQL database.



To migrate data from DB2 to PostgreSQL, you must install RICOH ProcessDirector version 3.12 on a different computer. You cannot install the PostgreSQL configuration on the same system as an existing DB2 configuration.

Migration simplified

One of the most challenging aspects of moving to a new version of an application is ensuring that everything still works. Especially when the upgrade requires moving to a new system, it is

challenging to know that you have copied everything that needs to be there. The RICOH ProcessDirector Migration Assistant now makes the process much easier.

Install the base product on a new system, then log in and start the Migration Assistant. Use the Assistant to connect to your existing installation, choose the objects and settings to migrate to the new one, and let the Assistant do the work. The Migration Assistant can handle moving data from an existing DB2 database to PostgreSQL, and can even work across operating systems.

RICOH ProcessDirector for AIX replacement

In version 3.12, RICOH ProcessDirector for AIX has been discontinued. Customers running on AIX can continue to use the application until the end of support date. Alternately, they can migrate to version 3.12 on Linux or Windows and use the Migration Assistant to port their data to a new system.

New Supported Printers

RICOH ProcessDirector now supports printer models with the new Fiery® N-series Controller Digital Front Ends, based on Fiery and Ricoh technology. You can define these new printer models as Ricoh PDF printers:

- RICOH Pro C7500
- RICOH Pro C9500

Release notes for prior versions of RICOH ProcessDirector are available on the RICOH Software Information Center here: Release notes: RICOH ProcessDirector

1. Overview

- Components
- Compatible products

RICOH ProcessDirector lets you manage all aspects of your printing processes from a comprehensive web browser-based user interface. RICOH ProcessDirector supports job submission from other systems using file copying methods. You can copy or move jobs into directories that you specify (hot folders), and you can configure RICOH ProcessDirector so that it continually monitors the directories and automatically processes jobs as they arrive. You can also submit jobs from any system that uses the line printer daemon (LPD) protocol for file transmission. In addition, RICOH ProcessDirector lets you control and track individual documents in PDF jobs.

The extensive database that RICOH ProcessDirector uses provides detailed audit information about your printing workload and tasks.

You can access RICOH ProcessDirector from a supported browser on workstations in your network. You do not need to install RICOH ProcessDirector on the workstations that you use to access the user interface; you only need to install RICOH ProcessDirector on the computer that is managing your workflow.

If you have purchased and installed the AFP Support feature, RICOH ProcessDirector lets you control and track jobs and individual documents in Advanced Function Presentation (AFP) format. The feature adds support for AFP and PCLOut printers and job submission from z/OS host systems using Download for z/OS and AFP Download Plus.



If you purchased RICOH ProcessDirector without the AFP Support feature, instructions for download input devices, AFP and PCLOut printers, and other AFP-specific system objects and functions do not apply to your RICOH ProcessDirector installation.

You can purchase RICOH ProcessDirector, which provides a perpetual license, or RICOH ProcessDirector Subscription, which provides access to the product for 1-5 years with renewal options for longer term use. You purchase a subscription for the base product and for each feature that you want to install.

Components

The RICOH ProcessDirector base product is made up of these components:

RICOH ProcessDirector primary server

The RICOH ProcessDirector primary server manages all job activities, including input devices that create the jobs and printers that print the jobs. The server also processes jobs through workflows, some of which include other programs. It controls both the flow of jobs and the database tables that store system information.

The RICOH ProcessDirector primary server is installed on a computer with one of these Windows operating systems:

- Windows Server 2019 64-bit
- Windows Server 2022 64-bit

RICOH ProcessDirector stores system information and manages jobs as they flow through the system using a database. Two databases are supported: PostgreSQL and IBM DB2.



- PostgreSQL is the default database configuration starting in version 3.12.
- IBM DB2 was that default database configuration prior to version 3.12.

Existing customers can continue to use IBM DB2 or migrate their data to PostgreSQL. You can use the PostgreSQL database included with RICOH ProcessDirector or use a separate instance of the PostgreSQL database installed locally or on other computer. For details, see Upgrading, p. 59, in Chapter 3.

During the installation process, you specify which database to use. If you choose DB2, you cannot use this database for any other purpose.

RICOH ProcessDirector user interface

The RICOH ProcessDirector user interface is a browser-based interface that lets you manage the printing process. Users can access the user interface from a supported web browser on a Windows or Linux workstation as long as they have a RICOH ProcessDirector user ID. The workstation must have the most recent version of one of these browsers installed:

- Mozilla Firefox
- Google Chrome
- Microsoft Edge

The user interface also has a web-based file viewer that uses the Adobe Acrobat Reader (or similar PDF viewer plug-in) to display AFP or PDF files so you can select pages to reprint.

To access the user interface, enter this URL in the address bar of a browser, replacing *hostname* with the hostname or IP address of the computer that the primary server runs on: http://hostname:15080/pd

After you are authenticated, you can explore the user interface. Highlights of the user interface include:

- The **Main** page includes portlets that show system health, job status, and device status in graphical ways by using colors and graphics. Users can tell at a glance the overall status of their system and easily drill down for more detail as desired.
- On the **Main** page, you can move portlets by clicking the title bar, dragging the portlet to a different position, then releasing the mouse button to drop the portlet. You can also maximize any portlet, so that it fills the entire browser window. The **Fit portlets to window** action, lets you resize all the portlets at once so they fill the available window size.
- You can customize the columns available in all portlets and object tables, using the **Manage** columns action under the **Settings** (a) menu. If a table appears on both the **Main** and **Administration** pages, you can save different columns on each page.
- Both the **Main** and **Administration** pages are automatically updated to show property and status changes. You do not need to refresh the browser to see the most recent information.



- If there are more than 1500 jobs in the **Jobs** table, property and status changes for jobs are not updated automatically. Other portlets continue to update automatically.
- You can add, copy, and delete all types of devices from the Main page as well as from the Administration page. On both pages, Copy and Delete are available on the More actions

menu. On the **Administration** page, the **Add** action is available at the top of the table on the right side. On the **Main** page, the **Add** action is on the **Settings** (*) menu.

- The **Jobs** table displays up to 1500 jobs without using pagination controls. You can scroll through the entire list of jobs in the same table, instead of advancing through them page by page.
- Most portlets and tables include a filter that you can use to find entries easily. Click the Filter icon (
) and type in the box. The portlet or table displays only rows that include the text you entered.
- The **Jobs** portlet includes an **Advanced filter**. Click the arrow to the left of the **Advanced filter** title to expand the filter and specify the conditions that you want to use to filter the **Jobs** table.
- You can manage access to objects on both the **Main** and **Administration** pages based on location properties. If you assign objects such as printers, input devices, and jobs to specific locations, you can use the **Allowed locations** property for each user to define which locations they can see in the user interface.

The **Locations to show** property lets users select which of their allowed locations to display in the user interface. If a user chooses to show a subset of the allowed locations, a location icon (sisplays in the banner area.

• The help window that opens when you click the can be moved to a different position and resized to show more or less information. You can also highlight text in the window, so you can copy it.

The user interface is available in these languages:

- Brazilian Portuguese (pt_BR)
- English (en_US)
- French (fr_FR)
- German (de DE)
- Italian (it_IT)
- Japanese (ja_JP)
- Spanish (es_ES)

RICOH ProcessDirector information center

The information center contains topics that help users learn about and use RICOH ProcessDirector.

Features

RICOH ProcessDirector features provide more functions or let you add support for devices like inserters to the system. The modular design of RICOH ProcessDirector lets you add features to the base product as your business needs change.

Most features are integrated seamlessly into the user interface and are installed using the **Feature**Manager utility on the **Administration** page of the user interface. When you install a feature with

Feature Manager, the feature is in trial mode. To continue using a feature after the trial period, you must

purchase the feature and install a license key for it. If you do not install a license key, the feature stops

working at the end of the trial period.

RICOH ProcessDirector extended features are custom software components that you can purchase from your Ricoh support representative. The Ricoh support representative installs the extended features on the existing RICOH ProcessDirector primary computer.

No-charge product enhancement features

These features provide support for adding languages, stronger security, and some frequently added job properties to your system. They also add the ability to work with the individual PDF documents inside a job and collect data about your system for reporting purposes.

These features are provided with the base product, but are not installed by default. They do not require an additional license.

Common Properties

The Common Properties feature adds a collection of job and document properties that are useful for transaction processing and tracking purposes. These job properties are not associated with specific step templates, but can be set in a workflow using the **AssignJobValues** step or the **Manage job defaults** action.

Language packs

Language packs include translations for the user interface and help system. Each language pack includes the translated files for one language. Supported languages are:

- Brazilian Portuguese
- French
- German
- Italian
- Japanese
- Spanish

PDF Document Support

The PDF Document Support feature adds functions and objects that let you control and track individual documents in PDF jobs. The feature includes RICOH ProcessDirector Plug-in for Adobe Acrobat. The plug-in lets you identify individual documents, extract data from the documents, and add enhancements such as barcodes, OMR marks, images, hidden areas, and text. Step templates let you add steps to your workflows that use the extracted data to sort, split, and group the documents into new jobs.

Reports

The Reports feature lets you capture selected job properties and printer status changes in a PostgreSQL database. To extract data and visualize it, you can use a business intelligence tool, such as Tableau.

Security

The Security feature provides advanced functions, including password requirements, that increase the security of user accounts. If you have a Lightweight Directory Access Protocol (LDAP) or Active Directory server, the feature lets you use LDAP user IDs and passwords to authenticate to RICOH ProcessDirector.

AFP datastream support

These features provide support for processing AFP jobs and documents. The AFP Support feature is a prerequisite for the other features in this section.

AFP Support

The AFP Support feature lets you control and track jobs and individual documents in AFP format. AFP provides a transaction-oriented data stream that guarantees integrity between the RICOH ProcessDirector server and its printers. The printers can deliver the exact status of every page as it is received, printed, and stacked. The feature adds support for AFP and PCLOut printers.

The feature includes RICOH Visual Workbench with AFP Indexer, Document Property Designer, and AFP Enhancer modes. RICOH Visual Workbench lets you identify individual documents in AFP files and extract data from the documents. Step templates let you add steps to your workflows that use the extracted data to sort, split, and group the documents into new jobs.

Without this feature, you can view but not print AFP data, and you can pass AFP jobs to other programs.

AFP Editor

AFP Editor lets you create barcodes and hide areas in indexed AFP files. You can create barcodes that contain index values, job properties, and static text.

For example, if the postal codes in an AFP file are index values, you can create barcodes that contain the postal codes. You can hide areas in AFP files. No one can see the data in the hidden areas, and the data does not print. For example, you can hide areas that contain existing barcodes that you want to replace. In addition, AFP Editor can automatically replace POSTNET barcodes with Intelligent Mail barcodes (IMBs) that have the same routing code. You can also add text strings, such as $Page \times of y$, to formatted AFP files.

Whitespace Manager

Whitespace Manager lets you define available areas of white space in AFP files. You can fill the white space with content, such as images and text, during the print production process. You place content in a white-space area based on rules you define to target content for specific customers or for the best use of available space.

WPM Connect

WPM Connect lets you integrate the WPM tool into RICOH ProcessDirector workflows for more processing. WPM is not included in the WPM Connect feature; it is a product that must be purchased separately.

This feature is only available in Japan.

Integration features

Integration features help you connect RICOH ProcessDirector to other products, including products from certain other companies. These features provide objects that make integrating with the other applications easier. The other applications must be purchased separately.

Avanti Slingshot Connect

With the Avanti Slingshot Connect feature, you can receive jobs and JDF job tickets from the Avanti Slingshot MIS system and process them with RICOH ProcessDirector. RICOH ProcessDirector can then provide status of the job back to Avanti Slingshot as it moves through the system.

Cut Sheet Support for Kodak

With this feature, you can define and drive Kodak cut sheet printers from RICOH ProcessDirector. RICOH ProcessDirector converts media and stapling requests into the KDK format used by these printers.

Cut Sheet Support for Xerox

With this feature, you can define and drive Xerox cut sheet printers from RICOH ProcessDirector. RICOH ProcessDirector converts media and stapling requests into the XRX or XPIF format used by these printers.

FusionPro Connect

The FusionPro Connect feature lets you integrate file composition operations provided by FusionPro Server into your print workflow. The FusionPro Connect feature provides a step template that sends print jobs to FusionPro Server and waits for them to return to continue processing. In the step, you can choose a FusionPro template and an imposition template to use with the job. The feature also includes a sample workflow that you can use to test your configuration.

This no-charge feature is provided with the base product but is not installed by default.

MarcomCentral Connect

The MarcomCentral Connect feature lets you integrate the online-storefront and web-to-print functions of MarcomCentral into your production workflows. Sample web service input devices retrieve orders for print, digital, and other items from MarcomCentral. RICOH ProcessDirector creates a job for each order and notifies MarcomCentral when the items in the job complete specified steps in the sample workflow.

Prerequisites: Order Management and Web Services Enablement

PitStop Connect

The PitStop Connect feature lets you integrate preflight operations that use Enfocus PitStop Server 10 into your print workflows for PDF print jobs.

Quadient Inserter Express

The Quadient Inserter Express feature is a simplified version of the Inserter feature, which includes support for only Quadient inserters. The feature provides sample objects that you can use as templates for configuring RICOH ProcessDirector to communicate with Quadient inserters.

Prerequisite: AFP Support or PDF Document Support

Quadient Inspire Connect

Quadient Inspire Connect extends RICOH ProcessDirector to make it easier to interact with Quadient® Inspire V8 or above. The feature adds system objects tailored to work with files created by Quadient Inspire so they can be submitted to the processing engine to generate print jobs as part of a print workflow.

You must have the AFP Support feature installed to create AFP files with Quadient Inspire.

RICOH Predictive Insight Connect

The RICOH Predictive Insight Connect feature lets you send data collected by the **Reports** feature in the PostgreSQL database to the RICOH Predictive Insight application in the cloud.

Ultimate Impostrip® Connect

The Ultimate Impostrip® Connect feature lets you integrate the imposition functions of Ultimate Impostrip® Automation or Scalable into your RICOH ProcessDirector workflows.

Document processing features

Document processing features expand the capabilities of a workflow from controlling and tracking jobs to controlling and tracking individual documents in a job.

Without changing the application that creates the job, you can change how the individual documents are processed, using business rules to indicate what processing to do. You can pull documents out of a workflow, attach documents to email, or reprint individual documents. The documents in the job can be split into multiple jobs, sorted based on document-specific information such as address data, or grouped into subset jobs based on data in the document.

Two features add basic functions and objects for processing documents. You must install one or both of these features before you can install the other document processing features:

- PDF Document Support adds functions and objects for processing documents in PDF jobs. This nocharge feature is provided with the base product but is not installed by default.
- AFP Support adds functions and objects for processing documents in AFP jobs.

PDF Document Support and AFP Support let you identify individual documents within a job and map data, such as customer names or postal codes, in the documents to RICOH ProcessDirector document properties. RICOH ProcessDirector stores the document properties and their values in a document properties file.

Available Document processing features are:

Archive

The Archive feature lets you store jobs, documents, and job processing history in a repository and retrieve them by searching for job and document properties. For example, you search for documents by job name, customer name, and account number. After you retrieve a job or document, you can view it, review the properties that were stored with it, and check the production history. You can save the job or document to your workstation, or submit it to a workflow for reprinting or other processing.

Electronic Presentment

The Electronic Presentment feature works with the Archive feature, but must be installed separately. It is available at no charge and does not require a separate license.

The feature provides a collection of sample objects to demonstrate the process of storing information in a repository. The sample workflow receives jobs from an input device and uses a history record notification to capture the times when jobs are printed and mailed. The workflow stores jobs, documents, property values, and history information in a repository.

Automated Verification

The Automated Verification feature lets you add barcodes to the documents in a print job. By reading barcodes, cameras or barcode scanners detect documents that failed to complete a step in their workflow. You can automatically reprint missing documents or manually pull them out of their workflow. A job log records the disposition of the documents in each job and the user ID of the operator who did the dispositions.

Inserter

The Inserter feature automates the insertion of printed documents and inserts (such as marketing materials) into envelopes. The feature can communicate with inserter controllers by sending control files to them and receiving results files from them. Using information in the results file, the feature tracks the insert status of each document in the job. Jobs are reconciled automatically (or manually, with operator control). Reprints are automatically generated for damaged documents.

Postal Enablement

The Postal Enablement feature lets you extract mailing address data from the documents in a job and prepare the data for processing by external postal software. After the postal software verifies the addresses and improves their quality, Postal Enablement updates the documents in the job with the results from the postal software.

Postal software is not included in this feature. You can use your choice of external postal software.

Preference Management

The Preference Management feature lets you update document property values with values from an external preferences file. These values can be used to change the content of selected documents or to change the processing of those documents.

This no-charge feature is provided with the base product, but not installed by default.

Preprinted Forms Replacement

The Preprinted Forms Replacement feature lets you print jobs that previously required preprinted forms on plain paper. You update the definition of each media object for the media requested by these jobs to include the electronic equivalent of the preprinted form data. The application that submits the print files to RICOH ProcessDirector can continue to specify the media for the jobs in the same way.

With the AFP Support feature, the Preprinted Forms Replacement feature also lets you insert PDF forms into AFP jobs.

Datastream transforms

These features provide support for converting jobs in one datastream to another.

Advanced Transform

The Advanced Transform feature lets you transform print jobs to or from these file formats:

AFP

- PCL
- PDF
- PostScript
- BMP, GIF, JPEG, PNG, TIFF (only as input data streams)

You can purchase and install any combination of these transform options.



- A separate license key is required for each input and output transform that you purchase. For
 example, if you buy InputPostScript and OutputAFP, you need two license keys.
- InputPDF is a prerequisite for the InputImage transform.

RICOH Transform features

RICOH Transform features provide a powerful and cost-effective system for transforming jobs to or from the format for AFP printing. The RICOH Transform features are:

- PostScript/PDF to AFP
 Converts PDF and PostScript into AFP
- RICOH PCL to AFP Converts PCL into AFP
- RICOH SAP to AFP
 Converts SAP OTF and ABAP into AFP
- RICOH AFP to PDF Converts AFP into PDF

Prerequisite: AFP Support



- You use the InfoPrint Transform Manager user interface and help system for some Transform configuration tasks. If you install more than one Transform feature, they share the InfoPrint Transform Manager interface.
- All RICOH Transform features include image transforms (GIF to AFP, JPEG to AFP, and TIFF to AFP), which convert GIF, JPEG, and TIFF images to AFP.
- A separate license key is required for each purchased transform.
- You cannot install any of the RICOH Transform features using Feature Manager.
- The APPE conversion tool is installed with the RICOH Transform features.

Advanced workflow features

Advanced workflow features add complexity to your workflow system, so you can track deadlines, manage groups of jobs as a unit, and connect to other applications using SOAP or REST APIs.

Deadline Tracker

Deadline Tracker lets you manage your progress toward meeting your delivery deadlines. If you have service level agreements with your customers, this feature helps you make sure that their jobs

are on schedule to be completed on time. You can see when jobs are behind schedule or risk missing their deadlines. This information helps operators prioritize work and act to bring jobs back on track for on-time delivery. You can monitor expected work (jobs that you expect to receive at set intervals). If the jobs do not arrive in time, you can inform the sender.

Order Management

The Order Management feature adds functions and objects that let you group jobs and process them as a group. With this feature, you can manage the orders for your customer to make sure that orders are on schedule and completed on time. You can see when orders are behind schedule or at risk to miss their due date. This information helps operators set order priority and act to bring orders back on track for on-time delivery.

You can manually submit job files through the **Submit Job** portlet, or automatically create an order by submitting an XML file from your order management system.

Web Services Enablement

The Web Services Enablement feature lets you call REST and SOAP web services from your production workflows to exchange data with third-party applications.

The feature adds support for input devices, step templates, and notification objects that can send web service requests.

Extended features

RICOH ProcessDirector extended features are custom software components that you can purchase from your Ricoh support representative. The Ricoh support representative installs the extended features on the existing RICOH ProcessDirector primary computer.

Compatible products

You can use these products from Ricoh and its subsidiaries with RICOH ProcessDirector:

RICOH InfoPrint Manager

InfoPrint Manager for AIX (Program Number 5765-F68), InfoPrint Manager for Linux (Program Number 5648-F40-0003L, and InfoPrint Manager for Windows (Program Number 5639-N49) are print servers that handle scheduling, archiving, retrieving, and assembly of a print job and its related resource files. InfoPrint Manager cannot be installed on the same server as RICOH ProcessDirector.

MarcomCentral

MarcomCentral is a distributed marketing software platform that you can use to customize and distribute marketing materials. With the MarcomCentral Connect feature, you can integrate MarcomCentral with your RICOH ProcessDirector workflows.

FusionPro

FusionPro is an application suite for Variable Data Printing (VDP) that offers a wide range of document personalization functions. With the FusionPro Connect feature, you can integrate FusionPro with your RICOH ProcessDirector workflows.

RICOH InfoPrint XT for Windows

RICOH InfoPrint XT for Windows (Program Number 5765-XTA) transforms Xerox metacode and line conditioned data stream (LCDS) jobs to AFP. If you plan to install RICOH InfoPrint XT for

Windows on the same server as RICOH ProcessDirector, make sure that it is installed after RICOH ProcessDirector.

Requires the AFP Support feature.

RICOH Predictive Insight

RICOH Predictive Insight is a cloud-based application that helps you monitor, understand, and improve your print production environment through visual representations. With the Reports and RICOH Predictive Insight Connect features, you can collect data about your print operations, send them to RICOH Predictive Insight, and create custom dashboards to display the data.

You can use these products from other companies with RICOH ProcessDirector:

AFP Download Plus

AFP Download Plus is a separately ordered feature of IBM Print Services Facility for z/OS (IBM Program Number 5655-M32) that transforms line data to MO:DCA-P data and then transmits the print job with all required resources to RICOH ProcessDirector.

Requires the AFP Support feature.

Avanti Slingshot

Avanti Slingshot is a JDF-certified print management information platform. With the Avanti Slingshot Connect feature, you can use RICOH ProcessDirector and Slingshot together, passing jobs and data between the programs.

Download for z/OS

Download for z/OS is a separately ordered feature of IBM Print Services Facility for z/OS (IBM Program Number 5655-M32) and is used to submit jobs to RICOH ProcessDirector. Download for z/OS automatically transmits output across the TCP/IP network from the host system to RICOH ProcessDirector for printing or archiving.

Requires the AFP Support feature.

Enfocus PitStop Server

PitStop Server provides PDF preflight functionality. With the PitStop Connect feature, you can include steps to send PDFs jobs to PitStop in your RICOH ProcessDirector workflows.

Ultimate Impostrip®

Ultimate Impostrip® optimizes prepress imposition processes. With the Ultimate Impostrip® Connect feature, you can integrate the imposition functions of Ultimate Impostrip® Automation or Scalable into your RICOH ProcessDirector workflows.

Quadient Inspire

Quadient Inspire enables organizations to create and deliver personalized, compliant customer communications across all digital and traditional channels, from one centralized hub. With the Quadient Inspire Connect and AFP Support features, you can send AFP jobs to Quadient Inspire for processing during your RICOH ProcessDirector workflows.

2. Planning for installation

- Task checklist
- Hardware requirements
- Secure Sockets Layer and Transport Layer Security support
- Considerations for virtual and cloud environments
- Installing required software
- Running the prerequisite checker
- Planning for optional software

Before you install or upgrade RICOH ProcessDirector, you must do these planning tasks:

- Obtain required hardware.
- Determine your database configuration.
- Install required software.
- Install optional software.

You can use the checklist in Installation planning checklist, p. 125 and the Task checklists at the beginning of each chapter to help you keep track of the planning tasks you have completed.



• Your software installs in trial mode. The trial license expires after 60 days. For more information about obtaining and installing license keys, see Downloading and installing license keys, p. 101.

When you finish preparing your computers, continue with the appropriate section:

- Upgrading, p. 59
- Installing, p. 79

Task checklist

Here are the tasks in this chapter that you need to verify are complete. Check each item as you verify it.

Checklist for verifying that planning is complete

Task
The installation planning checklist is complete.
See Installation planning checklist, p. 125.
Required hardware has been obtained.
See Hardware requirements, p. 30.
Required software had been installed.
See Installing required software, p. 39.
Optional software that you want to use has been installed.
See Planning for optional software, p. 51.

Hardware requirements

The computer or computers that you install the RICOH ProcessDirector base product on must meet minimum requirements. If you install RICOH ProcessDirector features on the same computer, it might need more memory, storage space, CPU, or network bandwidth.

Different components and features of RICOH ProcessDirector are installed on separate computers. Those computers have different minimum requirements than the one that the base product and all other features are installed on. These components are:

RICOH ProcessDirector Plug-in for Adobe Acrobat (part of the PDF Document Support feature)
 See RICOH ProcessDirector: Installing Document Processing Features, G550-20312, for a description of the requirements.

The performance of RICOH ProcessDirector and its attached printers depends on the availability and efficiency of memory, processors, disk space, and network resources in the system configuration. Performance also depends on the content of the print data streams being processed and the overall load on the system. For example, complex print jobs, such as those containing images or bar codes, require more resources than those containing plain text. For help determining which hardware configuration meets your print requirements, contact your Ricoh representative to request a workload analysis and system sizing.

- References to the amount of RAM or free disk space are precise. Using commonly accepted
 estimates in your calculations might cause your system to fail prerequisite validation. For example:
 - 4 GB of free disk space is equal to 4,096 MB or to 4,294,967,296 bytes.
 - 4 GB is not equal to 4,000 MB or to 4,000,000,000 bytes.
 - If the requirement is 4 GB, 4,000 MB is not enough.
 - 12 GB of free disk space is equal to 12,288 MB or to 12,884,901,888 bytes.
 12 GB is not equal to 12,000 MB or to 12,000,000,000 bytes.
 - If the requirement is 12 GB, 12,000 MB is not enough.
- Hardware requirements stated for other computing resources including memory, disk space, network I/O, and disk I/O should also be considered as requirements for a virtualized environment.

- RICOH ProcessDirector hardware requirements are for physical processors and CPU cores. As an
 alternative, you can run RICOH ProcessDirector on a properly configured virtual machine (VM)
 guest. Define the VM guest so that the number of dedicated CPUs exceeds the recommended
 minimum hardware requirements for your configuration.
 - Using fewer than the recommended number of physical processors can result in RICOH ProcessDirector workflow performance issues especially under load, failure of the RICOH ProcessDirector system, or failure to install RICOH ProcessDirector or any of its features.

Examples:

- On a physical server with 16 cores, do not configure the RICOH ProcessDirector guest environment to have 24 CPUs.
- On a physical server with 16 cores, do not run two guest systems, each allocated 8 CPUs, where one guest is running the RICOH ProcessDirector software because the host software requires some resources.
- Do not install RICOH ProcessDirector on a virtual host that is configured to overcommit the physical CPU resources.

Primary computer

The system hardware requirements for the computer that the RICOH ProcessDirector base product (and most features) is installed on are:

- A computer that can run one of these operating systems:
 - Windows Server 2019 64-bit
 - Windows Server 2022 64-bit
- 200 GB free hard-drive space on the same drive that RICOH ProcessDirector is installed on.
- Minimum of 8 GB available RAM is required.
 Significantly more available RAM is required for high system loads. Large jobs, many jobs, jobs with many documents, workflow steps that run in parallel, and memory-intensive external programs all increase system loads.



- A minimum of 16 GB available RAM is required if you are using one or more document processing features, for example:
 - ♦ AFP Support
 - ♦ PDF Document Support
 - Archive
 - Automated Verification
 - ♦ Inserter
 - ♦ Postal Enablement
 - Preference Management

Depending on the number of documents you process, you might need additional RAM or free hard-drive space.

The features listed below have additional hardware requirements. These requirements are added to the requirements listed for the primary computer; they do not replace those requirements.

- Advanced Transform feature
 - Minimum 3 GB additional free hard-drive space on the same drive that RICOH ProcessDirector is installed on.



- Large jobs may require additional RAM to process efficiently.
- RICOH Transform features



- These requirements apply only to the RICOH Transform features (such as, PostScript/PDF to AFP and Ricoh PCL to AFP), not to the Advanced Transform feature.
- Minimum of an additional 10 GB free hard-drive space.
- An extra 1 GB RAM for every CPU core, but no less than 4 GB.
 For example, if the computer has:
 - ◆ One dual-core processor, it must have an extra 4 GB RAM.
 - ◆ Two quad-core processors, it must have an extra 8 GB RAM.
 - ♦ Three quad-core processors, it must have an extra 12 GB RAM.
 - Four quad-core processors, it must have an extra 16 GB RAM.

Other hardware requirements

 If you plan to install the RICOH ProcessDirector base product using physical DVDs, choose one of these options:

- Use a DVD drive that is installed in the primary computer. In this case, you run the installation programs from the DVDs or CDs.
- Use a DVD drive on another Windows system in your network.



- Features are included with the base product, but updated features might be provided on DVDs, CDs, or as ISO images.
- If you plan to install using ISO files or by copying installers to a system in your network, the
 directory that you store the installers in must have sufficient room for the downloaded files:
 - Use software that lets you mount and run or extract an ISO file.
 - The ISO **Downloads** page on the Ricoh website specifies how much space is required for each package. See <u>Downloading installation files</u>, p. 82 for more details.
- If you install RICOH ProcessDirector with IBM DB2 provided by Ricoh, you must mount two discs or ISO files at the same time. If you install RICOH ProcessDirector using physical discs, make sure you have two drives available. If you do not, follow the procedure for Installing from a remote directory, p. 83 to copy one of the installers to a server and install from there.
- If you install your own licensed copy of the PostgreSQL on the primary computer or on a different computer, the computer that the PostgreSQL server is installed on must have a minimum of 4 GB available RAM for each PostgreSQL instance that you create for RICOH ProcessDirector to use
- If you install the PDF Document Support feature, the RICOH ProcessDirector Plug-in for Adobe Acrobat must run on a Windows computer. See RICOH ProcessDirector: Installing Document Processing Features, G550-20312, for hardware requirements.

Supported RICOH printers

These printers can be defined in RICOH ProcessDirector as Ricoh PDF printers. Find your printer and controller/DFE below to determine which datastream and port values to use when you define the printer.



 Some printers support more than one controller. As a result, printer models might be listed in more than one table.

Printers with the Ricoh standard internal controller

These printers must have the PostScript option installed. For these printers, set the **Datastream to send** value to PostScript and the **Port** value to 9100.

Gestetner	MP C7501SP	Pro C7110S	Pro 8210
DSm7110	Pro 1106EX	Pro C7110SX	Pro 8210S
Gestetner DSm7135	Pro 1107	Pro C7110X	Pro 8220
Gestetner DSm790	Pro 1107EX	Pro C7200	Pro 8220S
Gestetner P7675	Pro 1107EXP	Pro C7200e	Pro 8300S
IM C6500	Pro 1356EX	Pro C7200S	Pro 8310
IM C8000	Pro 13 <i>57</i>	Pro C7200SL	Pro 8310S
Infoprint 2190	Pro 13 <i>57</i> EX	Pro C7200SX	Pro 8320
Infoprint 2210	Pro 13 <i>57</i> EXP	Pro C7200X	Pro 8320S
Infoprint 2235	Pro C5100S	Pro C7210	Pro 906EX
Lanier LD1100	Pro C7100SX	Pro C7210S	Pro 907
Lanier LD1135	Pro C5110S	Pro C7210SX	Pro 907EX
Lanier LD 190	Pro C5200S	Pro C7210X	Pro 907EXP
Lanier LD260c	Pro C5210S	Pro 8100EX	Savin C6055
Lanier LD275c	Pro C5300S	Pro 8100S	Savin C7570
Lanier LD365C	Pro C5300SL	Pro 8100Se	SAVIN 8090
Lanier LD375C	Pro C5310S	Pro 8110	SAVIN 8110
Lanier LP275	Pro 6100	Pro 8110e	SAVIN 8135
Lanier SP 9100	Pro 6100HE	Pro 8110S	Savin C9065
MP 1100	Pro 6100HT	Pro 8110Se	Savin C9075
MP 1350	Pro C7100	Pro 8120e	Savin MLP175n
MP 9000	Pro C7100S	Pro 8120S	SP 9100DN
MP C6000	Pro C7100X	Pro 8120Se	
MP C6501SP	Pro C7110	Pro 8200S	
MP C7500			
MF C/ 300			

Printers with the RICOH TotalFlow Print Server

For these printers, set the **Datastream to send** value to JDF/PDF. Use the default value for the **Port** setting.

Pro C7100	Pro C7110SX	Pro C7200SX	Pro C7210X
Pro C7100S	Pro C7110X	Pro C7200X	Pro C9100
Pro C7100SX	Pro C7200	Pro C7210	Pro C9110
Pro C7100X	Pro C7200e	Pro C7210S	Pro C9200
Pro C7110	Pro C7200S	Pro C7210SX	Pro C9210
Pro C7110S			

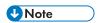
Printers with N- series EFI Fiery controllers

For these printers, set the **Datastream to send** value to Ricoh API for Fiery. Use the default value for the **Port** setting.

Pro C7500	Pro C9500	Pro Z75
Pro C7500H	Pro C9500H	Pro Z75 (Japan version)
Pro C7500HT (Japan only)		

Printers with E- and EB- series EFI Fiery controllers

For these printers, set the **Datastream to send** value to JDF/PDF. Set the **Port** value to 9102 to send jobs to the Print queue or 9103 to send jobs to the hold queue.



• RICOH ProcessDirector only supports these printers with the controllers listed. If your printer uses a different controller, it cannot be defined as a Ricoh PDF printer.

Printer model	Controller	Printer model	Controller
Gestetner DSm7110	EB-135	Pro C550EX Pro C700EX	E-8100
Gestetner DSm7135		110 07 0027	
Gestetner DSm790			
Lanier LD1100	EB-135	Pro C5300SL	E-27B
Lanier LD1135			
Lanier LD190			
Lanier LD260c	E-7100 with	Savin C6055	E-7100 with
Lanier LD275c	Fiery V1.1 and higher	Savin C7570	Fiery V1.1 and higher
Lanier LD365C	E-7200	Pro C651EX	E-41A
Lanier LD375C		Pro C751	
		Pro C751EX	
MP 1100	EB-135	Pro C7100	E-43A/E-83
MP 1350		Pro C7100S	
MP 9000		Pro C7100SX	
		Pro C7100X	
		Pro C7110	
		Pro C7110S	

Printer model	Controller	Printer model	Controller
		Pro C7110SX	
		Pro C7110X	
MP C6000	E-7100 with	Pro C720	E-40
MP C7500	Fiery V1.1 and	Pro C720S	
	higher		
	E-8100 with Fiery V1.1 and higher		
MP C6501SP	E-7200	Pro C7200	E-45A/E-85A
MP C7501SP		Pro C7200e	E-46A/E-86A
		Pro C7200S	
		Pro C7200SX	
		Pro C7200X	
		Pro C7210	
		Pro C7210S	
		Pro C7210SX	
		Pro C7210X	
Pro 1106EX	EB-135	Pro C7200SL	E-35A
Pro 1356EX			E-36A
Pro 906EX			
Pro 1107EX	EB-1357 with	Pro C900	E-40/E-80 with
Pro 1357EX	Fiery V1.1 and higher	Pro C900S	Fiery V4.0 and
Pro 907EX	nigher		higher
Pro 8100EX	EB-32	Pro C901	E-41/E-81
Pro 8100S		Pro C901S	E-42/E82
Pro 8100Se			·
Pro 8110			
Pro 8110e			
Pro 8110S			
Pro 8110Se			
Pro 8120			
Pro 8120e			
Pro 8120S			
Pro 8120Se			

Printer model	Controller	Printer model	Controller
Pro 8200S	EB-34	Pro C9100	E-43/E-83
Pro 8210		Pro C9110	
Pro 8210S			
Pro 8220			
Pro 8220S			
Pro 8300S	EB-35	Pro C9200	E-45/E-85
Pro 8310		Pro C9210	E-46/E-86
Pro 8310S			
Pro 8320			
Pro 8320S			
Pro 8400S	EB-36	SAVIN 8135	EB-135
Pro 8410		SAVIN 8110	
Pro 8410S		SAVIN 8090	
Pro 8420			
Pro 8420S			
Pro 8420Y (Japan only)			
Pro C5100S	E-22B/E-42B	Savin C9065	E-7200
Pro C5110S		Savin C9075	
Pro C5200S	E-24B/E-44B		
Pro C5210S			
Pro C5300S	E-27B/E-47B		
Pro C5310S			

Secure Sockets Layer and Transport Layer Security support

RICOH ProcessDirector provides support for the Secure Sockets Layer (SSL) and Transport Layer Security (TLS) protocols, so you can protect the print data in the system.

SSL and TLS are widely used to protect data on the Internet. The SSL and TLS protocols use digital certificates to establish a secure connection between a web server and any client systems that interact with it. After the connection is established, data transferred between the systems is encrypted using security keys. Only the intended recipient of the information can decrypt the data.

You can also use SSL or TLS to protect data on a smaller scale, such as within a print system like RICOH ProcessDirector. You can activate SSL or TLS to provide a greater level of security for the print data that is exchanged between the primary server and user interfaces, as well as the data that is exchanged with other applications using the web services that RICOH ProcessDirector supports.

To use SSL or TLS on a computer, you must obtain a digital certificate and install it on that computer. It is recommended that you get your certificate from a certificate authority (CA), because CAs are considered trusted third parties. You can use a self-signed certificate for testing, but using that certificate on production systems is not recommended.

When the certificate is issued, the CA sends it to you in an e-mail. You store the certificate in a keystore on the computer that the certificate is registered to.



- RICOH ProcessDirector only supports Java Key Stores (JKS) files. To create a keystore, see the Java documentation about enabling SSL or TLS.
- Your private key password and keystore password must be the same. If they are not the same, you receive a java.oi.IOException error.

After the web server is configured to use it, SSL or TLS is automatically used for communications. The URL for the RICOH ProcessDirector user interface changes to use the https:// prefix. You can still access the user interface using the http:// address, but you can configure the web server to forward all requests to the secure address.

To use SSL or TLS with RICOH ProcessDirector, you can get a digital certificate and install it on the primary computer before you install the base product. After the base product is installed, you must activate SSL or TLS in the RICOH ProcessDirector web server component.

Considerations for virtual and cloud environments

RICOH ProcessDirector can be installed in virtual environments, such as those provided with VMware, or cloud platforms such as Amazon Web Services.

When configuring this type of system, the operating system prerequisites, memory and file system requirements still apply. Carefully consider security and network issues, especially if your RICOH ProcessDirector primary server runs outside of your physical network or you are sending jobs to continuous feed printers.

- The host name assigned to the RICOH ProcessDirector instance cannot change when the server is restarted. If this value changes over a restart, you will have a short grace period to update your license keys before the system stops running.
- If you are printing across an externally hosted or distributed network, you need substantial network bandwidth to keep high-speed printers running at rated speed over long distances.
- Securing data across your network and from cloud platforms to printers on the ground is your
 responsibility. Use of virtual private networks (VPNs) sometimes introduces performance
 degradation in file transfer. Involve your network and security administrators when planning to host
 RICOH ProcessDirector in these environments.

Security:

Securing data across your network and from cloud platforms to secondary servers or printers on the ground is your responsibility.

- Verify that the system where RICOH ProcessDirector is installed meets your security requirements.
- Enable secure HTTP (using the TLS protocol) in RICOH ProcessDirector to increase data security.
- Using a private VPN can help improve security, but it can also degrade network performance.

Network configuration:

- The host name assigned to the RICOH ProcessDirector instance cannot change when the server is
 restarted. If this value changes over a restart, you will have a short grace period to update your
 license keys before the system stops running.
- To enable communication between the remote secondary servers and primary server, make sure that the secondary server uses the primary server hostname over port 5555. For more information about the server name, see Updating a primary computer host name or IP address, p. .

Network performance:

 If you print across an externally hosted or distributed network, you need substantial network bandwidth to keep high-speed printers running at rated speed over long distances. Contact your network administrator for help with configuring your network capacity.

Installing required software

RICOH ProcessDirector requires this software on the primary computer:

- A supported Windows operating system
- A supported database
 RICOH ProcessDirector uses a database to manage the flow of data. Two databases are supported:

PostgreSQL

The default database for RICOH ProcessDirector in version 3.12 and higher. You can choose to install the PostgreSQL version that comes with RICOH ProcessDirector or use you own version of PostgreSQL installed separately. The RICOH ProcessDirector installation program installs PostgreSQL on your system if you choose this option.



 If PostgreSQL version 15 is already installed on the system where you are installing RICOH ProcessDirector, RICOH ProcessDirector uses the version installed.

For download and installation instructions, refer to these links:

- https://www.postgresql.org/download/
- https://www.postgresql.org/docs/

IBM DB2

The default database for RICOH ProcessDirector in version 3.11.2 and lower and an alternate configuration for version 3.12 and higher.

These features require additional software:

- PitStop Connect
 Enfocus PitStop Server 10 or higher on the primary computer.
- FusionPro Connect
 FusionPro Server on the primary computer where RICOH ProcessDirector is installed.
- Ultimate Impostrip® Connect

Ultimate Impostrip® Automation or Scalable on the primary computer or on a separate Windows system.



- If your Windows computer runs in a language other than English, do not install Ultimate Impostrip[®] in the default install directory. The program does not work properly with non-English default install paths. We recommend installing Ultimate Impostrip[®] in C:\ImpostriponDemand on non-English Windows computers.
- Quadient Inspire Connect
 Quadient Inspire Designer V8 or higher.
- The AFP Support feature includes RICOH Visual Workbench, a separate user interface that you can install on any Linux or Windows system in your network.
 - Java 1.8 or later must be installed on the system that is used for RICOH Visual Workbench.
- The PDF Document Support feature includes RICOH ProcessDirector Plug-in for Adobe Acrobat, a separate user interface that you can install on a Windows system in your network. Java 1.8 or later and Adobe Acrobat Pro 2020 or DC must be installed on the system that is used for RICOH ProcessDirector Plug-in for Adobe Acrobat.
- RICOH Transform features

Java Runtime Environment 1.4 or higher.

WorldType Fonts version 8.13 for RICOH SAP to AFP files to transform correctly when IS/3 support is enabled.

Avanti Slingshot Connect
 Avanti Slingshot with the JDF Integration add-on installed on a primary computer.

Other required software:

- A supported web browser
 A browser is required to open the RICOH ProcessDirector user interface, so it is required on any system that is used to access the user interface.
- A PDF viewer

A PDF viewer is used inside the RICOH ProcessDirector user interface to display the contents of print jobs. It should be installed on any system that is used to access the user interface, but it is not required. If you open the user interface from a computer that does not have a PDF viewer installed, you see an error message if you try to view a job. Using Adobe Reader is recommended as it provides the most functionality.

Installing a Windows Operating System

When you install a primary server on a Windows operating system, choose the correct mode to run in and open the correct ports in the firewall.

RICOH ProcessDirector can be installed on these operating systems:

- Windows Server 2019 64-bit
- Windows Server 2022 64-bit

To install a Windows operating system:

- See the Windows documentation to install the appropriate operating system. When you are asked
 to choose 32-bit or 64-bit mode, choose 64-bit mode for the Windows operating system. RICOH
 ProcessDirector is not compatible with 32-bit mode.
 - Make sure that User Account Control (UAC) is set to **OFF**. You can turn it back on when the installation is complete.
- RICOH ProcessDirector supports both IPv4 and IPv6 protocols. If you use IPv4, IP addresses can be expressed using dotted-decimal addresses or the fully qualified host name. If you use IPv6, you must use the fully qualified host name of the server.

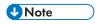


- If you use an IPv6 address, you must complete additional configuration steps after you install RICOH ProcessDirector. See Configuring to use IPv6 addresses, p. 90.
- Create an administrator account specifically for RICOH ProcessDirector to run under. The account should not be connected to a specific person.
- In your firewall, open any ports that RICOH ProcessDirector uses. You must open this port:
 - 15080 for inbound connections on the computer that RICOH ProcessDirector is installed on.
 Other computers use this port to connect to the RICOH ProcessDirector service.

Setting up networking configuration

To set up networking based on system networking information:

 Make sure that RICOH ProcessDirector has access to a Domain Name System (DNS) server. The DNS server must have correct entries for the host name and IP address of each RICOH ProcessDirector primary computer and application/secondary computer on the network.



- RICOH ProcessDirector supports both IPv4 and IPv6 protocols. If you use IPv4, IP addresses
 can be expressed using dotted-decimal addresses or the fully qualified host name. If you use
 IPv6, you must use the fully qualified host name of the server.
- If you use an IPv6 address, you must complete additional configuration steps after you install RICOH ProcessDirector. See Configuring to use IPv6 addresses, p. 90.
- In your firewall, open any ports that RICOH ProcessDirector uses. Depending on your configuration, you might need these ports:

Ports to open for the RICOH ProcessDirector primary server

Port	Used by (Client)	Used for (Purpose)
15080	User workstation	Access to the RICOH ProcessDirector user interface if not using TLS.
15090	Administrator workstation	Access to the RICOH ProcessDirector Feature Manager interface if not using TLS.
15443	User workstation	Access to the RICOH ProcessDirector user interface if using TLS.
15453	Administrator workstation	Access to the RICOH ProcessDirector Feature Manager user interface if using TLS.
515	Customer application	Required when sending jobs to RICOH ProcessDirector using LPR.
5001-65535	Customer mainframe	Sending jobs to RICOH ProcessDirector using Download for z/OS or AFP Download Plus. The port numbers defined in RICOH ProcessDirector must match the port numbers defined as printers on the mainframe.
15080 or 15443	RICOH TotalFlow Print server	Sending printing status to RICOH ProcessDirector.
15081	Administrator workstation	Importing the custom PDF printer definition to the RICOH ProcessDirector server that will be communicating with the printer Only necessary when using custom PDF printers. Most systems do not use custom PDF printers.

Ports to open for printers

Port	Used by (Client)	Used for (Purpose)
161	RICOH ProcessDirector primary server	Getting printer status and information using SNMP.
8010	RICOH ProcessDirector primary server	Getting printer status and information using SNMP.
9100-9103	RICOH ProcessDirector primary server	Sending jobs to a printer with a EFI Fiery controller using Postscript job tickets.

Ports to open for LDAP server

Port	Used by (Client)	Used for (Purpose)
389, 636, or other port as configured.	RICOH ProcessDirector primary server	Using LDAP to authenticate users.

Ports to open for printers that support JMF interfaces ¹

Port	Used by (Client)	Used for (Purpose)
80	RICOH ProcessDirector primary server	Sending IMSS queries using the HTTP protocol.
8010	RICOH ProcessDirector primary server	Sending JMF files to EFI Fiery controllers.
9100 (default) - 9103	RICOH ProcessDirector primary server	Sending jobs to a printer with a EFI Fiery controller using Postscript job tickets. 9100 is the default port. EFI printers use port 9102.

These printers are defined in RICOH ProcessDirector as Ricoh PDF Printer objects.

Ports to open for Passthrough printers

Port	Used by (Client)	Used for (Purpose)
515		Receiving jobs from RICOH ProcessDirector using LPR.

Ports to open for IPDS printers

Port	Used by (Client)	Used for (Purpose)
5001-65535	RICOH ProcessDirector primary server	Sending files to RICOH ProcessDirector using Download for z/OS or AFP Download Plus. These port numbers are configured when you create the input devices that receive these jobs. Open these ports after you define the input devices.

2

Ports to open for a transform server

Port	Used by (Client)	Used for (Purpose)
16080		Accessing the Transform Features user interface if using any of the RICOH Transforms.

Ports to open for the Reports feature

Port	Used by (Client)	Used for (Purpose)
5432	RICOH ProcessDirector primary server and any system accessing RICOH ProcessDirector reports data	Accessing the PostgreSQL database used to store data collected by the Reports feature. This database might be on the primary computer or on a different computer on your network.
		Using a PosgreSQL database installed separately as the primary database or when collecting data with the Reports feature.
		This port can be different depending on the port you specified when setting up the database.

Ports to open for a primary PostgreSQL database

Port	Used by (Client)	Used for (Purpose)
5442		Communication with the PostgreSQL database for RICOH ProcessDirector.

3. Verify network connectivity:

1. To verify that host name resolution is working, enter this command:

host localhost

If you can access the DNS server, the response includes the host name localhost or loopback and the address 127.0.0.1. For example:

localhost.mycompany.com is 127.0.0.1

- 2. From the computer where you will access the RICOH ProcessDirector user interface, use both the host name and the IP address to ping the primary computer.
- 3. From all application and secondary computers (if any), ping the primary computer.
- 4. From the primary computer, ping all secondary computers (if any).

- 5. Contact the network administrator if you are not successful with any of these verifications.
- 4. Verify that the speed, duplexing, and autonegotiation settings for the Ethernet card are those that your network administrator recommends for optimum performance. The optimum settings are different for each installation.

To display and change these settings:

- 1. Log in as the root user.
- 2. To display the Ethernet settings, enter: ethtool eth0
- 3. If necessary, use the ethtool command to change these settings. Check with the network administrator for the appropriate flags and values for your network. For example, this command sets full-duplex mode:

```
ethtool -s eth0 duplex full
```

This command sets autonegotiation on:

ethtool -s eth0 autoneg on

5. Verify that the system listens on open ports. You can use the netstat command to verify the listening ports.

Installing PostgreSQL

You can use the version of PostgreSQL that is supplied with RICOH ProcessDirector or you can install your own copy of PostgreSQL. Your own copy can be installed on the same computer as the RICOH ProcessDirector base product or on a different computer.

If you are upgrading RICOH ProcessDirector and you want to transition from DB2 to PostgreSQL, you can migrate your existing data after you install the update. See Upgrading, p. 59.

Installing the RICOH ProcessDirector version of PostgreSQL

The RICOH ProcessDirector version of the PostgreSQL database is the easiest method to set up your PostgreSQL environment. RICOH ProcessDirector configures the PostgreSQL environment at installation time, allowing RICOH ProcessDirector to communicate with the PostgreSQL database. Also, RICOH ProcessDirector offers specialized maintenance scripts for the PostgreSQL database and the choice to migrate your database in case you need.

The RICOH ProcessDirector version of PostgreSQL is installed when you install the RICOH ProcessDirector base product.

PostgreSQL version 15 is installed on the primary server.

Configuring your own PostgreSQL database

If you cannot use the RICOH ProcessDirector version of PostgreSQL, you can install PostgreSQL on your own and configure it to work with RICOH ProcessDirector.

2

RICOH ProcessDirector requires PostgreSQL version 15 or higher. You must install the PostgreSQL database before you install RICOH ProcessDirector. For download and installation instructions, refer to these links:

- https://www.postgresql.org/download/
- https://www.postgresql.org/docs/



• If PostgreSQL is installed on a different computer on your network, install the PostgreSQL Command Line Tools on the primary computer. Copy or download the PostgreSQL installer to the primary computer and run it. At installation time when you can select the components to install, clear all the options except for Command Line Tools.

RICOH ProcessDirector provides a script to configure a PostgreSQL database installed separately to work with RICOH ProcessDirector. The script is included in the \scripts directory on the RICOH ProcessDirector base product DVD or ISO image.

Running the script requires Perl. Before running the script, make sure that a Perl interpreter is installed on systems where PostgreSQL is installed.

To configure your own PostgreSQL database:

- 1. Log in to the system where PostgreSQL is installed as an administrator.
- 2. Mount the DVD or ISO image on the system where PostgreSQL is installed.
- 3. Add the PostgreSQL bin directory path to your **System Environment Variables**.

 Locate your PostgreSQL bin directory, which is usually C:\Program Files\PostgreSQL\postgresql_version\bin, where postgresql_version is the version of the installed PostgreSQL and add the path to the **System Variables**.
- 4. Start a command prompt as an administrator. Even if you are logged on to your system as an administrator, you must start the command prompt by selecting **Run as administrator** from the right-click menu.
- 5. Go to the scripts directory on the DVD or ISO image and type this command to run the script: perl setupExternalPostgresql.pl
- 6. Respond to the prompts as required:
 - When the script asks for a new or an existing database cluster, enter either the path to an existing database cluster or the path where you want to create a new database cluster.
 - When the script asks for a user name, enter the PostgreSQL user name to assign as the owner
 of the database. You can choose the default PostgreSQL user, a different PostgreSQL user, or
 specify a new PostgreSQL user to be created. The default user is postgres.



- If you do not know the password for the default user, do not select the default user as the user name.
- When the script asks for a password, enter the password for the user. A password is only required in these cases:
 - You create a new database cluster.

- You already created a user for RICOH ProcessDirector to use.
- You create a new user using this script.
- When the script asks for an IP address, enter the IP address of the RICOH ProcessDirector primary server.
- When the script asks for a port number, enter the port used to communicate with RICOH ProcessDirector. The default value is 5432. We recommend using a different port number than the default value when creating a new database cluster. The port number is only required when you create a new database cluster.

The script creates the AIWDB database in the database cluster. If you create a new cluster, the PostgreSQL database starts automatically.

7. Optional: To make sure that the database is installed and running, run a command specifying the port number, database name, and user name. For example, this command lets you connect to your PostgreSQL database with specific options:

```
psql -p 5444 -d AIWDB -U aiwdbpsql
```

where 5444 is the port number, AIWDB is the database name, and aiwdbpsgl is the user name.



- If the command fails or you cannot connect to the database, verify that the information you entered is correct.
- If the command executes correctly, the postgres command line opens.
- 8. To close the session and return to the command prompt, enter:

\q

Installing a web browser

RICOH ProcessDirector requires a web browser to access and display its user interface. You can access the user interface from the primary computer or from another computer. The workstation must have the most recent version of one of these browsers installed:

- Mozilla Firefox
- Google Chrome
- Microsoft Edge

The user interface has a web-based file viewer that requires a PDF viewer plug-in to display AFP or PDF files so you can select pages to reprint. To view print files, you can use an Acrobat plugin or the default PDF viewers that are included with Firefox, Chrome, and Edge.

We recommend installing Adobe Reader on any computers used to manage jobs. If you need to install Adobe Reader, you can download it from the Adobe website. The website tries to detect the operating system and language that your system is running. If you want to download the software in a different language, click **More download options**.



- To view jobs that use double-byte fonts using an Acrobat plugin in RICOH ProcessDirector, be sure that the font package for the Adobe Reader is installed on your system. This package is available from the Adobe website (http://supportdownloads.adobe.com/product.jsp?platform= windows&product=10).
- Use the latest versions of the Firefox, Chrome and Edge browsers to get better functionality from their default PDF viewers.

Configuring Google Chrome

To access the RICOH ProcessDirector user interface from the Google Chrome browser, configure the browser with these settings:

- 1. In the Chrome address bar, enter: chrome://settings/
- Under Privacy and security:
 - 1. Click Cookies and other site data and select Allow all cookies.
 - 2. Go back to Privacy and security and click Site settings. Scroll down to Content and click JavaScript. Make sure **Sites can use Javascript** is turned on.
- 3. If you want to use the viewer component of RICOH ProcessDirector, you must verify that Chrome is configured to open PDF files in its built-in PDF viewer:
 - 1. In the Chrome address bar, enter: chrome://settings/content/pdfDocuments
 - Make sure that the Open PDFs in Chrome is selected.
 Some actions (such as highlighting search text or using small or large zoom values) do not function properly when you use the built-in viewer with RICOH ProcessDirector.
- 4. Close the settings tab.

Configuring Mozilla Firefox

To access the RICOH ProcessDirector user interface from a Windows computer with the Mozilla Firefox browser, you must configure the browser.



The instructions to configure your version of Mozilla Firefox might differ from the instructions below. If any of the instructions do not work with your version of Firefox, click $Help \rightarrow Help$ and search the Firefox help system. For example, search for enable javascript. As an alternative, use a search engine. For example, search for Firefox enable javascript.

To configure Mozilla Firefox:

- 1. In the Firefox address bar, enter: about:config.
- 2. Click I accept the risk!.
- 3. To verify that Javascript is enabled:
 - 1. Find the **javascript.enabled** preference.
 - 2. Make sure the value is set to **True**.

If the value is set to **False**, double-click the **javascript.enabled** preference to change the value to **True**.

- 4. If you want to use the RICOH ProcessDirector right-click context menu, verify that the menu is enabled:
 - 1. Find the dom.event.contextmenu.enabled preference.
 - Make sure the value is set to True.
 If the value is set to False, double-click the dom.event.contextmenu.enabled preference to change the value to True.
- 5. Close the **about:config** tab.
- 6. Click Menu Button → Options.
- 7. To make sure that Firefox can accept cookies:
 - 1. Click the **Privacy & Security** ()tab.
 - 2. In **History**, select **Use custom settings for history** to tailor cookies. Ensure **Accept cookies** from sites is selected.
- 8. Optional: To change how files are downloaded:
 - 1. Click the **General** () tab.
 - 2. In the Downloads area, select Always ask you where to save files.
- 9. **Optional**: If the Language feature is installed, you can change the language that RICOH ProcessDirector uses for the user interface text and most of the messages that it issues:
 - 1. In **Language**, click **Choose** and follow the instructions to add your language to the top of the list. Then click **OK**.



RICOH Process Director supports these languages and locales:

- Brazilian Portuguese (pt_BR)
- English (en_US)
- French (fr_FR)
- German (de DE)
- Italian (it_IT)
- Japanese (ja_JP)
- Spanish (es_ES)
- 10. Optional: When you install Firefox, it is configured to use a built-in PDF viewer. You can use the built-in PDF Viewer with RICOH ProcessDirector, but some actions (such as zoom and highlighting search text) might not function properly.

In some cases, using a different plugin provides more functionality. Depending on the version of Firefox that you are running, you might need to try different options to find one that works with the RICOH ProcessDirector viewer.

To set up the browser to use a different plugin for the viewer, do these steps:

- 1. In Applications, go to the Content Type list, find Portable Document Format (PDF), and select it.
- 2. Next to **Portable Document Format (PDF)**, select the PDF plug-in you want to use.
- 3. Try to view a job in RICOH ProcessDirector to see if it meets your needs.
- 4. Repeat this process until you find the plugin that works best for you.
- 11. Optional: In general, we do not recommend logging in to RICOH ProcessDirector as more than one user from the same workstation. If you do, each user must log in to a different browser session. To make this possible, you must create a browser profile for each additional user ID and enable Firefox to use more than one profile at a time:
 - 1. Close Firefox.
 - 2. Click Start \rightarrow Run.
 - 3. Enter this command:

firefox.exe -ProfileManager

- 4. Follow the instructions in the Profile Manager to create a new profile.
- In the Windows Control Panel, click System → Advanced system settings → Environment Variables.
- 6. In the System Variables area, click New.
- 7. In the Variable name field, type MOZ_NO_REMOTE.
- 8. In the **Variable value** field, type 1.
- 9. Click **OK** to close the New System Variable window.
- 10. Click **OK** to close the Environment Variables window.
- 11. Click **OK** to close the System Properties window.

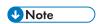
Whenever you start Firefox, you will be able to choose a profile that is not already in use.

Running the prerequisite checker

Use the prerequisite checker to verify that your system is ready to install RICOH ProcessDirector.

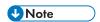
To run the prerequisite checker:

1. Log in as an administrator.



- You must log in using this account every time you install updates. If you use a specific user ID
 and that person moves to a different department, you might not be able to apply service. We
 recommend that you create an administrator account specifically for RICOH ProcessDirector.
 You can also use an administrator account that is tied to the computer, instead of a specific
 person.
- The administrator user ID cannot contain spaces in the name.
- Insert the base product DVD in the drive.
 If the autorun feature of Windows is enabled, the installer starts automatically. Click Cancel to close the installer.
- 3. Open a command prompt and go to the DVD drive.

4. To start the prerequisite checker, type: setup.exe - DPREREQ_ONLY=TRUE



Make sure that you enter the command for the prerequisite checker correctly. If you type the
 -D flag incorrectly, the installer ignores the flag and runs the full installation program instead
 of the prerequisite checker.

If your system has all the prerequisites installed, the prerequisite checker exits without a message. If your system does not have all the prerequisites installed, a message is displayed showing the missing prerequisites. Refer to the prerequisite checker logs for more information. By default, the log file is stored in this directory: C:\Program Files\Ricoh\ProcessDirector\logs.

Planning for optional software

You can install optional software to be used with RICOH ProcessDirector. The categories of optional software are:

- Job submission
- Data transforms
- Fonts
- Formatting changes to PDF banner pages

Job submission

RICOH ProcessDirector can receive jobs from any system that can send jobs to hot folders or from any system that can use the LPD protocol or **pdpr** command. If you have the AFP Support feature, RICOH ProcessDirector can receive jobs from the Job Entry Subsystem (JES) spool on a z/OS host. Jobs are submitted to input devices that you define in RICOH ProcessDirector. Input devices receive the jobs and then initiate job processing.

The supported job submission methods are:

Hot folders

Receives print files through File Transfer Protocol (FTP) or your preferred file copying method. When you copy or move a print file to the hot folder directory, the input device that is associated with the hot folder automatically receives the job and initiates job processing.

Submit Jobs portlet

Lets you upload files and submit them for processing on the Main page of the RICOH ProcessDirector application. You can only submit jobs to a hot folder input device that is enabled and connected or to a workflow that is enabled. The input device or workflow must also be configured to accept jobs submitted using the portlet.

LPD

Receives jobs that are submitted using the line printer daemon (LPD) protocol. Users can use the **lpr** command or another command that uses the LPD protocol to submit jobs to a RICOH

ProcessDirector LPD input device. The input device automatically receives the job and initiates job processing.

pdpr

If you are migrating from InfoPrint Manager and you use the **pdpr** command to submit jobs, you can configure RICOH ProcessDirector to accept jobs from the **pdpr** command. The RICOH ProcessDirector **pdpr** script creates an **lprafp** command to submit jobs, adding flags to send supported job property values to the primary server.

If you have the AFP Support feature, these job submission methods are also supported:

AFP Download Plus

Converts line data to AFP data and transmits the print job with all required resources across the TCP/IP network from the host system to RICOH ProcessDirector for printing.

Download for z/OS

Automatically transmits output across the TCP/IP network from the host system to RICOH ProcessDirector for printing or archiving.

Download for z/OS and AFP Download Plus are separately ordered features of PSF for z/OS. For information about PSF for z/OS and its features, see the IBM website (http://www.ibm.com).

In addition to deciding which job submission methods to use, you need to determine the naming convention for the job submission directories on the primary computer where you want the input files to be. You must specify these directories when you create an input device:

Folder location directory

The name of the directory that an input device monitors for incoming jobs. For example, C:\aiw\aiw1\System\lpd\LPDLineData for hot folder jobs, C:\aiw\aiw1\System\lpd\LPDLineData for LPD jobs, or C:\aiw\aiw1\System\d1\AFP for Download for z/OS or AFP Download Plus jobs.

Staging location directory

The name of the directory where the job submission method places the input file. Consider creating a subdirectory of the folder location directory. For example, C:\aiw\aiw1\System\hf\LineData\Staged for line data input files received from hot folders or C:\aiw\aiw1\System\d1\AFP\Staged for AFP input files received from Download for z/OS or AFP Download Plus.



• Let RICOH ProcessDirector create these directories automatically with the correct ownership when it creates an input device. Do not create the directories yourself.

Before you use Download for z/OS or AFP Download Plus with RICOH ProcessDirector, you must configure the software to communicate with RICOH ProcessDirector. Some of the configuration tasks include:

- Define a JES initialization statement for a functional subsystem application (FSA).
- Create a startup procedure to identify program name, region size, and printing defaults for the FSA.
- For Download for z/OS, create a routing control data set that points to the IP address of the primary computer and port number of the input device.
- For AFP Download Plus, define a Startup Procedure to point to the IP address of the primary computer and port number of the input device.

 Use installation exits, if necessary, for modifications to software functions. Both Download for z/OS and AFP Download Plus can use installation Exit 15, which transmits additional print parameters to RICOH ProcessDirector.

See the RICOH ProcessDirector information center for information about these topics:

- Copying files to hot folders or sending files using the LPD protocol.
- Installing and configuring the RICOH ProcessDirector pdpr script.
- Configuring Download for z/OS and AFP Download Plus with RICOH ProcessDirector.

For information about configuring Download for z/OS and AFP Download Plus, see PSF for z/OS: Download for z/OS and PSF for z/OS: AFP Download Plus.

Data transforms

Data transforms receive print jobs from RICOH ProcessDirector and transform the data from one data stream to another so that it can be printed.

You can purchase RICOH ProcessDirector features that are used to transform jobs from one datastream to another. You can also purchase external programs and connect them to RICOH ProcessDirector.

Products and features that provide data transforms

Product	Data streams transformed to AFP	Data streams transformed from AFP	Other transforms	Information
RICOH Transform features	 GIF, JPEG, and TIFF PCL PDF and PostScript SAP OTF and ABAP 	• PDF		RICOH Transform feature information center
Advanced Transform feature	 PCL PDF PostScript 	PCLPDFPostScript	Input- Image BMP, GIF, JPEG, PNG, and TIFF When you send jobs with image files included in AFP object containers, you must install an	When you order the Advanced Transform feature, you choose the input data stream and output data stream transforms that you need. Then, you can combine them as needed. For example, if you choose the InputAFP, InputPS, the OutputPDF, and the OutputPCL transforms, you can convert: • AFP to PDF • AFP to PCL

Product	Data streams transformed to AFP	Data streams transformed from AFP	Other transforms	Information
			input data stream transform to process them correctly. For example, for AFP files containing images, you must use the InputImage transform. When installed, the InputImage transform automatical- ly handles images in these formats.	 PostScript to PDF PostScript to PCL
RICOH InfoPrint XT for Linux	Xerox metacode and LCDS			RICOH InfoPrint XT for Linux: Installation and User's Guide
RICOH InfoPrint XT for Windows	Xerox metacode and LCDS			RICOH InfoPrint XT for Windows: Installation and User's Guide

For information about using an external step in a workflow to use data transforms, see the RICOH ProcessDirector information center in the user interface.

Preparing to install RICOH Transform features

Before you install a RICOH Transform features, make sure your system meets the minimum requirements.

- Hardware requirements:
 - Minimum of an extra 10 GB free hard-drive space.
 - An extra 1 GB RAM for every CPU core, but no less than 4 GB.
 For example, if the computer has:
 - One dual-core processor, it must have an extra 4 GB RAM.
 - Two quad-core processors, it must have an extra 8 GB RAM.
 - Three quad-core processors, it must have an extra 12 GB RAM.
 - Four quad-core processors, it must have an extra 16 GB RAM.
- Required software:

WorldType Fonts version 8.13 for RICOH SAP to AFP files to transform correctly when IS/3 support is enabled.

Java Runtime Environment 1.4 or higher.

- System and network setup:
 - 1. Determine the number of nodes that the RICOH Transform features will use.

This value is based on the number of processor cores in the computer where you want to install the Transform feature. The value is **2** or half of the cores in the computer, whichever is larger. For example, if the computer has:

- One single-core processor, the number of nodes is 2.
- One dual-core processor, the number of nodes is 2.
- Two dual-core processors, the number of nodes is 2.
- Two quad-core processors, the number of nodes is 4.
- Four quad-core processors, the number of nodes is 8.
- 2. In your firewall, open the ports that the Ricoh Transform feature uses.

These ports must have **LISTEN** permission for the listed application on the computer where you want to install the Transform feature:

- Port 6980 for <install_path>\itm\clients\fdi\fdi.exe.
- Ports 6984 and 6985 for <install_path>\itm\hn\feps.exe.
- Port 6986 for <install_path>\itm\clients\coord\coord.exe.
- Port 6988+<*N*> for <install_path>\itm\node<N>\node.exe.

Where <N> is between 1 and the total number of configured compute nodes. For example, if N is 2, port for <install_path>\itm\node1\node.exe is 6989 and port for <install_path>\itm\node2\node.exe is 6990.

These applications must be allowed to make outgoing connections to the ports indicated on any machine: fdi.exe, feps.exe, coord.exe, pd.exe, node.exe, ctt_standalone.exe

- <install_path>\itm\clients\fdi\fdi.exe to port 6984.
- <install_path>\itm\hn\feps.exe to port 6986.
- <install_path>\itm\clients\coord\coord.exe to ports 6984 and 6986.
- <install_path>\itm\hn\pd\pd.exe to port 6984.
- <install_path>\itm\node<N>\node.exe to port 6985.
- $\langle install_path \rangle \setminus tm \cdot e< N \rangle \setminus standalone \cdot ctt_standalone \cdot exe to port 6988 + < N \rangle$.

Where $\langle N \rangle$ is between 1 and the total number of compute nodes configured. For example, if N is 2, port for $\langle install_path \rangle$ itm\node1\xforms\ctt_standalone\ctt_standalone\ctt_standalone\ctt_standalone\ctt_standalone.exe is 6989 and port for $\langle install_path \rangle$ itm\node2\xforms\ctt_standalone\ctt_standalone.exe is 6990.

Supplied fonts

Five sets of fonts are included with RICOH ProcessDirector. The fonts are available at https://dl.ricohsoftware.com/ when you download RICOH ProcessDirector. See Downloading installation files, p. 82 for more information.

The RICOH ProcessDirector package provides these fonts:

AFP Outline Fonts (LCD4-5683)

These fonts can be used on Linux and Windows. They include fonts for Japanese, Korean, Simplified Chinese, and Traditional Chinese.

AFP Classic OpenType Fonts (LCD2-20029)

These fonts have four styles: Regular, Bold, Italic, and Bold Italic.

AFP Asian Classic OpenType Fonts (LCD2-20055)

These fonts can be used to replace the older AFP Asian single byte character set (SBCS) fonts.

WorldType Fonts (LCD4-5684)

These are OpenType and TrueType fonts in Microsoft Unicode format.

AFP Raster Fonts (LCD4-5700)

These fonts are distinguished from AFP outline fonts because they have character set and coded font names that are eight characters rather than six characters.

To install these fonts for use with RICOH ProcessDirector, copy all the fonts from the supplied discs or ISO files to the C:\aiw\aiw1\resources directory on your primary computer. Be sure to copy all font files from the subdirectories to C:\aiw\aiw1\resources. Do not maintain the subdirectory structure from the source directory, but do make sure that the uppercase file names are preserved.

The AFP printer driver component and the **line2afp** data stream conversion component of RICOH ProcessDirector search that directory when they need a resource to process a job.

The AFP Support feature also provides a basic set of 240-pel and 300-pel fonts (compatibility fonts). These fonts include both uniformly spaced and mixed-pitch type families. These font families are included:

- APL
- Boldface
- Courier
- Document
- Essay
- Format
- Gothic
- Letter Gothic
- Orator
- Prestige
- Roman

- Script
- Serif
- Symbols
- Text

3. Upgrading

- Upgrading on the same computer
- Upgrading on a different computer with Migration Assistant
- Completing the upgrade process
- Backing up data
- Exporting media with electronic forms
- Upgrading the PostgreSQL database version
- Upgrading the DB2 database
- Migrating data from DB2 to PostgreSQL

If you have RICOH ProcessDirector installed, you can upgrade to the current version without uninstalling your existing software, or by installing on a new system and moving your objects to it.

For information about the new functions and updates included in this release, see New in this release, p. 10.

If you are upgrading RICOH ProcessDirector and have another computer, we recommend that you install on that computer. By installing on a different computer, you decrease the risk of problems and minimize downtime during this process. When the installation finishes, you can migrate your objects from your existing system to the new system. You can then verify the new installation while the old computer is still running.

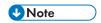
In version 3.12, RICOH ProcessDirector introduced the **Migration Assistant**. Start this tool on your newly installed system (known as the target system) to access your existing system (known as the source system) and move objects over. The **Migration Assistant** simplifies the process, so you don't have to manually export objects from one system and import them to the new system.

Database evolution

For many years, RICOH ProcessDirector supported only IBM DB2 as its database. In version 3.12, support was expanded to include PostgreSQL PostgreSQL replaced DB2 as the default configuration for RICOH ProcessDirector.

When you upgrade to version 3.12 or later, you have two choices:

- Continue to use your current database.
- Migrate from DB2 to PostgreSQL.



If you plan to migrate from DB2 to PostgreSQL, you can either install the database included with RICOH ProcessDirector or you can install the database yourself. After you complete the RICOH ProcessDirector installation process, you can move your data into the PostgreSQL database.

Each option has different variables to consider, such as:

- The PostgreSQL configuration can be installed on Rocky Linux compared to DB2, which cannot be installed.
- You already have PostgreSQL installed and you want to configure RICOH ProcessDirector to use it.
- If you plan to install the upgrade on a different computer, the Migration Assistant can move your objects and settings into PostgreSQL just as easily as into DB2.

Choose which database configuration to use before you upgrade, based on these factors and specifications for your environment.

3

If you use the Reports feature, you can use the same PostgreSQL database or both running RICOH ProcessDirector and storing the collected data.

Upgrading on the same computer

If you are upgrading to a more recent version of RICOH ProcessDirector on the same computer, you need to meet certain requirements:

- You have Version 3.7 or higher of RICOH ProcessDirector installed.
- Your system meets all the prerequisites for this version.



- The installer for newer versions of RICOH ProcessDirector enforces prerequisites more rigorously than earlier versions. If your operating system does not meet the minimum requirements, the installer cancels the installation. You do not need to uninstall RICOH ProcessDirector to install an operating system upgrade.
- Before upgrading, determine the database to use for running RICOH ProcessDirector. Starting
 with version 3.12, PostgreSQL installed with RICOH ProcessDirector is the default database
 configuration. When upgrading to a more recent version you can continue to use DB2 with no
 interruptions or can choose to migrate your data to a PostgreSQL database.
- You have the installation DVDs or ISO files provided by Ricoh.
 Follow these instructions as needed:
 - Downloading installation files, p. 82
 - Installing from a remote directory, p. 83

The installation process upgrades the base product and almost all the features that are currently installed. RICOH Transform features and extended features (custom software components) are not updated automatically. You install them separately after you install the upgrade.

If you use more than one RICOH Transform features, upgrade all the transform features before you install your new license key.

- For information about installing RICOH Transform features, see Installing RICOH Transform features, p. 99.
- For more information about installing extended features, contact your Ricoh support representative.

To upgrade to the current version of RICOH ProcessDirector on the same computer:

- Verify that your system meets the prerequisites.
 See Hardware requirements, p. 30, Running the prerequisite checker, p. 50, and Installing required software, p. 39 for more information.
- 2. Before upgrading your system, back up your data.

See Backing up data, p. 71 for more information.

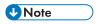


- If you are migrating from DB2 to the PostgreSQL database, take a backup of your DB2 database to avoid the risk of data loss.
- 3. Stop the RICOH Process Director service.

See Starting and stopping the RICOH ProcessDirector service, p. 121 for more information.

- 4. If RICOH ProcessDirector is running with a DB2 database and you want to update your database, update it before or after you install RICOH ProcessDirector. See Upgrading the DB2 database, p. 74 for more information.
- 5. Follow the instructions in Preparing the primary computer for installation, p. 80.
- 6. Start the install process.
 - 1. Log in using the administrator account that was created for RICOH ProcessDirector to run under when you prepared the Windows system. This account should not be attached to a specific person.
 - 2. Insert the base product DVD or double-click the ISO file.
 - If you use a DVD and the autorun feature of Windows is enabled, the installer starts automatically. If the installer does not start, open Windows Explorer and go to the DVD drive.
- 7. Double-click setup. exe. The installer starts.
- 8. Select the appropriate language for the installer to use and click **OK**.
- 9. Select to install the base product.
- 10. After installing the base product, another installer starts and displays the Introduction window. Follow the instructions in the installer, clicking Next on each window after you fill in required information.
- 11. The installer verifies many of the prerequisites for the system. If it finds any problems, it lists them for you. Click **Cancel** to close the installer and fix the problems, then start the installer again.
- 12. Review and accept the license and maintenance agreements.
- Choose the database configuration that you want to use. If you currently use PostgreSQL as your main database, continue with step 14.

If you choose to change databases, such as moving from DB2 to PostgreSQL, the installer installs the new database, but the contents are migrated later.

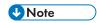


- If you choose to change databases, the installer checks for prerequisites. If any prerequisites are missing, follow the instructions in the installation program.
- Choose whether to upgrade your version of PostgreSQL if a newer version exists on the installation DVD or ISO file.



- If you are changing from DB2 to PostgreSQL as your main database, you must select the option to upgrade the database during the installation process.
- To upgrade your PostgreSQL database after you install RICOH ProcessDirector, you can run the upgrade script separately. To run the upgrade script after the installation, see Upgrading the PostgreSQL database version, p. 73.
- 15. Enter the password for the administrator user ID that you logged in with.
- 16. Review the pre-installation summary and click **Install** to start installing.

- 17. If a window appears with a warning about file security, you must click **Run** to continue the installation.
- 18. Click **Done** to complete the installation.
- 19. Choose the option to restart the computer and complete the installation process.
- 20. If you installed from a DVD, eject the disc.
- 21. If you see error messages, view the installation logs in the C:\Program Files\Ricoh\ProcessDirector/logs directory and contact Software Support.
- 22. If you installed PostgreSQL and need to migrate your data to PostgreSQL, continue with: Migrating data from DB2 to PostgreSQL, p. 75
- 23. If you have not restarted the computer that RICOH ProcessDirector is installed on, restart it now.
- 24. When the computer restarts, RICOH ProcessDirector should start automatically. Use your browser to log in to the user interface. If an error occurs during the installation, contact Ricoh Software Support.



- Use the **About** box to verify that the product version was updated.
- Use the **Feature Manager** to verify that all of your previously installed features were updated to new levels.

Open Feature Manager by clicking **Administration** \rightarrow **Utilities** \rightarrow **Features**. If you see an error message, you must start Feature Manager manually:

- 1. Log in to the primary computer using the RICOH ProcessDirector administrator account.
- 2. Click the Windows Start button, type services to search for the Services App, and click the Services App.
- 3. Right-click the Feature Manager Service and select **Restart**.
- 4. To complete the process, clear your browser cache.
 Information that is stored in the browser cache can cause errors when you try to use the newer level. Clearing the cache prevents those errors.
- 5. Reload the Feature Manager webpage.
- 25. Continue with Completing the upgrade process, p. 70 to finalize the upgrading process.



RICOH ProcessDirector and all features install in trial mode. After you upgrade, download and
install license keys. If the trial period expires before you install license keys, the software stops
working. See Downloading and installing license keys, p. 101 for more information.

Upgrading on a different computer with Migration Assistant

To reduce the risk of problems, we recommend installing RICOH ProcessDirector on a different computer and then migrating your objects from the existing system to the new system.

Using the **Migration Assistant** when upgrading reduces downtime during migration by preventing problems such as missing features and ensuring that objects and all their dependencies are migrated together.

When using the Migration Assistant, the system you want to migrate from is referred to as the source system, while the destination system for migration is referred to as the target system.

Planning for Reports database migration

When you upgrade RICOH ProcessDirector on a different computer with the Reports feature installed, special consideration is required. You must make several decisions related to the Reports database to help the migration proceed smoothly.

Continue using the same Reports database?

The first decision to make is whether you want to continue using the same database to store your Reports data with the new installation or install a new database. There are several points to consider:

- If the Reports database runs on the source system with RICOH ProcessDirector, you likely want to move that database to the new system.
- If the Reports database runs on a different system in your network and you configured RICOH ProcessDirector to access it, you likely want to continue using that database.
- If you are upgrading to new server hardware to consolidate or decommission older servers, the
 option to move your Reports data onto the new server with RICOH ProcessDirector is worth
 considering.

If you choose to connect your new RICOH ProcessDirector system (your target system) to your existing Reports database, use this setting on the **Reports** page of the Migration Assistant:

• Reports Database Configuration: Use existing Reports database

Continue with Preparing to use the Migration Assistant, p. 64.

If you choose to create a new database, continue with the next question.

Where to create the new PostgreSQL database for Reports?

RICOH ProcessDirector can be configured to use either IBM DB2 or PostgreSQL to store data and manage jobs as they progress through their workflows. The Reports feature stores data in a PostgreSQL database, regardless of which database configuration RICOH ProcessDirector uses for the primary database.

Before you start the migration, determine whether to create your Reports database in a PostgreSQL instance installed by the RICOH ProcessDirector installer or in an instance that you install separately.

To use the PostgreSQL installed with RICOH ProcessDirector

No preparatory configuration is required. When you run the Migration Assistant, the Reports database is created in the same PostgreSQL instance that RICOH ProcessDirector uses, but in a separate database cluster.



Even if you use RICOH ProcessDirector with IBM DB2, you can use this option.

When you run the Migration Assistant, choose: **Reports Database Configuration**: **Use new Reports database**

To use a PostgreSQL installed separately

Before you start the Migration Assistant, configure the Reports database settings for the target system on the **Administration** \rightarrow **Reports** \rightarrow **Database Settings** page. Enter values for the properties in the **General** section, then click the switch next to **Disabled: Do not capture data** to enable data capture.

Enabling data capture creates the Reports database cluster, but does not create any database tables. Do not create any Data Collectors, Data Transmitters, or collect data using the **WritePropsToReportsDatabase** step before you run the Migration Assistant.

When you run the Migration Assistant, choose: **Reports Database Configuration**: **Use new Reports database**

Migrate your existing data to the new database?

If you choose to create a new Reports database, you can also choose whether to move the data stored in the existing database to the new database. Choose the correct setting on the **Reports** page of the Migration Assistant:

- Import existing Reports data
- Do not import existing Reports data

Preparing to use the Migration Assistant

For a successful migration, we recommend taking some measures to prepare your systems to avoid difficult-to-solve problems that could lead to migration failure.

To prepare your systems for migration:

- 1. Install RICOH ProcessDirector on the target system.
 - 1. Verify that your system meets the prerequisites.

See Hardware requirements, p. 30, Running the prerequisite checker, p. 50, and Installing required software, p. 39 for more information.

2. Follow the installation instructions just as you would for a new installation.

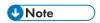
See Installing, p. 79 for more information.

- 3. Return to this procedure after you complete the process to install the base product.
- 4. Log in to the version of RICOH ProcessDirector that you just installed. Use the User Name aiw and the Password aiw.
 - When you change the password for this user, remember the new password. We recommend logging in as this user until the migration process is complete and all users are imported to the target system.
- 5. Install the same features that you had on your old system and any new features that you have purchased. If an error occurs during the installation, contact Ricoh Software Support.

For more information, see Installing features, p. 92 and Installing RICOH Transform features, p. 99.

6. **Optional**: Download and install license keys. RICOH ProcessDirector and all features install in trial mode. If the trial period expires before you install license keys, the software stops working.

See Downloading and installing license keys, p. 101 for more information.



You can install license keys after the migration process is complete if you prefer.

- 2. If you use the Reports feature, review Planning for Reports database migration, p. 63. Before you start the Migration Assistant, consider these items:
 - Whether you want to continue using the existing Reports database or create a new one for the target system.
 - If you want to create a new database, what instance of PostgreSQL to use, an instance installed with RICOH ProcessDirector or one installed separately.
 - If you are creating a new database for the target system, whether you want to migrate your existing data.

If you plan to create a new Reports database on the target system and migrate your existing data into it:

- 1. Log in to the source system and enable all the data collectors whose data you want to migrate.
- Optional: Create the new database. Log in to the target system and open
 Administration → Reports → Database settings. Review and update the settings, then
 enable data capture. The database table is created automatically if everything is configured
 correctly.



This step is required if you use a PostgreSQL instance installed outside of RICOH ProcessDirector.

- 3. If you are using the Preprinted Forms Replacement feature, export the media.zip file from your target system and copy it to the source system. Follow the instructions for Exporting media with electronic forms, p. 72.
- 4. When you import step resources, the files that they refer to are not included in the export package. Copy the files referenced in the step resources from the source system to the target system manually. You must copy the files to the target system before you start the **Migration** Assistant.
 - 1. To import all the step resources, copy the contents of C:\aiw\aiw1\StepResources from the source system into the same directory on the target system.
 - 2. To import specific step resources, open the XML file that you exported. Find the entry for each step resource that you exported and locate the **StepResource.File** property. In that value, find the name of the RSC file associated with that step resource. For example, in this value:

The file name is: 1992052c6ef44a229b8b43d77232bf53.rsc

- 3. Find the file on the source system and copy it into the same directory on the target system.
- 5. The **Migration Assistant** cannot migrate SSH Key credentials.

Private Key credentials cannot be exported, because they must be created on the system where they are used. Objects that use private key credentials fail in the **Migration Assistant** and must be recreated manually afterwards.

- 6. Prevent common issues that can result in migration failure:
 - 1. Take a snapshot or backup of both the source and target systems to avoid the risk of data loss.

See Backing up data, p. 71 for more information.



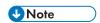
- Using Migration Assistant to upgrade on a different computer does not affect the source system, preserving the data and configuration. We recommend backing up both systems as a safety measure.
- 2. Make sure that the **Product Update** features are installed on both systems at the same level. In the Feature Manager, find the **Product Update** feature for both systems and compare the values in the **Installed Version** column.



- If the target system has a higher version, you have the opportunity to download the package during the migration. Then you can install the **Product Update** using **Import Package** on the source system **Feature Manager** page.
- If the source system has a higher version, find the most recent product update package in: /opt/infoprint/ippd/available. The name of the package is: ProductUpdate-3.4.version_number.epk. Download the package, then log in to the target system. Open Feature Manager, import the package, then install it.

For more information, see Adding or upgrading a feature using Import Package, p. 95.

- 3. Check file system capacity. For a successful migration, the target system should have at least as much available capacity as the source system.
- 4. Verify that antivirus or other security software that locks and scans files is still disabled on the target system.



- Microsoft Defender Firewall and Microsoft Defender Antivirus are separate programs.
 You must disable Microsoft Defender Antivirus. Turning off Microsoft Defender Firewall does not prevent the installation issues described.
- Microsoft Defender Antivirus must be disabled; passive mode is not sufficient to prevent install errors.

Verify that exceptions for these paths are defined in your antivirus software:

- C:\aiw\aiw1
- C:\Program Files\Ricoh\ProcessDirector

- If you use DB2 as your database:
 - C:\AIWINST
 - C:\ProgramData\IBM
- If you use a custom feature that integrates BCC software with RICOH ProcessDirector:
 - C:\BCC

Running the Migration Assistant

With the **Migration Assistant**, objects and files are transferred from one RICOH ProcessDirector system to the other. This process significantly minimizes the likelihood of human error associated with the import of a large number of objects and files.

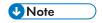
Before you begin, make sure you know the URL for the login page of the system you want to migrate from (source system). To proceed with migration, you need Administrator access for both the source and target systems.



- We recommend logging in to the target system using the aiw user, as your RICOH ProcessDirector user ID probably does not exist on the new system yet.
- You can create a new administrator user to log in to the target system, but, if it exists on the source system, it is overwritten during migration.

To use the Migration Assistant:

- 1. Log in to RICOH ProcessDirector on the target system as the aiw user.
- 2. Click the **Administration** tab.
- 3. In the left pane, click **Utilities** → **Migration Assistant**.
- 4. Select IMPORT FROM ANOTHER SYSTEM.
- 5. Log in to the source system with an administrator user name and password.



- You must provide the full URL for the log in page of the source system.
- 6. On the **Verify** page, make sure all the information presented is correct and click **Continue**.
- 7. On the **Prepare** page, review the suggested actions to reduce the migration failure possibilities. For each step, you have the option to either complete or ignore it. Click **Save and Continue** to proceed with the migration.

For example, in this step, you can make sure that the **Product Update** features are installed on both systems at the same level. In the Feature Manager, find the **Product Update** feature for both systems and compare the values in the **Installed Version** column.

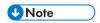
If the target system has a higher version, click the download button in the Migration
 Assistant to save the package to your system. Then you can install the Product Update using Import Package on the source system.

• If the source system has a higher version, find the most recent product update package in: /opt/infoprint/ippd/available. The name of the package is: ProductUpdate-3.4. version_number.epk. Download the package, then log in to the target system. Open Feature Manager, import the package, then install it.

For more information, see Adding or upgrading a feature using Import Package, p. 95.

8. On the **Features** page, click **CHECK FEATURES** to compare the features installed on the systems. To proceed, make sure that both the source and target systems have the same features installed.

If any features are missing, click **Save and Continue**. Review the features to install and click **OK**. Feature Manager opens so you can install the missing features. After the features are installed, log in to your RICOH ProcessDirector target system again and return to the **Migration Assistant**. When both systems contain the same features, click **Continue** to proceed with the migration.



- If you purchased one or more features for the first time, they exist on the target system only.
- If you worked with Ricoh's Advanced Solutions Practice to install additional functions on your source system, you must transfer those feature packages to your target system. Contact your Ricoh representative for assistance.
- 9. On the **Objects** page, select to migrate all objects from your source system or specific objects.

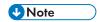
We recommend migrating all objects, but you can select which objects to migrate if you want to take this opportunity to remove some objects from your system. If you choose to selectively migrate objects, click the **Select objects** and choose the objects you want to migrate.

The **Migrate options** let you overwrite any identically named objects on the target system with the corresponding objects from the source system.

10. On the Settings page, select which previously configured system settings to migrate. These settings are configured in the Settings section of the Administration page. Choose the settings to import and click Save and Continue.

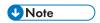


- System Identification properties cannot be exported with General System settings and must be created on the system where they are used.
- 11. On the **Files** page, select which eligible files from the aiw/aiw1/ directory to migrate. Choose the files to import and click **Save and Continue**.



- To easily identify all files that are eligible for migration on the target system, choose the **Selected files** option and then scroll through the list that appears.
- Files eligible for migration include customized files that you have added to the directory, such as control files, scripts, and AFP resources. In addition, files used by sample workflows and other sample objects are also eligible to migrate from the source system.
- Any files or folders with these special characters in their names: \ /: *?" <> | are not visible in the list of eligible files to migrate and therefore cannot be selected for migration.
- Non-UTF-8 characters cause errors in migration, including failure to migrate files entirely. The **Migration Assistant** reports success, but the files are not moved to the target system.
- Not all files in the /aiw/aiw1 directory are eligible for migration. For example, the spool files, hidden files, or symbolic link files cannot be migrated.
- 12. **Optional**: On the **Reports** page, select how to manage the migration of the Reports PostgreSQL database configuration and collected data.

Choose the correct options for your installation based on your answers to the questions in Planning for Reports database migration, p. 63.



• If you choose to continue using the existing database, Migration Assistant migrates only the settings for the Reports database. Migration Assistant adjusts the host name value as needed. For example, if the host name value on the source system is localhost, the value is converted to the full host name of the source system when it is imported to the target system.

If you are not ready to migrate your Reports settings or data, skip this migration.

- 13. Before proceeding with the migration process, review the configuration to import from the source system. If you need to change any choices, you can move to any step of setting up the migration elections by selecting **Edit**.
- 14. When everything is confirmed, click **START MIGRATION**.

The **Migration Assistant** starts to import objects and settings while displaying the progress. You can download the migration log file to review the details when any migration errors occur or the final version when the migration is complete.

During the migration, you can pause or cancel the import at any time.

If you cancel a data migration, the process stops after the cancellation request is processed. Upon cancellation, objects or files that were already migrated are reverted to their original versions from the target system. If the reverting process is unsuccessful, objects or files that were not successfully restored remain in their migrated state.

To manually return any objects or files on the target system to their original state, you can retrieve them from a snapshot or backup of the original system. Files on the target system are backed up before they are migrated. To restore files, you can find the backup versions in: %AIWDATA %/migrate/files-backup-<timestamp>.zip

- 15. Download the ZIP file log if there are any errors that you need to review.
- After you download the ZIP file, click X button at the top of the page to exit the MIGRATION ASSISTANT.



- You can click X in the upper right corner of the window followed by SAVE CHANGES to save the
 progress at anytime during migration. In this way, you can return to complete the migration process
 from where you left off.
- See Completing the upgrade process, p. 70 to complete the migration process.

Completing the upgrade process

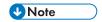
After you upgrade RICOH ProcessDirector, you must do a few more steps to make the transition easier.

If you upgraded on the same computer, the upgrade process converts your objects to versions that are compatible with the new RICOH ProcessDirector version. All your existing users and groups exist, so your users can log in using the same names and they have the same authority levels. When you log in, you see all of your printers, input devices, and other objects.

If you upgraded on a different computer, you should be able to log in and see all the objects that you imported. However, there are still some manual steps required to finish the migration process.

To complete the upgrade process:

- 1. If you upgraded to a different computer with Migration Assistant, take these actions:
 - 1. Re-enable any antivirus or security software that was disabled during the migration process.



- Do not remove the paths you added to the exceptions list in the antivirus software.
- 2. The Migration Assistant cannot import TLS configuration information; you must configure it on the new system again.

For more information, see Secure Sockets Layer and Transport Layer Security support, p. 37.

- 3. If you migrated your primary server from one operating system to another (especially from Windows to Linux or vice-versa), check and update all paths used in your workflow steps.
 - Make sure all directory paths are updated to the directory structure of the new system. If you are migrating from RICOH ProcessDirector AIX to Linux or Windows, this step is essential.
- 4. Review the log for any errors, including objects that failed to import.
 - Objects the use Private key credentials fail to import because the credentials do not exist. Recreate your private key credentials on the target system, then create those objects manually.
- 5. Restore any configuration or resource files that were not migrated by the Migration Assistant to the correct locations, so your jobs can find them.
 - If you stored any of these files outside of C:\aiw\aiw1, you must move them manually.
- 6. Recreate the visual mechanisms used to help distinguish one RICOH ProcessDirector from another. Use the **System identification** settings on the **System Settings** page to set a background color or configure a tab in the banner.
- 7. If you created a custom portlet on a RICOH ProcessDirector system prior to version 3.10.2, you cannot import it to a system with RICOH ProcessDirector version 3.12 or later. Create the custom portlet again on the target system.

- 8. If you use the RICOH Predictive Insight Connect feature, the Migration Assistant copied some settings, but cannot complete the connection process.
 - Refer to the procedure Setting up to send data to RICOH Predictive Insight, p. 115 to connect to RICOH Predictive Insight.
- 9. If you use custom document properties that were created in RICOH ProcessDirector prior to version 3.11.2, choose one of these options:
 - Copy C:\aiw\aiw1\config\docCustomDefinitions.xml to the target system and run the **docCustom** utility to activate the properties.
 - Manually migrate the document properties. On the target system, recreate your existing
 properties using the Custom properties page. See Creating and activating custom
 properties, p. for details.



- Custom document properties created in RICOH ProcessDirector 3.11.2 or later using the
 Custom properties page migrate just like other objects. No additional configuration is
 required.
- 10. If you use the Reports feature, verify that your Reports database is configured correctly and connected.
 - If you migrated data from your old Reports database to a new one, only data for data collectors that were enabled on the source system was imported. To collect data on the target system after the migration process, enable data collectors on the target system.
- 11. Before putting the new system into production, set the value for **Smallest job number** in **Administration** → **Settings** → **System** to synchronize your job numbering.
- 2. Before they log in for the first time, tell your users to clear their browser cache.

Information that is stored in the browser cache can cause errors when users try to use the newer level. Clearing the cache prevents those errors.

Backing up data

You can use a backup script to archive a copy of your RICOH ProcessDirector system configuration.

To back up RICOH ProcessDirector data:

- 1. Log in to the primary computer as an administrator.
- 2. Start a command prompt as an administrator. Even if you are logged on to your system as an administrator, you must start the command prompt by selecting **Run as administrator** from the right-click menu.
- 3. Enter C:\Program Files\Ricoh\ProcessDirector\bin\aiwbackup.bat with any of these options:
 - -f
 filename

 Back up data to a directory and file name other than the default, which is C:\aiw
 \aiw1\temp\aiw_backup_data.[timestamp].zip.
 - Do not make a backup image of the database. Use this option if the database is on a different computer.

Input files and job files (the files in the spool directory that contain job information, including copies of input files) are saved by default. A backup with the -r option does not save input files or job files, but it does save jobs. System data and control files are always saved.

- The -r option is slightly different on the aiwbackup and aiwrestore commands:
 - On aiwbackup, the -r option backs up the system without including input files or
 job files. It does not delete the jobs from the system.
 - On aiwrestore, the -r option restores the system without restoring jobs, input files, or job files.

If you use the -r option when you back up RICOH ProcessDirector, you should also use it when you restore the system to avoid restoring jobs whose files have not been saved.

-h or Display help for the aiwbackup command.

For example, this command saves data, including jobs, but not including input files or job files: C:\Program Files\Ricoh\ProcessDirector\bin\aiwbackup.bat -r

You see a message that all servers will be stopped, whether jobs and input files will be backed up, and the location of the backed up files.

4. Enter Y to proceed with the backup.

The backup runs in the background and might take several minutes to complete, depending on the number and size of files to be backed up. No status updates appear in the command prompt window, but the script is running. When it completes, you can see the backup file in C:\aiw\aiw1\temp.

Exporting media with electronic forms

To reuse media objects with electronic forms on another RICOH ProcessDirector system, you can export them by copying the media.zip file to another system. The **Export Objects** function exports media objects but does not export the electronic forms defined for media objects.

RICOH ProcessDirector creates a media.zip file whenever you define, edit, rename, or delete a media object.

To export media with electronic forms:

- 1. Log in to the primary computer.
- 2. Go to this directory:
 - /aiw/aiw1/share on Linux
 - C:\aiw\aiw1\share on Windows
- 3. Copy the media.zip file to the system that you are exporting the media to.
- 4. Log in to the RICOH ProcessDirector primary computer on that system and put the media.zip file in this directory:
 - /aiw/aiw1 on Linux
 - C:\aiw\aiw1 on Windows

5. Extract the media objects from the media.zip file.

Extracting the media objects:

- Puts a media.xml file in the same directory as the media.zip file.
- Adds all electronic forms defined for the media to this directory:
 - /aiw/aiw1/constantforms on Linux
 - C:\aiw\aiw1\constantforms on Windows

If the constant forms directory has another version of an electronic form, the file extraction process asks if you want to replace the form. For example, the constant forms directory could have copies of the sample forms installed with the Preprinted Forms Replacement feature.

- To extract only forms that are not on the system where you are importing the media objects, choose the option to replace none of the files.
- To replace all the forms on the system with the version of the forms in the media.zip file, choose the option to replace all the files.
- 6. Make sure that the RICOH ProcessDirector system user and group (aiw1 and aiwgrp1 are the defaults) have permission to read and modify these files and directories:
 - The constantforms directory
 - All electronic forms in the constant forms directory
- 7. Import the media objects:
 - 1. Click the **Administration** tab on the user interface of the system where you are importing the media objects.
 - 2. In the left pane, click **Utilities** \rightarrow **Import Objects**.
 - 3. Click File to Import.
 - 4. Go to this directory:
 - /aiw/aiw1 on Linux
 - C:\aiw\aiw1 on Windows
 - 5. Select the media.xm1 file.
 - 6. Select the media objects that you want to import.
 - 7. Optional: To make sure that you do not update media objects that exist, click **Deselect** existing objects.
 - 8. Click Import.

For more information about importing objects, see the related task for copying objects from another system.

Upgrading the PostgreSQL database version

When you upgrade RICOH ProcessDirector, you have the option of upgrading the PostgreSQL version during the RICOH ProcessDirector install program or manually, after the install program completes or at a later date.

To manually upgrade the embedded PostgreSQL version:

- 1. Make sure that your current PostgreSQL database and RICOH ProcessDirector system are backed up.
- 2. Log in to the primary computer as the system administrator that installed RICOH ProcessDirector.
- 3. Stop the RICOH ProcessDirector service.
- 4. Go to C:\Program Files\Ricoh\ProcessDirector\base\packages and locate the updatePostgresql-nnn.zip file, where nnn is the build number.



- The RICOH ProcessDirector documentation assumes that the product is installed in the default directory. If you chose a different installation directory, you must change the first part of the directory to match the installation directory that you choose.
- 5. Unzip the updatePostgresq1-nnn.zip file to a temporary location.
- 6. Go to the directory where you unzipped the file and find: updatePostgresql.ps1
- 7. Start a Windows PowerShell session and go to the directory where the ZIP file is unpacked. Type:
- ./updatePostgresql.ps1 --update



• At the end of installation process, the PostgreSQL database is updated to the latest version available and displays the message that the PostgreSQL database was successfully updated.

Upgrading the DB2 database

When you upgrade RICOH ProcessDirector, the version of DB2 database that is embedded in RICOH ProcessDirector is left at the same level. You can upgrade the DB2 database before you start the RICOH ProcessDirector install program or after the install program completes.

If all these statements are true, you can upgrade the DB2 database using the DB2 installation DVD or ISO file provided with RICOH ProcessDirector:

- Your current DB2 database and RICOH ProcessDirector system is backed up.
- The current installed version of the DB2 database is 10.1 or 10.5.
- You have the DB2 installation DVD or ISO file provided by Ricoh.

You can use scripts provided on the DB2 installation DVD or ISO file to upgrade the DB2 database before or after you install RICOH ProcessDirector.

If you manually upgrade the DB2 database before upgrading RICOH ProcessDirector, do not start RICOH ProcessDirector until you upgrade to the new version. Some older versions of RICOH ProcessDirector do not work with newer versions of the DB2 database.

Whether you are installing using a DVD or an ISO image, make sure that you can access the DB2 installation DVD or ISO file from the primary server. Complete these procedures as needed:

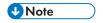
- Preparing the primary computer for installation, p. 80
- Downloading installation files, p. 82
 Make sure that you download both the RICOH ProcessDirector and DB2 ISO files.
- Installing from a remote directory, p. 83

To upgrade the DB2 database manually:

- 1. Verify that your system meets the requirements listed above.
- 2. Log in to the primary computer as the system administrator that installed RICOH ProcessDirector.



- Make sure the password for the administrator does not include the characters " or % or ^ or passwords that contain two \$. If the current password includes those characters, change the password before continuing.
- If you change the administrator password, you must also update the passwords for the following services:
 - DB2 DB2COPY1 AIWINST-0
 - DB2 Remote Command Server
 - DB2DAS DB2DAS00
 - DB2 Governor
- 3. Start a command prompt as an administrator. Even if you are logged on to your system as an administrator, you must start the command prompt by selecting Run as administrator from the right-click menu.
- 4. Go to the directory where the DB2 installation DVD or ISO file is located and type scripts/upgradeDB2.bat and press Enter to run the script.
- 5. Type the password for the system administrator and press **Enter**.



- It can take several minutes for the script to complete.
 When the script finishes, the command prompt returns: Successfully upgraded DB2.
- 6. Verify the DB2 database level on the system. In the command prompt, type db21eve1 and press **Enter**.

The command displays the current DB2 database level along with the install path and install date. If the installation was successful, the DB2 database level is 11.5.8.

- 7. Check the installation log for any errors. Go to C:\ and open upgradeDB2.log.
- 8. If you upgraded the DB2 database before upgrading RICOH ProcessDirector, continue with installing RICOH ProcessDirector.
- 9. If you upgraded the DB2 database after upgrading RICOH ProcessDirector, start RICOH ProcessDirector and log in to verify that the upgrade was successful.

Migrating data from DB2 to PostgreSQL

If you previously used RICOH ProcessDirector with DB2 and are migrating to the PostgreSQL database configuration, you must migrate your data from one database to the other after installing the update.

After the upgrade, RICOH ProcessDirector is still running on the DB2 database.



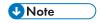
- This procedure assumes that you installed RICOH ProcessDirector in the default location. If you
 installed in a different location, paths to files and scripts must be adjusted to your installation.
 The default paths are:
 - %AIWPATH%: C:\Program Files\Ricoh\ProcessDirector
 - %AIWDATA%: C:\aiw\aiw1

To migrate your data from DB2 to PostgreSQL:

- 1. Log in to the primary computer using the RICOH ProcessDirector administrator account.
- 2. Open a command prompt as an administrator.

Even if you are logged on to your system as an administrator, you must start the command prompt by selecting **Run as administrator** from the right-click menu.

- 3. Make sure that you can access both the DB2 and PostgrSQL databases.
 - 1. Open the DB2 command window by typing: db2cw.bat
 - 2. To check for DB2, type in the DB2 command window: db2 connect to aiwdb
 - 3. To check for PostgreSQL:
 - In the Windows Control Panel, click **Administrative Tools**.
 - Find the PostgreSQL service and see whether it is running.
- 4. Prepare a migration directory.
 - 1. Create a temporary directory for the migration. For example, %AIWDATA%\tmp \migrateDb2ToPostgresq1.
 - 2. Open %AIWPATH%\base\packages.
 - 3. Copy migrateDb2toPostgresq1-version.zip to your temporary migration directory and unzip.
- Run the migration tool.
 - 1. Stop the RICOH ProcessDirector service.

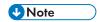


If the service is already stopped, start and then stop the service to ensure PostgreSQL is running. See Starting and stopping the RICOH ProcessDirector service, p. 121 for more information.

2. Open a command prompt as an administrator. Run ippdprofile and type the script name: migrateDb2ToPostgresql.pl.

The migration starts by restarting the activation to create tables in the PostgreSQL database. Activation status messages are displayed.

When the activation is complete, the script runs the migration. As the migration script runs, you should see status messages such as: Migrating table <tablename>



- Additional log messages are written to %AIWPATH%\logs\installer\react-logs.log and %AIWPATH%\logs\installer\migrateDb2ToPostgresql.log.
- If you see error messages during the migration, see Troubleshooting data migration errors, p.
 77
- 6. Restart the RICOH Process Director service to apply the changes.

See Starting and stopping the RICOH ProcessDirector service, p. 121 for more information.

7. Log in to RICOH ProcessDirector. All objects and jobs should now appear on the **Main** page.



- You can see extra jobs in the system if sample input devices are enabled while the migratingDb2ToPostgresql.pl script runs. The script reactivates and submits jobs to the sample input devices.
- 8. After you verify everything, proceed with uninstalling the DB2 database.
- 9. To uninstall DB2:
 - Click the Windows Start button and type services to search for the Services App. Open the Services App, then find DB2 - DB2COPY1 - AIWINST-0 and check the status. If it is running, stop this service.
 - 2. Start a command prompt as an administrator. Even if you are logged on to your system as an administrator, you must start the command prompt by selecting **Run as administrator** from the right-click menu.
 - 3. To open the DB2 command window, type: db2cw.bat
 - 4. Enter these commands in the DB2 command window to delete the aiwinst instance:

```
cd %AIWPATH%
cd db\BIN
db2idrop aiwinst
```

- 5. Click the Windows Start button and type Apps & features to find the installed apps. Look for the **DB2 Server Edition DB2COPY1** and uninstall it.
- 6. Remove the following directories if they exist:

```
Install_drive:\AIWINST
%AIWDATA%\db2_logs
```

10. Continue with Completing the upgrade process, p. 70.

Troubleshooting data migration errors

If you see errors when migrating data from DB2 to PostgreSQL, check the following:

Unable to connect to the DB2 database.

Make sure that DB2 is running and that you can connect to it. To check for DB2 database enter: db2 connect to aiwdb

If no connection info is returned, enter: db2start and check the status again.

Unable to connect to the PostgreSQL database.

Make sure that PostgreSQL database is running.

To check for PostgreSQL database, in the Windows Control Panel, click **Administrative Tools**. Find the PostgreSQL service and see whether it is running.

Table {0} was not found in the PostgreSQL database.

If you see this message and you find that there are missing objects or configurations on the server, contact Software Support. It is normal for some tables to be removed if they are no longer used.

Table {0} was not found in the DB2 database.

Tables might be missing be due to the installation of additional features.

Failed to migrate table {0} because of {1}

Try to migrate the table again by running ./migrateDb2ToPostgresq1.pl -t <tablename> script. If the table migration fails again, contact Software Support for assistance.

Unable to read the list of tables for migration.

Contact Software Support for further assistance.

Invalid configuration file: System.database.cfg

Check the file permissions for the System.database.cfg file. Type: 1s -1 \$AIWDATA/config/System.database.cfg and compare the output to this: -rwxrwxr-x

If they do not match, update the permissions as needed. Otherwise, contact Software Support for further assistance.

Unable to remove the DB2 license because of {0}

The DB2 file could not be cleaned. This error can be ignored as uninstalling DB2 results in cleaning the file.

4. Installing

- Task checklist
- Preparing the primary computer for installation
- Disabling User Account Control
- Downloading installation files
- Installing from a remote directory
- Installing the base product
- Troubleshooting installation errors

When you order RICOH ProcessDirector and request physical discs, you receive one or more installation discs.

If you do not request discs or if you want to install before the physical disc arrives, you can download ISO images from the Ricoh Production Print website: https://dl.ricohsoftware.com/. To download the software, follow the instructions in Downloading installation files, p. 82.

The discs or the ISO files include:

- One that holds the base product. This DVD or ISO file includes installers for trial versions of the features that can be installed using Feature Manager.
- DVDs and CDs that hold supplied fonts. See Supplied fonts, p. 56.
- If you purchased any of the Ricoh Transforms, DVDs or ISO files that hold the installers for each transform.

- 1. RICOH ProcessDirector is installed in trial mode. After you install, you can download and install license keys for the features that you have purchased. See Downloading and installing license keys, p. 101 for more information.
- 2. During the installation, Windows might display security windows prompting you to run or cancel a program. Click **Run**.
- To migrate your objects from a primary server running on one operating system to a primary server running on a different operating system, follow the instructions in Running the Migration Assistant, p. 67 after installing RICOH ProcessDirector.
- 4. RICOH ProcessDirector is not guaranteed to work with third party products installed on the server, such as antivirus programs and network sniffers. Such programs may affect ports or files which are needed for RICOH ProcessDirector to function normally.

Task checklist

Here are the tasks you need to complete in this chapter. Check each item as you complete the task.

Checklist for completing installation tasks

Task
Preparing the primary computer for installation, p. 80
Use this procedure to make sure that you are ready to run the installation program.
Optional: Downloading installation files, p. 82
If you do not have installation discs, use this procedure to download ISO images of them.

Task
Optional: Installing from a remote directory, p. 83
You can use a remote directory to install RICOH ProcessDirector without using a DVD. You can use a DVD drive on a different computer to copy the installation programs into the remote directory on your network. The remote directory holds the installers so you can access them from the computers that you want to install RICOH ProcessDirector on. The remote directory can be located on the computer that you plan to install RICOH ProcessDirector on.
Installing the base product, p. 84
Use this procedure to install RICOH ProcessDirector.
Troubleshooting installation errors, p. 87
If you have trouble installing RICOH ProcessDirector, you can find information in the installation logs.

Preparing the primary computer for installation

When you are ready to install RICOH ProcessDirector, use this procedure to make final configuration updates and verify that the system configured correctly.



• If you are using a copy of PostgreSQL installed on the local computer or on a different computer instead of the PostgreSQL version included with RICOH ProcessDirector, make sure that you complete Configuring your own PostgreSQL database, p. 45 before you start this procedure.

To prepare the primary computer:

- 1. Make sure that the planning checklist is complete and the required hardware and software are available and installed. See Planning for installation, p. 29.
- Log in using the administrator account that was created for RICOH ProcessDirector to run under when you prepared the Windows system. This account should not be attached to a specific person.

You must sign in using this account each time you install updates. If you are using a particular person's User ID and that person leaves your department, you might lose the ability to install updates, start and stop the RICOH ProcessDirector service, and do other administrative tasks.



- The administrator user ID cannot contain spaces in the name.
- Make sure the password for the administrator does not include the characters " or % or ^ or passwords that contain two \$. If the current password includes those characters, change the password before continuing.
- 3. Optional: If you plan to run RICOH ProcessDirector with DB2 as its database, verify that DB2 is not already installed on the system. RICOH ProcessDirector installs its own version of DB2 and you cannot have two versions installed.

4. **Optional**: If you plan to use an instance of PostgreSQL installed on a different computer as the RICOH ProcessDirector database, verify that the PostgreSQL server or client is installed on the primary computer.

The PostgreSQL server or client must be at the same level as the PostgreSQL database that you plan to use with RICOH ProcessDirector.

- If neither the PostgreSQL server nor the client is installed, you must install one of them.
- If a PostgreSQL server or client is already installed, check its version:
- 1. Open a command line and change directories to where PostgreSQL is installed.
- Enter this command to view the client version: psql -v
- 3. Enter this command to view the server version: postgres V

If both versions match, continue installing RICOH ProcessDirector. If the versions do not match, update PostgreSQL before you continue.

5. Disable your antivirus software.

During the install process, various archive files (ZIP, JAR, and EPK files) are copied to your server. Then, the contents are extracted and moved to the correct directories on your system. Antivirus tools usually lock and scan files extracted from archives.

While the lock and scan process is generally fast, the installation program runs faster. If the installer tries to unpack and move files before the scan is complete, installation errors occur and can be difficult to recover from. Disabling your antivirus software during the install process prevents these types of errors.



- Microsoft Defender Firewall and Microsoft Defender Antivirus are separate programs. You
 must disable Microsoft Defender Antivirus. Turning off Microsoft Defender Firewall does not
 prevent the installation issues described.
- Microsoft Defender Antivirus must be disabled; passive mode is not sufficient to prevent install errors
- 6. Set up exceptions within your antivirus software.

If you cannot deactivate your antivirus software entirely, excluding some directories from scans can reduce the possibility of installation errors. In addition, most antivirus software affects the function of databases. The software sometimes quarantines files that databases use, causing operation errors. Setting up these exclusions now prevents those errors after RICOH ProcessDirector is installed.

Set up exceptions for these paths:

- C:\aiw\aiw1
- C:\Program Files\Ricoh\ProcessDirector
- If you plan to use DB2 as your database:
 - C:\AIWINST
 - C:\ProgramData\IBM

- If you use a custom feature that integrates BCC software with RICOH ProcessDirector:
 - C:\BCC
- 7. Update the domain group policies and domain security policies for Windows to prevent the database and RICOH ProcessDirector from being uninstalled.

Disabling User Account Control

Some Windows User Account Control settings can interfere with the installation process for RICOH ProcessDirector. You must disable those settings before you start the installation program. When the installation is complete, you can enable them again.

To disable your User Account Control settings:

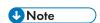
- 1. Open the Windows Control Panel.
- 2. Click User Accounts → User Accounts.
- 3. Select Change User Account Control settings.
- 4. Record the setting in **User Account Control settings** so you can restore the setting later.
- 5. Change the setting to the lowest value, Never notify.
- 6. Reboot the primary computer for the new settings to take effect.
- Continue with Installing the base product, p. 84.
 After RICOH ProcessDirector is installed, you can reset the User Account Control settings to the value you recorded.

Downloading installation files

If you do not have installation discs, use this procedure to download ISO images of them.

To download installation files:

- 1. In a web browser, open this page: https://dl.ricohsoftware.com/
- 2. Click Software Downloads, enter your Entitlement ID, and click Submit.
- 3. Under Product Downloads in this EID, click the title of each ISO file listed to download it.



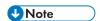
- For information about using ISO files to install software, click Working with ISO files on the right side of the webpage.
- All RICOH ProcessDirector features are included in the base product except for the RICOH Transform features.
- 4. If you need to install a Ricoh Transform feature, click the feature and save its ISO file to your computer.
- 5. If you need to install one of the supplied font sets:
 - 1. Click View Related Files on the right side of the page.
 - 2. Scroll to the bottom of the downloadable packages list to find the font collections.
 - 3. Click the title of each font collection to download the ISO file.

6. After each file downloads, validate its MD5 checksum to the value shown on the webpage. Use this command, substituting the name of the file for *ProductUpdate.iso*:

certutil -hashfile ProductUpdate.iso MD5

If the checksum does not match, download the file again.

7. **Optional:** Burn the base product ISO file onto a blank dual-layer DVD. Burn each other ISO file onto its own blank CD or DVD. Windows supports mounting ISO files, so this step is not required.



CD and DVD burning programs can burn files in a variety of formats, including data, video, and audio. If you decide to create a DVD, choose the option for burning an ISO image. The options for burning data do not create a DVD or CD that you can use to install the software.

You are now ready to use the installation program to install RICOH ProcessDirector.

- If you want to install from a DVD drive on the primary computer, continue with Installing the base product, p. 84.
- If you want to mount the ISO files, copy the files to the system where you plan to install RICOH
 ProcessDirector. Right-click the base product ISO file and choose Mount. Continue with Installing
 the base product, p. 84.
- If you want to copy the installers to a staging location on this computer or somewhere else on your network, continue with Installing from a remote directory, p. 83.



We recommend keeping your entitlement ID in a safe place for further use. It is useful when you
need to download product updates or any other packages. To find more information about
downloading product update packages, see Downloading and installing update packages, p. 119.

Installing from a remote directory

You can use a remote directory to install RICOH ProcessDirector without using a DVD. You can use a DVD drive on a different computer to copy the installation programs into the remote directory on your network. The remote directory holds the installers so you can access them from the computers that you want to install RICOH ProcessDirector on. The remote directory can be located on the computer that you plan to install RICOH ProcessDirector on.

The remote directory must have enough free space to hold the installers you want to store. We recommend having at least 7 GB of space in the remote directory for each installer. If you have installers for two operating systems in the same staging area, we recommend having at least 14 GB of space in the remote directory.

To install from a remote directory:

- If you plan to copy the installation programs from a DVD drive on the same computer as the
 remote directory, continue with the next step. If you plan to copy the installation programs from a
 DVD drive that is not on the computer that holds the remote directory, map a network drive from
 the remote directory to the computer with the DVD drive.
- 2. Copy the installers to the remote directory:
 - 1. Log in to the computer that you want to create the remote directory on.
 - 2. Insert the base product DVD in the drive.

If the autorun feature of Windows is enabled, the installer starts automatically. Click **Cancel** to close the installer.

- Open Windows Explorer and go to the DVD drive, so you can see the contents of the CD or DVD.
- 4. Double-click mk remote.exe.

An installer starts.

5. In the installer, choose a directory to store the product installers in.

This is the remote directory. The default directory is C:\Ricoh.

- 6. When the installer finishes, eject the CD or DVD.
- 7. When you finish moving all the installers, you can go to the remote directory to verify that the installers have been copied correctly.

You should see two application files (mk_remote.exe and setup.exe) and a directory named **windows**.

- 3. Share the directory that you created so other computers can access the installers.
- 4. Access the installers from the computer that you want to install RICOH ProcessDirector on:
 - 1. Log in to the computer that you want to install the base product on.
 - 2. If the remote directory is on a different computer, map a network drive to the remote directory.
 - 3. Go to the remote directory.

 If the autorun feature of Windows is enabled, the installer starts automatically. If autorun is not enabled, double-click setup.exe.
 - 4. Choose the software that you want to install and click **Install**.
- Follow the instructions in Installing the base product, p. 84 to complete the installer.

Installing the base product

Before you begin, make sure that you have verified all the prerequisites for your configuration as listed in Planning for installation, p. 29 and Preparing the primary computer for installation, p. 80.



• During the installation, the RICOH ProcessDirector license files are copied to the C:\Program Files\Ricoh\ProcessDirector\base\license directory.

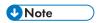


• After you verify all the prerequisites, click **Cancel** to change a previous entry and begin the installation process again. Clicking the **Previous** button sometimes causes problems.

To install the base product:

 Log in using the administrator account that was created for RICOH ProcessDirector to run under when you prepared the Windows system. This account should not be attached to a specific person. You must sign in using this account each time you install updates. If you are using a particular person's User ID and that person leaves your department, you might lose the ability to install updates, start and stop the RICOH ProcessDirector service, and do other administrative tasks.

If that account does not exist, create it and then log in to that account.



- The administrator user ID cannot contain spaces in the name.
- Make sure the password for the administrator does not include the characters " (double
 quote) or % (percent sign) or ^ (carat) or passwords that contain consecutive \$ (dollar signs).
 If the current password includes those characters, change the password before continuing.
- 2. Insert the base product DVD or double-click the ISO file.
 - If you use a DVD and the autorun feature of Windows is enabled, the installer starts automatically. If the installer does not start, open Windows Explorer and go to the DVD drive.
- 3. Double-click setup. exe. The installer starts.
- Select the appropriate language for the installer to use and click OK.
- 5. Select to install the base product.
- 6. After installing the base product, another installer starts and displays the **Introduction** window. Follow the instructions in the installer, clicking **Next** on each window after you fill in required information.
- 7. Choose a directory to install RICOH ProcessDirector in. The default installation directory is C: \Program Files\Ricoh\ProcessDirector.



- You can choose another directory on the C: drive or a directory on another drive. However, you cannot choose a directory with international characters (such as á, É, î, ñ, ô, ß) or double-byte characters anywhere in the directory path.
 - If you choose the default directory or another directory (on any drive) with spaces anywhere in the directory path, the installer tries to enable 8dot3 filename generation for the drive. If 8dot3 filename generation is disabled on your system, the installer cancels the installation.

The RICOH ProcessDirector documentation assumes that the product is installed in the default directory. If you choose a different installation directory, many directories that are mentioned in the documentation are not correct; you must change the first part of the directory to match the installation directory that you choose.

- 8. The installer verifies many of the prerequisites for the system. If it finds any problems, it lists them for you. Click **Cancel** to close the installer and fix the problems, then start the installer again.
- 9. Review and accept the license and maintenance agreements.
- 10. Enter the password for the administrator user ID that you logged in with.
- 11. Choose the database that you want to use with RICOH ProcessDirector.
 - PostgreSQL included with RICOH ProcessDirector. Continue with step 14.
 - PostgreSQL installed separately. Continue with step 12.
 - IBM DB2 included with RICOH ProcessDirector. Continue with step 13.



- If you are upgrading an existing system and plan to migrate your data from DB2 to PostgreSQL, you must migrate your data after the installation completes.
- 12. Set up the remote PostgreSQL database server connection:

PostgreSQL server address or host name

Specify the IP address or the host name of the server where PostgreSQL is installed.

PostgreSQL binary path

Specify the location of the PostgreSQL bin directory. On Windows, the default binary path is C:\Program Files\<version_number>\bin and on Linux, the default binary path is /usr/<version_number>/bin, where <version_number> is the PostgreSQL database version installed.

PostgreSQL user name

Specify the user name for the owner of the PostgreSQL database.

PostgreSQL password

Specify the password for the owner of the PostgreSQL database.

PostgreSQL port number

Specify the port number used to communicate with the PostgreSQL database. The default value is 5432.

- 13. If you choose IBM DB2 included with RICOH ProcessDirector:
 - 1. Click **Next**.
 - 2. In the next window, click **Choose** to select the installation disc or ISO file location.
 - 3. In the **Browse for folder** dialog, select the root folder for the DB2 installation disc or ISO file and click **OK**. For example, if the DB2 installation disc or ISO is mounted on drive F:\, browse or enter F:\.
 - 4. Click **Next** to continue with the installation.

If the path was incorrect or the DB2 installer was not located, click **Previous** to go back or **Next** or **Cancel** to exit the installation.

- 14. Review the pre-installation summary and click **Install** to start installing.
- 15. If a window appears with a warning about file security, you must click **Run** to continue the installation.
- 16. Click **Done** to complete the installation.
- 17. Choose the option to restart the computer and complete the installation process.
- 18. If you installed from a DVD, eject the disc.
- 19. If you see error messages, view the installation logs in the C:\Program Files\Ricoh\ProcessDirector/logs directory and contact Software Support.
- 20. If you are installing on a Windows system that is running in French or Brazilian Portuguese and you are using DB2 as the database, do this step.

RICOH ProcessDirector uses the **LocalSystem** user ID for many database functions. If you install on a Windows system that is running in French or Brazilian Portuguese, the LocalSystem user ID contains international characters. DB2 does not support user IDs that include international characters, so the RICOH ProcessDirector service cannot start. RICOH ProcessDirector must be configured to use a different user ID for DB2, such as the administrator user ID that was used for the installation process.

To configure RICOH ProcessDirector to use a different user ID for DB2:

Open the file C:\aiw\aiw1\config\System.database.cfg in a text editor. Remove the # sign at the beginning of the last two lines in the file (for userid= and password=) to uncomment the lines.

Change the userid= line so that the value to the right of the = sign is the username that you used to install RICOH ProcessDirector. For example, if you installed on a Brazilian Portuguese system using the default account **Administrador**, change the line to: userid= Administrador



- The userid cannot include international characters.
- 2. Open a command prompt. Type: ippdprofile.cmd and press Enter.
- 3. Type: java com.ibm.aiw.primary.database.PwSetter administrator password and press Enter, replacing administrator password with the password of the administrator account used to install RICOH ProcessDirector.

This command updates the System.database.cfg file.

4. If you change the administrator password, you must run these commands again. You must also update the passwords for the following services:

DB2 - DB2COPY1 - AIWINST-0

DB2 Remote Command Server

DB2DAS - DB2DAS00

- 5. Start the RICOH ProcessDirector service.
- 21. If you have features to install, follow the instructions in Installing features, p. 92
- 22. Continue with Logging in for the first time, p. 91.



Your software installs in trial mode. The trial license expires after 60 days. For more
information about obtaining and installing license keys, see Downloading and installing
license keys, p. 101.

Troubleshooting installation errors

If you have trouble installing RICOH ProcessDirector, you can find information in the installation logs.

The installer logs information in these directories:

- C:\Program Files\Ricoh\ProcessDirector\logs
- C:\Program Files\Ricoh\ProcessDirector\logs\installer

• C:\tmp

If the installation fails with a DB2 error, check the password that you entered for DB2 (the same password that you use for the Windows user that installed RICOH ProcessDirector). If the password includes the characters " or ^, change the password to eliminate those characters. Then, use db2services to enter the new password manually.

5. Completing post-installation tasks

- Task checklist
- Configuring to use IPv6 addresses
- Logging in for the first time
- Verifying the installation
- Deleting temporary installer files
- Installing features
- Downloading and installing license keys
- Installing the Transform Feature license keys
- Configuring RICOH ProcessDirector
- Scheduling automatic maintenance
- Tuning Java memory allocation
- Replacing your control files with the sample files
- Copying objects from another system
- Installing and configuring the pdpr script
- Setting up to use LDAP authentication
- Communicating between RICOH ProcessDirector and the LDAP server
- Setting up to send data to RICOH Predictive Insight
- Installing a RICOH ProcessDirector product update

After you finish installing RICOH ProcessDirector, you complete post-installation tasks.

Task checklist

Here are the tasks you need to complete in this chapter. Check each item as you complete the task.

Checklist for completing post-installation tasks

Task
Configuring to use IPv6 addresses, p. 90
You can use IPv6 addresses for the primary server and some of the other IP addresses in RICOH ProcessDirector.
Logging in for the first time, p. 91
After you finish the installation process and restart the system, log in to RICOH ProcessDirector using a web browser on the primary computer or a workstation in your network.
Verifying the installation, p. 91
If you have finished installing RICOH ProcessDirector and want to verify the installation, use this procedure to enable the Sample printer, submit a test job to the HotFolderPDF input device, and process the job.
Optional: Deleting temporary installer files, p. 92
If a folder named C:\aiwtmp remains on your system after the RICOH ProcessDirector installer has finished an installation, you can delete that folder and all its contents.
Installing features using Feature Manager, p. 93
After you install the base product, you can install features using the Feature Manager.

Task
Downloading and installing license keys, p. 101
If you have purchased RICOH ProcessDirector, RICOH ProcessDirector Subscription, or any feature, use this procedure to download license keys and install them.
Configuring RICOH ProcessDirector, p. 104
You use the user interface to complete configuration tasks for RICOH ProcessDirector, such as setting up job processing, defining input devices for job submission, defining your printer hardware to RICOH ProcessDirector, and adding users. The RICOH ProcessDirector information center describes these configuration tasks.
Scheduling automatic maintenance, p. 104
RICOH ProcessDirector provides maintenance scripts that must be run regularly on the primary computer to improve performance. By default, RICOH ProcessDirector runs these scripts every day at midnight. You can change the time or frequency, and you can run your own maintenance scripts at the same time.
Optional: Replacing your control files with the sample files, p. 106
When you install a new version of RICOH ProcessDirector, the installer automatically adds new sample control files to the C:\aiw\aiw1\samples directory and copies them to your control files directory, C:\aiw\aiw1\control_files. It does not overwrite any of your customized control files in C:\aiw\aiw1\control_files. You can use the copyConfigurationFiles script to install the default control files or to overwrite your customized control files.
Optional: Copying objects from another system, p. 107
To reuse objects from another RICOH ProcessDirector system, you can use the other system to export them. On this RICOH ProcessDirector system, you can import the objects rather than recreating them manually.
Optional: Installing and configuring the pdpr script, p. 109
If you are migrating from InfoPrint Manager and you use the pdpr command to submit jobs, you can install the RICOH ProcessDirector pdpr script on the computers that submit jobs and use the same command to send jobs to RICOH ProcessDirector.
Optional: Setting up to use LDAP authentication, p. 111
If you have an existing LDAP or Active Directory server, you can use LDAP or Active Directory user names and passwords to authenticate into RICOH ProcessDirector.

Configuring to use IPv6 addresses

You can use IPv6 addresses for the primary server and some of the other IP addresses in RICOH ProcessDirector.

To configure to use IPv6 addresses:

- 1. Log in to the primary computer as the user that RICOH ProcessDirector runs under.
- 2. Open C:\aiw\aiw1\config\jvmsettings.cfg in a text editor.

- 3. Find all lines that contain preferIPv4Stack=true.
- Change true to false: preferIPv4Stack=false
- Save the file.
- 6. Reboot the system or restart the RICOH ProcessDirector service.

Logging in for the first time

After you finish the installation process and restart the system, log in to RICOH ProcessDirector using a web browser on the primary computer or a workstation in your network.

- 1. Start a web browser.
- Enter this URL replacing hostname with the host name of the primary computer: http://hostname:15080/pd
- 3. On the login page, type the default administrator user ID aiw and the default password aiw and then click **Log in**. You are prompted to change the password before you can log in to the user interface. Make note of your new password on the Installation planning checklist, p. 125.
- 4. If the browser page is blank after a full minute, first try to refresh the browser. If you still do not see the login page, you might need to stop and restart the RICOH ProcessDirector service.
- 5. If you see a message that the browser cannot connect to the primary server:
 - 1. Stop and restart the RICOH ProcessDirector service. See Starting and stopping the RICOH ProcessDirector service, p. 121.
 - 2. If you still see the message, view the installation logs in the C:\Program Files\Ricoh\ProcessDirector\logs directory.

Verifying the installation

If you have finished installing RICOH ProcessDirector and want to verify the installation, use this procedure to enable the Sample printer, submit a test job to the HotFolderPDF input device, and process the job.

This verification procedure only applies to new installations. When you upgrade an existing installation, RICOH ProcessDirector does not create a Sample printer.

To verify the installation:

- 1. If you are not logged in to the RICOH Process Director user interface, log in.
- 2. In the Printers portlet, right-click the **Sample** printer and select **Enable**.
- 3. Using the Windows command line or Windows Explorer, copy the Demo.pdf file into the hot folder that the HotFolderPDF input device monitors. Demo.pdf is located in C:\aiw\aiw1\testfiles. By default, the hot folder is C:\aiw\aiw1\System\hf\defaultPDF.
- 4. Wait a few seconds for the RICOH ProcessDirector user interface to refresh. If it does not refresh automatically, refresh your browser. You should see a job in the Jobs table on the Main page. The job's Phase should be **Complete**, and its State should be **Retained**.
 - If you do not see a job, see the "Job not appearing in Jobs table" troubleshooting topic in the RICOH ProcessDirector information center. Click **Help** () from the top banner of the RICOH ProcessDirector user interface to see the information center.

 Right-click the job and select View Log. The log should show that the job printed. For example, if the job ID is 10000000, the log should show message AIWI0016I: 10000000 printed. The job does not print on a real printer.

This verifies that RICOH ProcessDirector is installed correctly.

The PDF workflow processes jobs that are submitted to the HotFolderPDF input device. During the Prepare phase, the workflow runs a RunExternalProgram step. This step is an example of how you can integrate other programs into your workflow. The step produces a CSV file with information about the job. To see the type of information that you can access with a step in a workflow, look at the output in the CSV file. The file is in the C:\aiw\aiw1\samp1es directory. The file name is the job ID followed by info.csv. For example, 10000000.info.csv.



• Your software installs in trial mode. The trial license expires after 60 days. For more information about obtaining and installing license keys, see Downloading and installing license keys, p. 101.

Deleting temporary installer files

If a folder named C:\aiwtmp remains on your system after the RICOH ProcessDirector installer has finished an installation, you can delete that folder and all its contents.

If the installer creates the C:\aiwtmp folder, it also deletes it. However, if you create C:\aiwtmp before starting the installer, the installer does not remove this folder. If any errors occur during the installation, files might be left in this folder, which can now be removed.

To delete the temporary installer files:

- 1. Log in to Windows as an administrator.
- 2. Locate your installation directory in Windows Explorer.
- 3. If you see the C:\aiwtmp folder, delete it and all its contents.

Installing features

After you install RICOH ProcessDirector or RICOH ProcessDirector Subscription, you can add features at any time.

You install most features using the Feature Manager, available on the Administration tab.

The RICOH Transform features cannot be installed using the Feature Manager. See Installing RICOH Transform features, p. 99 for instructions.

All features are installed in trial mode. To continue using a feature after the trial period, you
purchase the feature and install a license key for it. See Downloading and installing license keys, p.
101 for more information.

To see whether a feature is running in trial mode and how many days remain for each feature in trial mode, go to the Licenses page of the Administration tab and look at the **License state** column.

- The maintenance license for RICOH ProcessDirector includes maintenance for features. They do not have separate maintenance licenses.
- Licenses for the RICOH ProcessDirector Subscription base product and its features expire when the base product subscription period is over.
- If you intend to install the AFP Support feature, we recommend that you install it before or at the same time as your other features. If you install features that process documents (such as Archive) before you install AFP Support, RICOH ProcessDirector does not install the AFP versions of sample workflows supplied with those features.
- The PDF Document Support feature has a two-part installation process. You install the RICOH ProcessDirector components on the primary computer using the Feature Manager. You install RICOH ProcessDirector Plug-in for Adobe Acrobat on a computer with Adobe Acrobat Pro installed.
- When you install RICOH ProcessDirector, some configuration files in C:\aiw\aiw1\control_
 files\external programs are used by both the RICOH Transform and the Advanced Transform
 features. However, the Advanced Transform features supply a different sample version of the
 xform.cfg. That sample file includes parameters that are only used by the Advanced Transform
 features.

After you install the Advanced Transforms, you must make those parameters available. Find the xform.cfg installed by the Advanced Transform features in C:\aiw\aiw1\samples\control_files\external programs. Compare it to the one installed by the base product in C:\aiw\aiw1\control_files\external programs. Manually merge any changes from the sample file into the base product file.

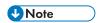
If you are upgrading to a newer version, update the xform.cfg file as well as the profiles installed in C:\aiw\aiw\cpt\profiles, such as mffafp.pro.

Installing features using Feature Manager

After you install the base product, you can install features using the Feature Manager.

To install one or more features using Feature Manager:

1. On the primary computer, temporarily disable any antivirus software that is running.



- Microsoft Defender Firewall and Microsoft Defender Antivirus are separate programs. You
 must disable Microsoft Defender Antivirus. Turning off Microsoft Defender Firewall does not
 prevent the installation issues described.
- Microsoft Defender Antivirus must be disabled; passive mode is not sufficient to prevent install errors.

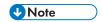
- 2. Verify that exceptions are still set in your antivirus software to exclude the directories listed from antivirus scans.
 - C:\aiw\aiw1
 - C:\Program Files\Ricoh\ProcessDirector
 - If you use DB2 as your database:
 - C:\AIWINST
 - C:\ProgramData\IBM
 - If you use a custom feature that integrates BCC software with RICOH ProcessDirector:
 - C:\BCC
- 3. If you have any RICOH Transform features installed, shut down the Transform Features application.
- 4. Log in to RICOH ProcessDirector as a user authorized to use Feature Manager.
- 5. Click the **Administration** tab.
- 6. In the left pane, choose **Utilities** → **Features**.

Some browsers might prevent opening the Feature Manager in a new tab due to the pop-up blockers. Verify your settings and allow Feature Manager to open in a new browser tab.

If you see an error message, you must start Feature Manager manually:

- 1. Log in to the Windows primary computer as an administrator.
- 2. Click the Windows Start button.
- 3. Type services to search for the Services App.
- 4. Click the Services App.
- 5. Right-click the Feature Manager Service and select **Restart**.
- 6. Refresh the Feature Manager webpage.
- 7. If the feature that you want to install is not listed, you must import it. See Adding or upgrading a feature using Import Package, p. 95 for details about importing the feature package.
- 8. If the feature that you want to install is in the list, select the check box next to it.
- 9. In the **Available versions** column for each feature, select the version of the feature you want to install.
- 10. Click Install.
- 11. Review the information in the confirmation window, specify a name for the **Installation display name**, then click **OK** to continue.

The features are installed, then RICOH ProcessDirector restarts to finish the install process.

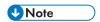


If one or more features fail to install, choose one of these options:

- Click Try again to retry the installation. If the install fails a second time, click Restore this Installation to return to a stable state.
- Click **Restore this Installation** to revert the system to the state it was in before this installation.

If you cannot install a particular feature or restore an installation, contact Ricoh Software Support.

12. Click **DISMISS**. The dialog closes and you see the login page.



You might find that RICOH ProcessDirector is running in two browser tabs. If it is, close one of the tabs

- 13. To complete the installation process, clear your browser cache.
 - Information that is stored in the browser cache can cause errors when you try to use the newer level. Clearing the cache prevents those errors.
- 14. Log in again.
- 15. If you shut down the Transform Features application, restart it.
- 16. Enable any antivirus software that you disabled.

Adding or upgrading a feature using Import Package

You can use Feature Manager to add a new feature or upgrade an existing feature by downloading a feature package file, either from the Ricoh website or from a feature DVD, and then using the **Import Package** action.

You must save the feature package file to a location that can be accessed from the primary computer.

If you download the feature package file from the Ricoh website, save it to a location that is accessible from RICOH ProcessDirector. This location can be on the primary computer, a workstation, or a network drive. Remember where you save the file so that you can browse to it from RICOH ProcessDirector. Additionally, you must extract the file in that location so the EPK file within the downloaded file can be seen.

If you receive the feature package file from a DVD, you need to locate the file on the DVD, copy it from the DVD onto the primary computer, and remember where you put it so you can browse to it.

To import a feature package using Import Package:

1. On the primary computer, temporarily disable any antivirus software that is running.



- Microsoft Defender Firewall and Microsoft Defender Antivirus are separate programs. You
 must disable Microsoft Defender Antivirus. Turning off Microsoft Defender Firewall does not
 prevent the installation issues described.
- Microsoft Defender Antivirus must be disabled; passive mode is not sufficient to prevent install errors.
- 2. Verify that exceptions are still set in your antivirus software to exclude the directories listed from antivirus scans.
 - C:\aiw\aiw1
 - C:\Program Files\Ricoh\ProcessDirector
 - If you use DB2 as your database:
 - C:\AIWINST
 - C:\ProgramData\IBM
 - If you use a custom feature that integrates BCC software with RICOH ProcessDirector:
 - C:\BCC
- 3. If you have any RICOH Transform features installed, shut down the Transform Features application.
- 4. Log in to RICOH ProcessDirector as an administrator or other user with authority to import packages.
- 5. In the left pane, choose **Utilities** → **Features**.

If you see an error message, you must start Feature Manger manually:

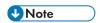
- 1. Log in to the primary computer using the RICOH ProcessDirector administrator account.
- 2. Click the Windows Start button, type services to search for the Services App, and click the Services App.
- 3. Right-click the Feature Manager Service and select **Restart**.
- 4. To complete the process, clear your browser cache.
 - Information that is stored in the browser cache can cause errors when you try to use the newer level. Clearing the cache prevents those errors.
- 5. Reload the Feature Manager webpage.

The Feature Manager page opens in a new browser tab.

- 6. Click Import Package.
- 7. In the **Package to import** field click
- 8. Select the feature package EPK file for the feature you want to install and click **Open**. The import automatically begins.
- 9. When the import finishes, the feature you installed or upgraded appears in the main Feature Manager window.

The feature appears in the Feature Manager table selected.

- 10. In the **Available Versions** column, use the list to select the version of the feature you want to install.
- 11. Click Install.
- 12. Review the information in the confirmation window, then click **OK** to continue. The feature is installed, then RICOH ProcessDirector is restarted to finish the install process.
- 13. Click **DISMISS** to close the Feature Manager browser tab.



You might find that RICOH ProcessDirector is running in two browser tabs. If it is, close one of the tabs.

- 14. To complete the process, clear your browser cache.
 - Information that is stored in the browser cache can cause errors when you try to use the newer level. Clearing the cache prevents those errors.
- 15. Log in again.
- 16. If you shut down the Transform Features application, restart it.
- 17. Enable any antivirus software that you disabled.

Running RICOH ProcessDirector in a different language

RICOH ProcessDirector supports multiple languages which allow you to see the user interface and messages in your preferred language.

Supported languages:

- English
- French
- German
- Italian
- Japanese
- Spanish
- Portuguese



You are not limited to one language pack. You can install as many languages as you need.

To download and specify the language for RICOH ProcessDirector:

- 1. Download the language pack that you need:
 - 1. In a web browser, open this page: https://dl.ricohsoftware.com/
 - 2. Click Software Downloads, enter your Entitlement ID, and click Submit.
 - 3. Click View Related Files on the right side of the page.
 - 4. To download a package, click the title of the language pack feature that you need.

Example: RICOH ProcessDirector: French LanguagePack Feature

- 2. Install the downloaded language pack:
 - 1. Log in to the primary computer as an administrator.
 - 2. Click the **Administration** tab.
 - 3. In the left pane, choose **Utilities** \rightarrow **Features**.
 - 4. Click Import Package.



- 6. Select the language pack EPK file you downloaded and click **Open**. The import automatically begins.
- 7. When the import finishes, the language pack or packs you imported appear in the main Feature Manager window.

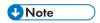
The language pack appears in the Feature Manager table selected.



You can install multiple language packs at the same time.

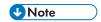
- 8. Click Install.
- 9. Review the information in the confirmation window, enter an installation display name and then click **OK** to continue.
- 10. After the language pack is installed, click **DISMISS**. The dialog closes and you see the login page.

RICOH ProcessDirector is restarted to finish the install process.



You might find that RICOH ProcessDirector is running in two browser tabs. If it is, close one of the tabs

- 3. Go to the browser settings and change the preferred language for displaying pages to the language pack you downloaded.
 - Example: If you downloaded the French LanguagePack Feature, select French as the webpage language.
- 4. To display the RICOH ProcessDirector user interface in the selected language, click the browser refresh button.



- RICOH Visual Workbench and RICOH ProcessDirector Plug-in for Adobe Acrobat are always installed with other languages available. They display in the language that your operating system runs in.
- Some properties require you to select your preferred language for the messages that are returned to RICOH ProcessDirector. These properties are:

Device language

You can find this property in the property notebook of Download input devices.

External program language

You can find this property in the property notebook for the **RunExternalProgram** step template or a step template based on it, such as **CopyToFolder**.

Printer language

You can find this property in some of the printer property notebooks.

Installing RICOH Transform features

Before you install any RICOH Transform features:

- Make sure that your computer meets the additional hardware and software requirements specified.
 See Primary computer, p. 31 and Data transforms, p. 53 for those requirements. You can install one or more RICOH Transform features on the primary server or on another computer on your network.
- The AFP Support feature must be installed on the primary server even if the Transform feature is installed on a computer other than the primary server.
- The RICOH Transform features are installed in trial mode. To continue using the RICOH Transform features after the trial period, you must purchase each transform that you want to use and a license key for it.

You can either:

- Do the steps in this section to install RICOH Transform features using their DVDs.
- Use Installing from a remote directory, p. 83 to copy the RICOH Transform features installers to a staging location on your network, then mount the computer that you want to install features on to that location and run the installers.



 This task does not apply to the Advanced Transform feature. If you are installing the Advanced Transform feature, use the instructions for installing features using Feature Manager.

To install a RICOH Transform features:

- 1. Log in to the computer as an administrator or other user with authority to install programs and open a command line.
- 2. Insert the appropriate RICOH Transform features DVD.

If the autorun feature of Windows is enabled, the installer starts automatically. If autorun is not enabled, go to the DVD drive and double-click setup.exe to start the installer.

- 3. Choose the transform to install from the list and click **Install**.
- 4. Select the appropriate language for the installer to use and click **OK**.
- 5. Reply to any prompts in the installer.

When the installer asks you to choose a directory to install the transform in, you can choose a directory on any drive. However, you cannot choose a directory with international characters (such as \acute{a} , \acute{E} , $\~{n}$, $\~{n}$, $\~{o}$, $\~{B}$) or double-byte characters anywhere in the directory path.

The installation program analyzes the system. If it reports any errors, follow the instructions to correct them.

If the installation program finds an older version of the RICOH Transform features, you must uninstall it. All custom configurations or resources associated with the older version are also deleted.

If this is the first RICOH Transform features installed, the program detects that the Transform Feature Base is not installed. Click **Next** to install it.

The installation program checks for missing dependencies. After you install all of the

- 6. Review the information in the Pre-Installation Summary window and click **Install**. When the installation program completes, it shows a summary, including information about accessing the user interface with a web browser. The default password is nopassword.
- 7. When the installer completes, click **Done**.
- 8. Eject the DVD.
- 9. If you have another RICOH Transform features to install, repeat this procedure beginning with the step to insert the appropriate RICOH Transform features DVD, described above. Make sure you install all the Transform features before you install the license key.



- When upgrading a transform feature, make sure that all transform features are at the same version. If the transform features are not at the same version, the transform feature you did not upgrade stops working.
- When installing a new version of Transform Features over a previous version, make sure to uninstall first the previous version of Transform Features. Uninstalling Transform Features deletes the files stored in your installation folders.

Logging into the Transform Features user interface

This section describes how to log into the Transform Features user interface.

To log in:

1. Open a web browser and enter this address:

 $http://target\ server\ host\ name\ or\ ip\ address:port\ determined\ at\ install/itm$ The default port number is 16080.

For example, if a Transform Feature is installed on a host with TCP/IP address 127.0.0.1 with the default port, the address is: http://127.0.0.1:16080/itm.

2. In the browser window, you see the **Log in to the Transform Feature user interface** page. Type the Transform Features password.

The default password is nopassword.

3. Click Log in.

You see the Transform Features user interface main page.



• If you do not use the Transform Features user interface for 30 minutes or more, you must log in again.

When you first log in to the Transform Features user interface, you see one transform server that has been added by default during the installation.

Downloading and installing license keys

If you have purchased RICOH ProcessDirector, RICOH ProcessDirector Subscription, or any feature, use this procedure to download license keys and install them.

Before you begin this procedure:

- Install the product or feature in trial mode.
- If you have not already purchased the software, contact your local Ricoh support representative or sales representative.
 - After you purchase the software, Ricoh sends an email to the email address provided when the order was placed with the Entitlement Management System (EMS) Entitlement Certificate in the subject line. This email contains an Entitlement ID (EID).
- Follow all the steps in this procedure each time that you receive an email with an Entitlement ID for RICOH ProcessDirector components that you have purchased.
 - You will receive a new Entitlement ID when you renew the subscription for RICOH ProcessDirector Subscription.
- License keys are specific to the release of RICOH ProcessDirector or RICOH ProcessDirector Subscription that you have installed. Be sure that the version on the **About** dialog matches the information in the email.
- This procedure for downloading and installing license keys does not apply to the Transform Features. See Installing the Transform Feature license keys, p. 102 for more information.

To download and install license keys:

- 1. Open RICOH ProcessDirector.
- 2. Click the ** button at the right of the banner and select **About**.
- 3. Click INSTALL LICENSES.
- 4. Click the link to open the license activation website.
- 5. On the **Software Activation** page, enter your **EID** and system fingerprnt.
 - Find the EID in the **Ricoh-Entitlements** email and type or paste it into the **EID** field.

5

- Copy the system fingerprint from the **Install Licenses** dialog.
- 6. Click Confirm Content.
- 7. Select the license you want to activate and click **Activate**.
- 8. After the license is activated, click **Download License Key**. The license key file is downloaded to your computer.
- 9. Return to the Install Licenses dialog.
- 10. In the **Install licenses** dialog, click and select the license file you want to install.
- 11. Click Done.
- 12. Restart RICOH ProcessDirector to complete the installation. See Starting and stopping the RICOH ProcessDirector service, p. 121.



 If the trial period or subscription expires before you restart RICOH ProcessDirector, RICOH ProcessDirector shuts down.

The license keys for all purchased features are now installed on the primary computer. Any feature without a license key remains in trial mode until its trial period ends. If you purchase an additional feature, renew your subscription, or renew your maintenance on the product, repeat this process to install the new key.

When the trial period ends, the steps and objects that are supplied with the feature stop working, but remain on the system. Installing a license key after you purchase the feature activates the steps and objects without requiring a reinstall.

When a subscription expires, all of your objects remain in the system, but you cannot log in. Contact Ricoh software support for assistance with installing a new license on a system with an expired subscription.

Installing the Transform Feature license keys

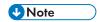
You can install a Transform Feature license key on a computer other than the primary computer using an installation program from the Transform Features directory.

To install a Transform Feature license key:

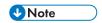
- 1. Log in as an administrator or root user to the computer that the Transform Feature is installed on.
- 2. Get the fingerprint for the computer.
 - 1. Open a command prompt.
 - 2. For Linux, browse to the /opt/infoprint/itm/license_installer directory, and type:
 - ./GetFingerprint.sh
 - 3. For Windows, browse to the **drive:**\Program Files\InfoPrint\InfoPrint Transform Features\license_installer directory, and type:
 - GetFingerprint.cmd

The output of the command looks like this:

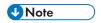
*1AW QLQ7 BQDZ RLRZ



- This fingerprint is required to generate the license key. Save the fingerprint for later.
- 3. Get the license file.
 - When you purchased the Transform Feature, Ricoh Production Print sent an email to the email address provided when the order was placed with the Entitlement Management System (EMS) - Entitlement Certificate in the subject line. This email contains an Entitlement ID (EID) and a link to the Entitlement Management System website.
 - 2. Open the Entitlement Management System website in your browser.
 - 3. In the Login Using list, select EID.
 - 4. Find the EID in the email and type or paste it into the EID field.
 - Click Login.
 - 6. Select the license you want to activate and click Activate.
 - 7. In the Activate Product(s) window, enter the system fingerprint and click Generate.



- If you see an error message that the license could not be generated because checksum validation failed, you entered an incorrect system fingerprint.
- 8. Select what you want to do with the license file:
 - Select Save to File to save the license file to your computer.



- Note the **hostname** and the **fingerprint** (without the *) when saving the license file.
 This is valuable information to have when recovering from a hard drive failure.
- To add the license keys to an existing license file, select Append To File.
- To email yourself a copy of the license file, select E-mail.



- Check the email address in the Contact field. If a copy of the email (including the license key file) should be sent to a different email address, click **E-mail**. Type the email address and click **Send**.
- 9. Log out from the EMS website.
- 10. If you received the license key file in an email, transfer it to the computer that the Transform Feature is installed on or a network location that is accessible to that computer.
- 4. Install the license key.
 - For Linux:
 - 1. Open a command prompt.
 - 2. Browse to the /opt/infoprint/itm/license_installer directory, and type ./install_license_keys.sh.
 - For Windows:

- 1. In Windows Explorer, browse to the **drive:**\Program Files\InfoPrint\InfoPrint Transform Features\license_installer directory.
- 2. Double-click license_keys_installer.exe to run the license key installation program.

Configuring RICOH ProcessDirector

You use the user interface to complete configuration tasks for RICOH ProcessDirector, such as setting up job processing, defining input devices for job submission, defining your printer hardware to RICOH ProcessDirector, and adding users. The RICOH ProcessDirector information center describes these configuration tasks.

To access the RICOH ProcessDirector information center to learn about configuration tasks:

- 1. Enter http://hostname:15080/pd in the address bar of a web browser. Replace hostname with the host name of the primary computer.
- 2. Click → **Help** from the top task bar. You see the RICOH ProcessDirector information center.
- 3. From Contents in the left pane, click **Configuring**. You see a list of configuration tasks in the right pane.
- 4. Select the configuration tasks that apply to your installation.

Scheduling automatic maintenance

RICOH ProcessDirector provides maintenance scripts that must be run regularly on the primary computer to improve performance. By default, RICOH ProcessDirector runs these scripts every day at midnight. You can change the time or frequency, and you can run your own maintenance scripts at the same time.

While these scripts are running, they might slow RICOH ProcessDirector down for a few minutes. Therefore, you should avoid running them at peak production times.

The RICOH ProcessDirector installation creates two new scheduled tasks in the Windows Task Scheduler maintenance schedules. Each scheduled task runs the scripts in the C:\aiw\aiw1 \maintenance\daily and C:\aiw\aiw1\maintenance\weekly directories at the intervals set in the Task Scheduler.

- To change the time, day, or frequency for running maintenance scripts, edit the scheduled tasks in the Windows Task Scheduler.
 - 1. Log in to Windows as an administrator.
 - 2. Run the Windows Task Scheduler.
 - 3. Look for Ricoh_daily_db_maintenance and Ricoh_weekly_db_maintenance in the Task Scheduler and make any necessary changes to the scheduled tasks.
- To run your own scripts at the same time as the RICOH ProcessDirector maintenance scripts, copy them into the C:\aiw\aiw1\maintenance\daily or C;\aiw\aiw1\maintenance\weekly directory.

Make sure that the Windows account used for RICOH ProcessDirector has permissions to the maintenance directories used to run the scripts.

5

Tuning Java memory allocation

Allocating more memory to Java often improves the performance of RICOH ProcessDirector. However, it is imperative that you take several factors into consideration before you change this configuration.

Run with the default setting for a while before you consider changing the Java memory allocation. If you repeatedly experience Java out of memory errors, consider increasing the allocation.

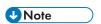


- We recommend allocating no more than 50% of the available system memory on your system to RICOH ProcessDirector Java processes. This recommendation takes into consideration the memory needs of other parts of RICOH ProcessDirector, such as the database, transforms, custom code, and other components. The recommendation also ensures that the operating system and other tools and utilities have the resources they require to operate.
- If you intend to define local secondary servers to use with resource-intensive steps, you must take
 those requirements into consideration as well. The amount of memory allocated to all RICOH
 ProcessDirector servers on the primary computer combined should not exceed 50% of the available
 system memory.

To tune Java memory allocation:

- 1. Check the amount of RAM installed on your system. Divide that number by 2 and write it down.
- 2. Check how much memory is allocated to other applications that run on this system.

Reduce the number you wrote down by the amount of memory each application uses. The resulting value is the total amount of heap memory that is available for you to allocate to Java for all running RICOH ProcessDirector primary and secondary processes.



- If your RICOH ProcessDirector solution requires more memory than the amount determined in this step, we recommend upgrading the system memory to meet the stated guidelines.
 Allocating more than 50% of available memory to the RICOH ProcessDirector Java heap negatively impacts performance.
- 3. Log in to the primary computer as the user who installed RICOH ProcessDirector.
- 4. Open %AIWDATA%\config\jvmsettings.cfg in a text editor. By default, %AIWDATA% is \aiw\aiw1.
- 5. Find the line that looks like this:

primary=-Xmx2048m -Djava.net.preferIPv4Stack=true -Djava.awt.headless=true

The value after primary=-Xmx is the maximum amount of heap memory the RICOH ProcessDirector Java run time environment is allowed to use for the RICOH ProcessDirector primary process. In this example, the primary server can use 2048MB (2GB) of RAM for its heap.

- 6. Update the -Xmx value to the number you determined in step 2.

 For example, to allow the primary server use 8GB of heap space, you can specify -Xmx8192m or -Xmx8g
- 7. If the line does not include this setting: -XX:+UseG1GC, add it.

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- 8. If you have secondary servers defined, add a line for each secondary server to allocate a specific amount of memory for them.
 - 1. Copy the line that begins with primary and paste it on a new line at the bottom of the file.
 - 2. Update the line that you copied to change primary to the value of the **Server name** property for the secondary server.
 - 3. Update the value after secondary_server_name=-Xmx to the amount of memory that you have available for it.
- 9. Save and close the file.
- 10. Restart the RICOH ProcessDirector service to apply the changes.



• You change the RICOH ProcessDirector Plug-in for Adobe Acrobat JVM memory allocation by clicking **Ricoh** → **Preferences** from the Adobe Acrobat menu bar.

Replacing your control files with the sample files

When you install a new version of RICOH ProcessDirector, the installer automatically adds new sample control files to the C:\aiw\aiw1\samples directory and copies them to your control files directory, C:\aiw\aiw1\control_files. It does not overwrite any of your customized control files in C:\aiw\aiw1\control_files. You can use the copyConfigurationFiles script to install the default control files or to overwrite your customized control files.

Replacing your control files requires Perl to run. Before replacing your control files, make sure a Perl interpreter is installed.

To replace your control files with the sample files:

- 1. Log in to Windows as an administrator.
- 2. On the command line, enter this command:

```
C:\ProgramFiles\Ricoh\ProcessDirector\bin\copyConfigurationFiles.pl
```

You can add these optional parameters to the copyConfigurationFiles command:

```
[-r[-b]] [-w forceReplaceFile] [samplesDirectory configurationFilesDirectory] [[-o differencesOutputFile] [-c]] [-v] [-help]
```

-r

The script overwrites existing files in the C:\aiw\aiw1\control_files directory.

-b

The script backs up each file it replaces. The backup files are called $replaced_file$.bak. It does not back up files unless they are being replaced by a different version of that file.

-w forceReplaceFile

The script overwrites a specific set of files. List the file paths to overwrite in the forceReplaceFile file.

samplesDirectory

The directory where the sample files are located. The default is C:\aiw\aiw1\samples.

configurationFilesDirectory

The directory where the control files are located. The default is C:\aiw\aiw1\control_files.

-o differencesOutputFile

The script writes any file names where there are different versions of a file in the samples and control_files directories. The different version file names are written to the differencesOutputFile file.

-c

The script compares the files in the C:\aiw\aiw1\samples and C:\aiw\aiw1\control_ files directories and prints a list of which files are in both directories but have different content. Running the script with this parameter does not do the normal copying and replacing.

-v

The script displays additional file information while copying files.

-help

The script displays help and syntax information.

New versions of RICOH ProcessDirector might add new functions that require updated control files. To move your customized content from the old control files to the new control files:

- Generate a list of which files have new versions. Enter this command: copyConfigurationFiles.pl -o \tmp\differencesOutputFile
- Copy the new control files. Enter this command: copyConfigurationFiles.pl -r -b -w \tmp\differencesOutputFile
 Specifying the -b causes the script to back up files before overwriting them.
- 3. Copy your customized content from the replaced_file.bak backup files to the corresponding control file.



 We recommend using the Migration Assistant when upgrading to a different computer to copy objects from one system to another. For additional information see Upgrading on a different computer with Migration Assistant, p. 62.

Copying objects from another system

To reuse objects from another RICOH ProcessDirector system, you can use the other system to export them. On this RICOH ProcessDirector system, you can import the objects rather than recreating them manually.

You can export and import objects such as input devices, workflows, printers, media objects, notifications, servers, step templates, user names, groups, and locations. You can also export and import some objects added by features or extensions.

Important

- We recommend using the Migration Assistant when upgrading to a different computer to copy objects from one system to another. For additional information see Upgrading on a different computer with Migration Assistant, p. 62.
- Do not import objects added by a feature or extension that is not installed on this system.
- Before you import an object that has the same name as an existing object of the same type, make sure that the existing object is disabled. If the object is an input device, also make sure that it is disconnected. When you import the new object, the existing object is updated to match the new one.
- If you are using the Preprinted Forms Replacement feature, export the media.zip file before you import media objects with electronic forms. Follow the instructions in the help system for exporting media objects with electronic forms.
- When you import order property mapping objects, the file specified in the Sample order XML file
 property is not included in the export package. You must copy the file to the new system manually
 after you import the object.
 - Sample XML files are stored in: C:\aiw\aiw1\mapping\proprty_mapping_object
- When you import step resources, the files that they refer to are not included in the export package.
 Copy the files referenced in the step resources from the export system to the import system manually.
 You must copy the files to the import system before you import the step resource objects.
 - To import all the step resources, copy the contents of C:\aiw\aiw1\StepResources from the
 export system into the same directory on the import system.
 - To import specific step resources, open the XML file that you exported. Find the entry for each step resource that you exported and locate the **StepResource.File** property. In that value, find the name of the RSC file associated with that step resource. For example, in this value:

The file name is: 1992052c6ef44a229b8b43d77232bf53.rsc

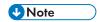
Find the file on the export system and copy it into the same directory on the import system.

- You can export objects from a primary server running on one operating system and import them on a primary server running on a different operating system.
 - If you export objects from Windows and import them on Linux, you need to manually update the paths for the paths or the configuration files.

To copy objects from another system:

- 1. Click the **Administration** tab.
- 2. In the left pane, click **Utilities** → **Import Objects**.
- 3. In the **File to import** field, click to select the XML file that contains the properties of exported objects.

The default name of this file is Ricon_Export_timestamp.xm1. The administrator who exported the objects might have given the file a different name.



- If you exported media objects with electronic forms, the name of the file is media.xm1. It is in this directory:
 - C:\aiw\aiw1

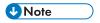
The file is automatically examined, and the objects are evaluated. If there are issues with any objects in the file, you see a dialog that lists the import errors and warnings. Close the dialog and all the objects appear in the **Objects to import** table. Objects with errors or warnings are marked with an icon.

Repeat this step for all the files you want to import. Objects from additional files are added to the table, so they can all be added at the same time.

- 4. Review the objects in the list. Select any object marked with a warning or error symbol and click **Details** to see additional information about the warning or error. Follow the instructions in the description to resolve problems. You cannot import objects that are marked as errors.
- 5. Select the objects that you want to import.
- 6. Optional: To make sure that you do not update objects that exist, click **Deselect existing** objects.
- 7. Click **Import**.

If the **Import** button is disabled, one or more selected objects are marked with the error icon. Click **Deselect error objects** to clear the selection for those objects and click **Import** again. The objects without errors are imported.

Return to the error objects to resolve the issues and try to import them again.



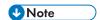
- Credential objects might be contained in the file you import if they were included as references in
 workflows, step templates, input devices, or transmitter objects. The imported credential objects
 cannot be used until you re-enter values for the **User name** and **Password** properties on the
 imported system.
- If an imported workflow refers to a step that does not exist on this system, RICOH ProcessDirector
 replaces the step with a placeholder step named ReplacedStep. The original step name and step
 template name are available in the Step properties. The ReplacedStep acts like the
 ContinueToNextStep step template, so it simply passes the job to the next processing step without
 changing it.
- Contact your local Ricoh support representative if you receive an error message for step templates not containing a reference to an extension when importing objects.

Installing and configuring the pdpr script

If you are migrating from InfoPrint Manager and you use the **pdpr** command to submit jobs, you can install the RICOH ProcessDirector **pdpr** script on the computers that submit jobs and use the same command to send jobs to RICOH ProcessDirector.

The installation package for the **pdpr** script is copied to the primary computer when you install the base product. You can copy the installation package and install it on computers that submit jobs running these operating systems:

- Red Hat 8.1 through latest 8.X
- Red Hat 9.2 through latest 9.X
- Rocky Linux 8.4 through latest 8.X
- Rocky Linux 9.0 through latest 9.X
- SUSE Linux Enterprise Server (SLES) 12.0 with Service Pack 4 or above for x86_64
- SUSE Linux Enterprise Server (SLES) 15.0 with Service Pack 1 or above for x86_64
- Windows 11
- Windows Server 2022 64-bit



 To install the **pdpr** script on a different operating system, contact your Ricoh support representative.

The **pdpr** script requires Perl to run. Before you install the **pdpr** script, make sure that a Perl interpreter is installed on the client systems.

The **pdpr** script uses a control file named pdpr.cfg to determine whether jobs are sent to InfoPrint Manager or to RICOH ProcessDirector. You can either store the control file on the same computer that you install the **pdpr** script on, or you can store it in a central location and let the **pdpr** script access it using FTP. The **pdpr** script uses an anonymous login to the FTP server, so the anonymous user must have read permission for the control file.

To get the most recent pdpr script, contact your Ricoh support representative.

To install and configure the **pdpr** script:

- 1. Log in to the primary computer as a user with administrator privileges.
- 2. Find the pdpr installer file: C:\aiw\aiw1\samples\pdpr\pdpr_installer.
- 3. Copy the file to a temporary directory on the computer that runs the **pdpr** command.
- 4. Log in to a client computer:
 - On a Linux-based client, log in as the root user and open a command prompt.
 - On a Windows client, log in as a user with administrator permission and open a command prompt.
- 5. Change directories to the directory that contains pdpr_installer.
- 6. Type: perl pdpr_installer
 The installer interface runs in the command prompt window.
- 7. When the installer asks where you want to install the program, choose a different directory than the temporary directory that the pdpr_installer was copied in to.



- If you install into the temporary directory, the installation fails. You get an incomplete installation that has a pdpr directory instead of the pdpr script.
- 8. Respond to the questions in the installer according to these definitions:

Host name or IP address of RICOH ProcessDirector server

Fully qualified host name or IP address of the computer that the primary server is installed on.

Full FTP path for pdpr.cfg file

If you want to store the pdpr.cfg file in a central location, the full path to the pdpr.cfg file. The value must end with the file name pdpr.cfg.

If you plan to store the pdpr.cfg file on the same system as the **pdpr** script, do not type anything; press **Enter** and continue with the installer.

- 9. Finalize the installation process:
 - If you are installing on a Linux client, log out and log back in so the changes can take effect.
 - If you are installing on a Windows client, restart the computer so the changes can take effect.
- 10. To define rules for parsing the pdpr command and submitting jobs to RICOH ProcessDirector, edit the pdpr.cfg file.

The file must contain one line for each rule that you define. Jobs are sent to an input device based on the last rule that they match. If the job does not meet the conditions of any of the rules, it is sent to InfoPrint Manager.

Each line of the file follows this syntax:

```
FileName | LDName, regular expression, input device name, [BOTH]
```

Use **FileName** if you want to parse the file name of the input file to determine where to send the job. Use **LDName** to parse the value of the **-d** (InfoPrint Manager logical destination) option on the **pdpr** command to determine where to send the job.

For example, the file might contain these lines:

```
LDName, .*\.[Pp][Ss], InputPS
FileName, .*\.[Aa][Ff][Pp], InputAFP
```

The first line instructs the script to look at the **-d** option on the **pdpr** command. If the value specified for that option ends with **.ps** or **.PS**, the job is sent to the input device named **InputPS**. The second line instructs the script to look at the file name of the input file. If the file name ends with **.afp** or **.AFP**, the job is sent to the input device named **InputAFP**.

If neither condition is met, the job is sent to InfoPrint Manager using the value stored in the PDHOST environment variable on the system.

Add the **BOTH** parameter to the end of an entry to indicate that if the condition is satisfied, the job should be sent to both InfoPrint Manager and RICOH ProcessDirector. This is useful when you are initially configuring RICOH ProcessDirector to receive jobs from **pdpr** because you can test the RICOH ProcessDirector configuration while continuing to use InfoPrint Manager in your production environment.

Now you can configure RICOH ProcessDirector to receive jobs submitted with the **pdpr** script from all the client systems. For more information, see the RICOH ProcessDirector information center in the user interface.

Setting up to use LDAP authentication

If you have an existing LDAP or Active Directory server, you can use LDAP or Active Directory user names and passwords to authenticate into RICOH ProcessDirector.

You must install the Security feature before you can set up to use LDAP authentication.

Consult your LDAP administrator for the values of the **LDAP server** and other properties you set in this procedure. Before you turn on LDAP authentication, you map RICOH ProcessDirector security groups to existing LDAP groups.

After you turn on LDAP authentication, the first time that a user logs in:

- RICOH ProcessDirector authenticates the user name and password with the LDAP server.
- RICOH ProcessDirector creates a RICOH ProcessDirector user name that is identical to the LDAP user name.



- No LDAP password information is stored on the RICOH ProcessDirector server.
- When you use an LDAP user ID to access your production environment, RICOH ProcessDirector cannot track the number of failed login or password change attempts. Therefore, RICOH ProcessDirector cannot lock the user out after repeated failed login attempts with an incorrect LDAP password. You must configure the maximum number of failed login or password change attempts on your LDAP server in addition to configuring RICOH ProcessDirector security.
- RICOH ProcessDirector assigns the user RICOH ProcessDirector group memberships based on the
 values for the Product to LDAP group mapping property and the LDAP group memberships of the
 user.

Each time that a user logs in:

- RICOH ProcessDirector authenticates the user name and password with the LDAP server.
- If you synchronize product groups with LDAP groups, RICOH ProcessDirector updates the product group memberships of the user based on:
 - The values for the Product to LDAP group mapping property.
 - The LDAP group memberships of the user.
- If you do not synchronize product groups with LDAP groups, RICOH ProcessDirector does not update the product group memberships of the user. You can assign group memberships to users manually in RICOH ProcessDirector. See the RICOH ProcessDirector information center for information about managing users and groups.

To set up to use LDAP authentication:

- 1. Log in as a user who is a member of the **Administrator** security group.
- 2. Click the **Administration** tab.
- 3. In the left pane, click **Settings** \rightarrow **LDAP**.
- 4. Set the **LDAP server** property to either of these values:
 - The network IP address.
 - The fully qualified host name of the LDAP server and the port that the system uses for authentication.

To include more than one LDAP server, use a semicolon (;) to separate the entries.

5. Specify values for the **Root distinguished name**, **User search base**, and **User search filter** properties.

The value you enter for the **User search filter** property determines the format of your RICOH ProcessDirector user names, for example, an email address format or a UID format.

- 6. Optional: Specify a value for the Email attribute property.
 - If you enter a value for this property, RICOH ProcessDirector sets a value for the **Email address** property when it creates a user.
- 7. Specify values for the Manager distinguished name and Manager password properties.
- 8. Specify values for the **Group search base**, **Group search filter**, and **Group search member** properties.
 - RICOH ProcessDirector uses the name of the LDAP group specified in the **Product to LDAP** group mapping property in the **Group search filter** property when it authenticates an LDAP user to RICOH ProcessDirector.
- If you want to manage RICOH ProcessDirector security groups using LDAP, set the Synchronize with LDAP property to Yes. If you want to manage security groups using RICOH ProcessDirector, set the property to No.
- 10. Specify the connections between product groups and LDAP groups:
 - 1. Select a product security group from the list.
 - 2. Type the name of the corresponding LDAP group next to it.
 - 3. Click + to the right of the LDAP group and map another product group to an LDAP group.
 - 4. Repeat the previous step until you have mapped all product groups to LDAP groups.
- 11. Check to see whether your browser has automatically filled the **Manager distinguished name** and **Manager password** properties.
 - If you are using Active Directory and LDAP, leave the pre-filled values there.
 - If you are using LDAP but not using Active Directory clear the properties and leave them blank.
- 12. To secure the connection to the LDAP server and establish Transport Layer Security (TLS), specify a value for the **LDAP security** property:
 - To use the StartTLS operation, set the property to StartTLS.
 StartTLS works with most default implementations of LDAP.
 - To use the Secure LDAP (LDAPS) protocol, set the property to Idaps.
 Do not specify LDAPS unless your LDAP administrator already has set up your LDAP implementation to use LDAPS.
- 13. To verify that you can log in with your LDAP credentials:
 - In the Test LDAP Settings section, enter an LDAP user name and password. Make sure that
 the user name is a member of an LDAP group that is mapped to the RICOH ProcessDirector
 Administrator group.
 - 2. Click Test LDAP Settings.
 - If the test is successful, you receive a message that says LDAP settings test succeeded.
 - If you receive an error message, click **Close**, update your LDAP settings, and click **Test LDAP Settings** again.
- 14. When the test completes successfully, set the **Authenticate with LDAP** property to **Yes**.
 - If you cannot get a successful test, leave the **Authenticate with LDAP** property set to **No** and have your LDAP specialist look at other possible issues.

15. Click SAVE.

If you have not used the test function before you click **SAVE** with the **Authenticate with LDAP** property set to **Yes**, the system runs the test with the user ID and password specified.

- If the test succeeds, the settings are saved and LDAP authentication is activated.
- If the test fails, you see an error message and none of the settings are saved.
 Fix the LDAP settings and run the test until it passes. If the test continues to fail, set the Authenticate with LDAP property to No and click SAVE. Work with your LDAP specialist to resolve the problems and retest the settings.

After you turn on LDAP authentication:

- Local RICOH ProcessDirector users cannot log in to RICOH ProcessDirector.
- The first time that an LDAP user logs in to RICOH ProcessDirector, the system creates a user name that is identical to the LDAP user name.
- If the **Synchronize with LDAP** property is set to **Yes**, RICOH ProcessDirector does not use any product groups that are not associated with LDAP groups.

RICOH ProcessDirector does not delete existing user names when you turn on LDAP authentication. You must manually delete those user names from the system.



- When LDAP authentication is turned on and RICOH ProcessDirector has a user with the same user name as an LDAP user:
 - RICOH Process Director keeps the password of the existing user.
 - RICOH ProcessDirector lets the user authenticate with LDAP.
- If LDAP authentication is turned off, the user can authenticate with the RICOH ProcessDirector password.

Communicating between RICOH ProcessDirector and the LDAP server

When you set up communications between RICOH ProcessDirector and your LDAP server, you might have to modify your LDAP server settings for these binds and search requests.

This table maps the Database property names to the corresponding names in the user interface. Use this table as a reference to help understand what properties are passed and returned by the searches and binds performed by RICOH ProcessDirector.

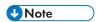
Database and User Interface property names

Database Property Name	User Interface Property Name	
WorkflowSystem.AdLdap.GroupMap	Product to LDAP group mapping	
WorkflowSystem.AdLdap.GroupSearchBase	Group search base	
WorkflowSystem.AdLdap.GroupSearchFilter	Group search filter	
WorkflowSystem.AdLdap.GroupSearchMember	Group search member	

Database Property Name	User Interface Property Name
WorkflowSystem.AdLdap.ManagerDN	Manager distinguished name
WorkflowSystem.AdLdap.ManagerPassword	Manager distinguished name password
WorkflowSystem.AdLdap.rootDN	Root distinguished name
WorkflowSystem.AdLdap.Server	LDAP server
WorkflowSystem.AdLdap.UserSearchBase	User search base
WorkflowSystem.AdLdap.UserSearchFilter	User search filter
User.ID	User name
User.Password	User password

RICOH ProcessDirector creates these binds whenever a user logs in:

- bind \${WorkflowSystem.AdLdap.Server} using \${WorkflowSystem.AdLdap.ManagerDN} and \${WorkflowSystem.AdLdap.ManagerPassword}
 - When the **Manager distinguished name** system property (WorkflowSystem.AdLdap. ManagerDN) does not have a value, an Anonymous bind is created.
- bind to \${WorkflowSystem.AdLdap.Server} using \${User.ID} and \${User.Password}



 The password for User.Password must be set when making changes for LDAP. If the password is not set, the bind fails.

RICOH ProcessDirector does these search requests whenever a user logs in:

- For all RICOH ProcessDirector LDAP groups:searchRequest "\${WorkflowSystem.AdLdap. GroupSearchBase},\${WorkflowSystem.AdLdap.rootDN}" wholeSubtree Filter: (\${WorkflowSystem.AdLdap.GroupSearchFilter}\${WorkflowSystem.AdLdap.GroupMap})
 The results must include the Group search member. The value of the Group search member is used as the RICOH ProcessDirector user name.
- When a user name is set to the value returned on the Group search member argument: searchRequest "\${WorkflowSystem.AdLdap.UserSearchBase},\${WorkflowSystem. AdLdap.rootDN}" wholeSubtree Filter: (\${WorkflowSystem.AdLdap.UserSearchFilter} =\${User.ID})

Verify communications between RICOH ProcessDirector and your LDAP server are working correctly by testing the **Group search base** and **User search base**:

 Use Microsoft's LDP. exe tool to verify communications between RICOH ProcessDirector and your LDAP server. You input your LDAP server name, port, user name, and password into the tool. The tool reports back the Active Directory structure which you use to verify the **Group search base** and **User search base** information.

Setting up to send data to RICOH Predictive Insight

The RICOH Predictive Insight settings let you configure the system to send data to RICOH Predictive Insight.

The data that you send to RICOH Predictive Insight must be stored in the Reports database by the RICOH ProcessDirector data collectors. Before you do this procedure, you need to configure the Reports feature, including setting up data collectors and workflow steps to gather the data that you want to send to RICOH Predictive Insight. The data collected by the data collectors before setting up a RICOH Predictive Insight data transmitter can be used in RICOH Predictive Insight after the transmission is enabled.



 Make sure that you have enabled data capturing in Reports → Database Settings and for each data collector you want to collect data.

To create a connection to RICOH Predictive Insight and to transmit data, you must complete a series of steps. The data connection requires you to create a credential and a data transmitter. The credential uses an authentication code to create a certificate that authenticates with RICOH Account Administration for access to Ricoh cloud applications. To get access to RICOH Account Administration, contact the system administrator for RICOH Predictive Insight.

After you create a certificate that authenticates RICOH ProcessDirector to Ricoh cloud, you must create a RICOH Predictive Insight data transmitter that enables the data transmission.



• Only one Ricoh cloud credential and one RICOH Predictive Insight data transmitter can be created for sending data to RICOH Predictive Insight.

To set up to send data to RICOH Predictive Insight:

- 1. Click the **Administration** tab.
- 2. In the left pane, click **Settings** → **RICOH Predictive Insight**.
- 3. Go to **Settings** and set the values for these properties:
 - 1. Select the time zone for the RICOH ProcessDirector primary computer from the **Primary** computer time zone list.
 - 2. Enter the name of the RICOH ProcessDirector system in the **System display name** field. The name identifies your RICOH ProcessDirector system in RICOH Predictive Insight.
 - 3. If you choose to use a proxy server, make sure that the proxy server is configured on the **System Settings** page.
 - 4. Click Save settings.
- 4. In the **Credential** section, click the Add icon to create a Ricoh cloud credential. A new dialog opens to set up the credential:
 - 1. Fill in the fields in the **General** section.
 - 2. In the **Certificate** section, click **Generate code**. **RICOH Account Administration** opens in a new tab.
 - 3. Log in to **RICOH Account Administration** and copy the code.
 - 4. Return to RICOH ProcessDirector and paste the generated code into the **One-time code** field.
 - 5. Click **OK** to generate the certificate and save the credential.

- 5. In the **Data Transmitter** section, click the Add icon to create a new RICOH Predictive Insight data transmitter. A new dialog opens to set up the data transmitter:
 - Review the current values for the properties and make any required updates on all the tabs.
 To see information about any of the properties, click the question mark button next to the property name.
 - 2. When all the settings are configured correctly, click the switch at the top of the **General** tab to enable the data transmitter.
 - 3. Click OK.

If all settings are configured correctly, you should see a green check mark in front of every section. The first data transmission occurs on the schedule you set. The first transmission could take a while to complete, even if only a small amount of data is sent. The upper right corner of the RICOH Predictive Insight Settings page shows the status of the connection and the date and time of the last successful transmission.

Installing a RICOH ProcessDirector product update

Preparing for the update

When you prepare your system for an update, you must determine how you want to update your system and what components you have installed, and then back up your system.

To prepare for an update:

- 1. Decide how to update your system. You have two choices:
 - Download the full product ISO file for the most recent version of RICOH ProcessDirector.
 The ISO file includes a full update of the base product and all the features. You install the update the same way that you initially installed the product.

This option is the most efficient, because there is only one package to download and installed features are updated automatically.



- RICOH Transform features must be downloaded and installed separately.
- Download the update packages for the base product and each of the features you have installed.

Downloading individual update packages can be faster than downloading the full ISO file, as each package is significantly smaller than the ISO file. However, each package must be downloaded individually. If you have a large number of features to update, the process can take a long time.

You can only install a product update on RICOH ProcessDirector systems at Version 3.6 or higher. If your software is below Version 3.6, use the full product ISO file or contact Software Support.

2. If you have RICOH Transform features installed, log in to the Transform Feature user interface and open the About dialog. Note the transforms that you have installed.

- 3. If you chose to use the full product ISO file, follow the instructions in chapters 3 and 4 of *Ricoh ProcessDirector: Planning and Installing* for downloading and installing the update.
- 4. If you chose to install update packages, you must update the base product and all features that are currently installed.
 - 1. Log in as a user authorized to use Feature Manager.
 - 2. Click Administration.
 - 3. In the left pane, choose **Utilities** → **Features**

If you see an error message, you must start Feature Manger manually:

• Log in to the primary computer as the user who installed RICOH ProcessDirector. Click the Windows Start button and type services to search for the Services App. Open the Services App, then right-click the Feature Manager Service and select **Restart**.

To complete the process, clear your browser cache and reload the Feature Manager webpage.

- Make a list of all the features that have a version number In the Installed Version column.
 The Product Update feature contains the base product, so it must be updated.
- 5. Back up the system. Type these commands.

"C:\Program Files\7-Zip\7z.exe" a -t7z lib.7z "C:\aiw\aiw1\lib"
"C:\Program Files\7-Zip\7z.exe" a -t7z ext-xml.7z "C:\Program Files\Ricoh\ProcessDirector\extensions**\extension.xml"



- This procedure stops and starts your RICOH ProcessDirector server. Do this procedure at a scheduled maintenance time.
- 6. Disable your antivirus software.

During the install process, various archive files (ZIP, JAR, and EPK files) are copied to your server. Then, the contents are extracted and moved to the correct directories on your system. Antivirus tools usually lock and scan files extracted from archives.

While the lock and scan process is generally fast, the installation program runs faster. If the installer tries to unpack and move files before the scan is complete, installation errors occur and can be difficult to recover from. Disabling your antivirus software during the install process prevents these types of errors.



- Microsoft Defender Firewall and Microsoft Defender Antivirus are separate programs. You
 must disable Microsoft Defender Antivirus. Turning off Microsoft Defender Firewall does not
 prevent the installation issues described.
- Microsoft Defender Antivirus must be disabled; passive mode is not sufficient to prevent install errors.
- 7. Verify that these exceptions are configured in your antivirus software.

If you cannot deactivate your antivirus software entirely, excluding some directories from scans can reduce the possibility of installation errors. In addition, most antivirus software affects the function of databases. The software sometimes quarantines files that databases use, causing

operation errors. Setting up these exclusions now prevents those errors after RICOH ProcessDirector is installed.

Verify the exceptions for these paths:

- C:\aiw\aiw1
- C:\Program Files\Ricoh\ProcessDirector
- If you plan to use DB2 as your database:
 - C:\AIWINST
 - C:\ProgramData\IBM
- If you use a custom feature that integrates BCC software with RICOH ProcessDirector:
 - C:\BCC



 If your RICOH ProcessDirector for Windows system is at Version 3.6.0, download the files that you need, but do not install the Product Update or any features until you contact Ricoh Software Support. An extra utility program must be run before the Product Update package is installed or your system will not restart.

Downloading and installing update packages

Product updates for RICOH ProcessDirector can be downloaded from the Ricoh Software webpage.



• This procedure assumes that you are not using the primary computer to access an external webpage and download the update files.

If you download the files directly to the primary computer, download the files to this directory:

C:\Program Files\Ricoh\ProcessDirector\available

To download and install the update packages:

- 1. In a web browser, open this page: https://dl.ricohsoftware.com/.
- 2. Click **Software Downloads**, enter your Entitlement ID, and click **Submit**.
- 3. **Optional:** If you have RICOH Transform features to update, find and click the names of those transforms to download them.
- 4. Click View Related Files on the right side of the page.
- 5. Click the title of each package that you want to download, starting with **Ricoh ProcessDirector: Product Update Feature**.

Use the list of installed features that you made to determine which other packages to download.

6. After each package downloads, validate its MD5 checksums to the value shown on the webpage. Use this command, substituting the name of the file for *ProductUpdate.epk*:

```
certutil -hashfile ProductUpdate.epk MD5
```

If the checksum does not match, download the file again.

- If your RICOH ProcessDirector for Windows system is at Version 3.6.0, download the files
 that you need, but do not install the Product Update or any features until you contact Ricoh
 Software Support. An extra utility program must be run before the Product Update package is
 installed or your system will not restart.
- 7. Log in to the primary computer as an administrator.
- 8. Copy the EPK files into this directory on the primary computer:
 - C:\Program Files\Ricoh\ProcessDirector\available
- Install the Product Update feature using Import Package.
 For more information, see: Adding or upgrading a feature using Import Package, p. 95
- 10. When the installation completes, RICOH ProcessDirector restarts. Use your browser to log in to the user interface. If an error occurs during the installation, contact Ricoh Software Support.
- 11. If you downloaded other feature packages, use Feature Manager to install them.



 There are packages that contain features updates that are installed only if instructed by Ricoh Software Support. Check with the Ricoh Software Support team before downloading and installing any other packages outside the base product, language packs, and font collections.

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6. Starting, stopping, and uninstalling

- Starting and stopping the RICOH ProcessDirector service
- Uninstalling RICOH ProcessDirector

You can start and stop the RICOH Process Director service. You can also uninstall RICOH Process Director.

Starting and stopping the RICOH ProcessDirector service

The RICOH ProcessDirector service includes all components needed to process jobs through workflow, such as the primary server, local secondary servers, the UI application, and the information center. By default, the RICOH ProcessDirector service starts automatically when the system starts.

You might need to stop and restart the service manually if there are errors or network difficulties.



- While stopping the service does shut down RICOH ProcessDirector, in some situations, additional steps are required to ensure that all processing ends. These situations include:
 - Applying updates to the operating system.
 - Reworking the file system that contains /aiw. For example, moving the file system to a new storage unit.
 - Running a full storage backup. For example, shutting everything down so that data transfers do not occur during the backup.
- If you need to shut down all processing, do the optional steps as needed for your environment.

To start or stop the RICOH ProcessDirector service:

- 1. Open the Windows Control Panel.
- 2. Click Administrative Tools.
- 3. Double-click Services.
- 4. Select RICOH Process Director. In the **Action** menu:
 - Click **Stop** if the service is currently running.
 - Click Start to start the service.
- 5. **Optional**: To stop other related services that are running, right-click these services and select **Stop**:
 - 1. **RPDPStgreSQL**, only exists if you run in a PostgreSQL configuration.
 - 2. **RPDHistoryPostgreSQL**, only exists if you have the Reports feature with an older version of RICOH ProcessDirector and you upgrade to a newer version.
 - 3. **DB2 Services**, only exist if you run in a DB2 configuration. The services might include:
 - DB2 DB2COPY1 AIWINST-0
 - DB2 Governor (DB2COPY1)
 - DB2 License Server (DB2COPY1)
 - DB2 Management Service (DB2COPY1)
 - DB2 Remote Command Server (DB2COPY1)

- DB2DAS DB2DAS0
- 4. ITM GUI and ITMServer, only exist if a Transform Feature is installed.
- Optional: If you have the AFP Support feature installed, you need to stop PSF print driver. Click
 CTRL + Alt + Delete and select Task Manager → Details. Right-click the psfapid.exe and
 select End Task.

Uninstalling RICOH ProcessDirector

You might need to uninstall RICOH ProcessDirector (for example, if you need to restore to a previous level).

Uninstalling the base product, features, and extensions

You can use one command to uninstall the base product and all features and extensions at the same time. You cannot uninstall features or extensions individually.



• Do not use the Windows Control Panel to uninstall RICOH ProcessDirector.

To uninstall the base product and all features and extensions:

- 1. Log in to the primary computer as the user who installed RICOH ProcessDirector.
- 2. Go to the directory where you installed RICOH ProcessDirector.
 - If you accepted the default directory during installation, go to C:\Program Files\Ricoh\ProcessDirector.
- 3. Go to _uninstall\ippd and run removeIPPD.exe.
 RICOH ProcessDirector starts the program that guides you through the uninstallation process.
 Follow the instructions in the program.
- 4. Click Uninstall to start the uninstallation process. When the uninstallation is complete, you either see a message that the uninstallation was successful or a message that there were errors and the location of the error log file.
- 5. Click Done.
- 6. If the primary computer does not restart automatically, restart it manually.
- 7. The uninstallation program leaves behind part of the directory structure. To completely remove all files that the RICOH ProcessDirector installation program installed, remove the C:\aiw\directory. If you installed RICOH ProcessDirector in a directory other than the default, also remove C:\Program Files\Ricoh\ProcessDirector.



• Do not remove the %ProgramData%\Ricoh\InfoPrint Manager\var\psf and % ProgramData%\Ricoh\InfoPrint Manager\var\psf\segments folders if InfoPrint Manager is installed on the server you are using.

Uninstalling Transform Features

If you want to uninstall Transform Features, you need to uninstall it from the server and the BladeCenter, as appropriate.

Uninstalling Transform Features from a server

This section describes the procedure for uninstalling Transform Features from a server.

To uninstall Transform Features from a server:

- For Linux, run this command from this path: /opt/infoprint/itm/_uninst/uninstall_itm.
 sh, and for Windows, specify the uninstall command from this path: install_path_uninst
 \uninstall.exe
- 2. To uninstall only a specific transform, for Linux, run this this command: /opt/infoprint/itm/_inst/feature/<transform_id>/_uninst/uninstall_tf_ <transform_id>.sh where <transform_id> is the transform name.
- 3. You see the **Welcome to the uninstall program** page.
- 4. Click Next.

You see the summary page stating that the installer will uninstall Transform Features.

5. Click **Uninstall**.

You see the page stating that Transform Features has successfully uninstalled.

6. Click Finish to exit the wizard.

On Windows operating systems, Transform Features can also be uninstalled from the Control Panel.

Uninstalling Transform Features from a Linux server from the command line

This section describes how to uninstall Transform Features from the command line.

To uninstall Transform Features from a Linux server:

- 1. Log in as a root (administrator) user.
- For a console uninstall, enter this command: /opt/infoprint/itm/_uninst/uninstall_itm.sh
- 3. To uninstall only a specific transform, enter this command:

 /opt/infoprint/itm/_inst/feature/<transform_id>/_uninst/uninstall_tf_

 <transform_id>.sh where <transform_id> is the transform name.

Uninstalling Transform Features from a Windows server from the command line

This section describes how to uninstall Transform Features from the command line.

To uninstall Transform Features from a Windows server:

- 1. Log in as an administrator user.
- For a console uninstall, enter this command: install_path_uninst\uninstall.exe -i console
- 3. For a silent uninstall (does not produce any output and does not require user input), enter this command:

6

 $install_path \verb|\uninst\| uninstall.exe-isilent$

7. Installation planning checklist

This checklist contains tasks that can help you plan for your RICOH ProcessDirector installation.

Installation planning checklist

Check each item as you complete the task.

Task	Notes
Estimate your current and future storage and backup needs. Consider production volumes, print resource management, and failure recovery.	
Make sure that you have adequate network capacity.	
Determine which printers you want to use with RICOH ProcessDirector. When you define printers to RICOH ProcessDirector, you need this information: • Printer name • TCP/IP port number • TCP/IP address or host name • SNMP community name, if you want to use SNMP to monitor the printer	
You should also decide on the language for the printer driver component to use when it returns messages to RICOH ProcessDirector.	
Obtain the required hardware for your configuration that meets your storage and backup requirements See Hardware requirements, p. 30.	
Decide which database configuration to use with RICOH ProcessDirector: PostgreSQL supplied with RICOH ProcessDirector PostgreSQL installed locally or remotely. IBM DB2 supplied with RICOH ProcessDirector	
If you use your own copy of DB2: Decide whether to install DB2 on the primary computer or on a different computer. If you install DB2 on a different computer, determine the directory for RICOH ProcessDirector information.	
If you use your own copy of PostgreSQL:	

Task	Notes
 Decide whether to install the PostgreSQL database on the primary computer or on a different computer. If you have already installed a PostgreSQL database on a different computer, determine the directory for the database cluster and the PostgreSQL user name and password used by RICOH ProcessDirector. If you are using PostgreSQL on a different server, you must install either PostgreSQL or PostgreSQL command line tools on the primary server. 	
Establish a host name and IP address for the RICOH ProcessDirector computer. RICOH ProcessDirector supports IPv4 addresses.	
Determine the password to use when you log in to the RICOH ProcessDirector user interface with the aiw user name. The first time you log in to RICOH ProcessDirector with the default user name of aiw and the default password of aiw, you are prompted to change the password. The password must be 8 to 32 alphanumeric characters.	
Determine how many RICOH ProcessDirector user IDs you want to create and which authority you want each ID to have, such as monitor, operator, supervisor, or administrator. Determine what other authority groups you want to create and what actions they can do.	
If you want to use LDAP or Active Directory user IDs and passwords to authenticate RICOH ProcessDirector users, ask your LDAP administrator to create LDAP groups for each level of access you want to set up as a RICOH ProcessDirector security group.	
 Consider which job submission methods you are going to use to send jobs to RICOH ProcessDirector: You can copy or FTP files into hot folders, send files using the LPD protocol, or use the pdpr command. If you have the AFP Support feature, you can use Download for z/OS or AFP Download Plus. You can upload files manually using the Submit Jobs portlet on the Main page. 	

Task	Notes		
The job submission method you use depends on the system you are sending the jobs from. For more information, see Job submission, p. 51.			
Determine which resources must be available for RICOH ProcessDirector to use (such as standard and non-standard AFP fonts). Then, consider how you want to share your resources so they are available to RICOH ProcessDirector (for example, NFS or Samba).			
If you store your resources in the C:\aiw\aiw1\resources directory on your primary computer, all the RICOH ProcessDirector components, including any secondary servers, can find them with no additional configuration. RICOH ProcessDirector does not make any changes to that directory during updates, so you do not have to reload the resources when you install an update.			
Install the required software for your configuration (see Installing required software, p. 39).			
Install any optional software, such as Download for z/OS, AFP Download Plus, or InfoPrint Transform Manager (see Planning for optional software, p. 51).			
Change the language for the computer, if required: Windows Click Control Panel → Regional and Language Options.	RICOH ProcessDirector supports these languages and locales: • Brazilian Portuguese (pt_BR) • English (en_US) • French (fr_FR) • German (de_DE) • Italian (it_IT) • Japanese (ja_JP) • Spanish (es_ES)		

8. Accessibility

Ricoh strives to provide products with usable access for everyone, regardless of age or ability.

For more information about the commitment that we have made to accessibility, refer to the Accessibility page on the Ricoh website.

Accessibility features

Accessibility features help users who have disabilities, such as restricted mobility or limited vision, use information technology products successfully.

The major accessibility features in this product let you:

- Use screen readers, screen magnifiers, and other assistive technologies.
- Use a keyboard instead of a mouse.
- Change attributes such as volume, color, contrast, and font size.

In addition, the information center and the publications for the product are in an accessible format.

Keyboard navigation

This product uses standard Microsoft Windows navigation keys.



 You cannot use the Workflow tab, the AFP Indexer mode of RICOH Visual Workbench (which is part of the AFP Support feature), the AFP Editor feature, or the Whitespace Manager feature with the keyboard alone. They require a mouse.

RICOH ProcessDirector user interface shortcut keys

When the Jobs table on the Main page or a table on the Administration page has focus, you can use these shortcut keys:

User interface shortcut keys

Description	Ctrl + key
Select all objects in the table.	а
Open the field help for the currently selected property.	F1

When viewing a job in a workflow, you can use these shortcut keys:

View job in workflow shortcut keys

Description	Ctrl + key	
Zoom in.	+	
Zoom out.	-	
Return to the default zoom level.	0	

RICOH ProcessDirector workflow shortcut keys

On the Workflow Editor, you can use these shortcut keys:

Workflow shortcut keys

Description	Ctrl + key
Save the workflow.	Ctrl + s
Undo a previous action, including changes made on a step or connector property notebook.	Ctrl + z
Reverse an Undo action, including changes made on a step or connector property notebook.	Ctrl + y or Ctrl + Shift + z
Show or hide the side panel.	Ctrl + e
Show or hide the Map .	Ctrl + m
Zoom in.	Ctrl + +
Zoom out.	Ctrl + -
Reset the zoom to the default value.	Ctrl + 0
Reset the default size and location of the Map window.	Ctrl + d
Copy one or more steps. Steps must be selected first.	Ctrl + c
Delete one or more steps. Steps must be selected first.	Delete

GLOSSARY

This glossary defines technical terms and abbreviations used in RICOH ProcessDirector.

access control

In computer security, the methods and facilities used to ensure that a computer system and the data, system software, and application programs stored in it can be accessed only by authorized users in authorized ways.

Advanced Function Presentation (AFP)

A set of licensed programs, together with user applications, that use the all-points-addressable concept to print data on a wide variety of printers or display data on a variety of display devices. AFP also includes creating, formatting, archiving, retrieving, viewing, and distributing information.

AFP

See Advanced Function Presentation, .

client

In a distributed file system environment, a system that is dependent on a server to provide it with programs or access to programs.

client/server

In communications, the model of interaction in distributed data processing in which a program at one site sends a request to a program at another site and awaits a response. The requesting program is called a client; the answering program is called a server.

command

A request from a terminal or a specification in a batch-processing print file for the performance of an operation or the running of a particular program.

compatibility fonts

A group of AFP fonts that emulate the uniformly spaced and fixed-pitch fonts used with line printers. Compatibility fonts include 240-pel and 300-pel fonts.

File Transfer Protocol (FTP)

In the Internet suite of protocols, an application layer protocol that uses TCP and Telnet services to transfer bulk-data files between machines or hosts.

GIF

Graphics interchange format for images.

hostname

The network name for a print server or transform server. The host name is the fully qualified domain name or a specific subname of a fully qualified domain name. For example, if printserver1.boulder. ibm.com is the fully qualified domain name, either printserver1.boulder.ibm.com or printserver1 can be the host name. See also IP address, .

hot folder

A directory that receives input files that are submitted to RICOH ProcessDirector.

InfoPrint Manager for AIX

A print server that handles the scheduling, archiving, retrieving, and assembly of a print job and its related resource files.

IP address

In the Internet suite of protocols, the 32-bit address of a print server or transform server, expressed in dotted decimal notation. For example: 9.99.9.143. See also host name, .

ISO image

An image of an optical disc based on an International Organization for Standardization file system standard. A file containing an ISO image can be burned to a CD or DVD or mounted in an operating system as a virtual disc.

JPEG

Joint Photographic Experts Group image format.

Linux

An open source implementation of the UNIX system.

line printer daemon (LPD)

The receiving portion, or target, of a file transfer that receives the spooled file that was sent and places the file on a local output queue.

mount

To make a file system accessible.

OpenType font

An extension of the TrueType font format that adds support for PostScript outlines and more support for international character sets and advanced typographic control.

outline font

A font whose graphic character shapes are defined by mathematical equations rather than by raster patterns.

PDF

See Portable Document Format, .

Portable Document Format (PDF)

A universal file format that preserves the fonts, images, graphics, and layout of any source document so it can be viewed and printed on a variety of platforms.

PostScript (PS)

A page description language with graphics capabilities that was developed by Adobe Systems, Incorporated.

primary computer

A computer on which the RICOH ProcessDirector base product is installed and on which the primary server runs.

primary server

The component of the RICOH ProcessDirector base product that contains the PSF print driver and the RICOH ProcessDirector version of DB2. It manages all aspects of job processing; controls system settings; maintains a file system shared between all primary and application/secondary

servers; and processes each job through a series of steps, some of which can call other programs to do special processing.

print server

A computer to which one or more printers are connected or the process that manages those printers.

PS

See PostScript, .

raster font

A font in which the characters are defined directly by the raster bitmap.

root

The user name for the system user with the most authority.

secondary computer

A computer on which a RICOH ProcessDirector Secondary Server feature is installed and on which a secondary server runs.

secondary server

A RICOH ProcessDirector server that provides additional processing power and can run on the primary computer or on separate computers (secondary computers).

server

On a network, the computer that contains the data or provides the facilities to be accessed by other computers on the network.

spool

The system function of putting files or jobs into disk storage for later processing or printing.

transform server

The process that manages data and image transforms.

TIFF

Tagged image file format.

TrueType font

A font format based on scalable outline technology in which the graphic character shapes are based on quadratic curves. The font is described with a set of tables contained in a TrueType font file.

Web browser

A client program that initiates requests to a Web server and displays the information that the server returns.

Web server

The program that is capable of servicing Hypertext Transfer Protocol (HTTP) requests for display in a Web browser.