

COCKPIT5

Printing Solution Administrator Guide

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*Prepared by Dina Borisov,
Product manager*

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1. ABOUT THIS GUIDE

This guide is intended for system administrators who will perform the installation and quick setup of the COCKPIT5 Printing Solution in a COCKPIT5 Application Delivery environment. It provides the prerequisites and describes the installation and configuration process. This guide describes enough of the options to enable you to print from at least one COCKPIT5 client.

The examples in this guide are for the Application Delivery environment. However, the processes are identical for a Secure Browsing environment.

We highly recommend that you closely follow the instructions provided in this guide. The guide is organized so that you can read it from cover to cover in order to set up your first printing experience in a COCKPIT5 environment.

After reading this guide, you may refer to the Jetro COCKPIT5 Application Delivery Administrator Guide or the Jetro COCKPIT5 Secure Browsing Administrator Guide for a full description of all the COCKPIT5 options.

This guide contains the following chapters:

Chapter 1, Introduction, introduces the COCKPIT5 Printing Solution and presents the workflow for installing and configuring it.

Chapter 2, Installing the Printing Solution, describes how to install the servers that enable the Jetro COCKPIT5 Printing Solution and describes what happens when a COCKPIT5 client user prints.

Chapter 3, Configuring the Printing Solution, describes how to configure Jetro COCKPIT5's Printing Solution and how to define the policy for printing in your organization. It also describes how to configure a Print Terminal to be part of Jetro COCKPIT5's Printing Solution.

2. INTRODUCTION

This chapter introduces the COCKPIT5 Printing Solution and presents the workflow for installing and configuring it.

This chapter contains the following sections:

What is Jetro's Printing Solution?

Features and Benefits

Printing Solution Architecture

Installation and Configuration Workflow

2.1 What is Jetro's Printing Solution?

Jetro's Printing Solution is an optional add-on module that accompanies the COCKPIT5 Application Delivery and the COCKPIT2i™ Secure Browsing Solution to enable high performance Universal Printing, as well as Native Printing.

Using Jetro's Printing Solution organizations can enable users running a COCKPIT5 client to print on the printers in an organization whether they are connected to the organization's print terminals or to each user's local machine. It also enables users to print to a PDF virtual printer, which displays a print preview on the end user's machine using a default PDF viewer, without actually printing it.

Jetro's Printing Solution enables organizations to define and enforce printing policies that determine on which printers each user can print and how.

Advanced Universal Printing

Jetro's Universal Printing Solution enables Jetro COCKPIT5 end users to print on the printers that are connected to their local machine, a print server, or to a PDF virtual printer.

Jetro's Universal Printing synchronizes between properties of physical and virtual printers, thus achieving maximal printing fidelity. The solution features enhanced support for varying standard and non-standard properties including page sizes, resolutions, margins and more.

Multiple raw formats, including Postscript, PCL5 and PCL6 are enabled, as well as a choice of transport formats: Raw, EMF or PDF (including signed PDF documents).

Additional features include:

- Pre- and post- processing manipulation.
- Server-side physical tray selection.
- Local Print Dialog option.
- Control over printer properties at print-job level.
- Print job compression.

Native Printing

Jetro's Native Printing Solution enables Jetro COCKPIT5 end users to print on the printers that are connected to the local machine on which they are running the COCKPIT5 client.

This Printing Solution uses a driver mapping policy for COCKPIT5-based printing. This enables the mapping of each printer to its native driver and/or the universal driver. Support for direct printing to network printers reduces printing latency and bandwidth consumption. In addition, the solution supports specialized non-standard printers, such as: label printers, barcode printers and more.

The native printer driver must be pre-installed on the Terminal Server in order to enable this feature.

Comprehensive Management and Administration

An advanced Administration console based on an MMC-Style full client complements Jetro's Printing Solution. Using a highly granular rule-based automatic dynamic configuration, the console also employs an SQL-based audit trail and logging facility for enterprise-grade Business Intelligence (BI) and analytics. The Administration tool can be fully integrated with the management of both COCKPIT5 Application Delivery and COCKPIT2i Secure Browsing Solutions from Jetro, while also supporting COCKPIT-less Microsoft Terminal Services environments.

2.2 Features and Benefits

Advanced Universal Printing

- New methods and protocols for synchronizing between properties of physical and virtual printers, to achieve maximal printing fidelity.
- Enhanced support for varying standard and non-standard properties including page sizes, resolutions, margins and more.
- Server-side physical tray selection.
- Multiple raw formats, including Postscript, PCL5 and PCL6.
- A choice of transport formats: Raw, EMF or PDF (including signed PDF documents).
- Support for the printing of signed PDF documents.
- Supports pre- and post-processing manipulation such as shrink-to-fit, raster and more.
- Local Print Dialog option for manual intervention during the printing process.
- Control over printer properties.

Support Optional Native Printing

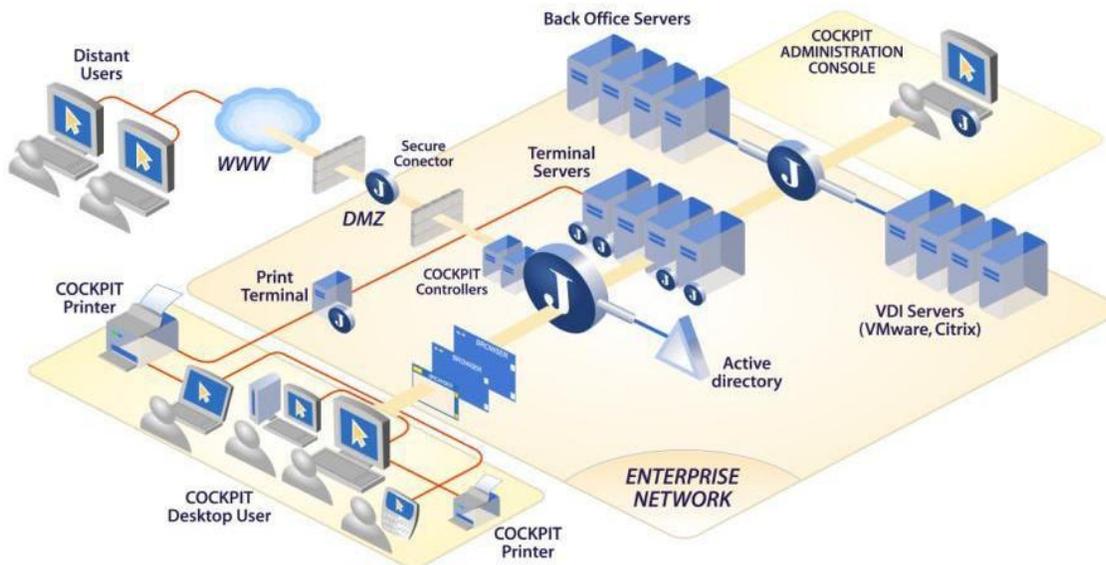
- Uses RDP driver mapping for COCKPIT-based printing.
- Map each printer to its native driver and/or the universal driver.
- Supports direct printing to network printers, thus reducing printing latency and network bandwidth consumption.
- Supports specialized non-standard printers such as: label and barcode printers and so on.

2.3 Print Management

- Highly granular rule-based automatic dynamic policy configuration based on parameters such as:
- Application
- User
- Host
- Client Name
- Client IP Address
- Printer Name
- Printer IP Address
- Printer Type and groups thereof

2.4 Printing Solution Architecture

The following diagram shows a typical Application Delivery implementation and the components that enable universal and native printing:



Jetro's Printing Solution can be integrated into any standard Jetro COCKPIT5 installation. It uses all the existing components as-is, such as: the administrator console, Controller and Terminal Servers to enable

users running a COCKPIT5 client to print. For a full description of the components of a Jetro COCKPIT5 Application Delivery and a Jetro COCKPIT5 Secure Browsing system refer to their administrator guides.

Only two additional components are required to install Jetro's Printing Solution:

- **Print Server:** To be installed on the COCKPIT5 farm's Terminal Servers. Installation instructions are provided in the *Installing the COCKPIT5 Print Server* section on page 15.
- **Print Terminal Server:** To be installed on the COCKPIT5 farm's printing server, if one exist. Installation instructions are provided in the *Installing the COCKPIT5 Print Terminal Server* section on page 20.

There are no installation or configuration procedures required for the Controller, gateways, COCKPIT5 Application Delivery client, Secure Browsing client or COCKPIT5 administrator console. The screens that enable the configuration of Jetro's Printing Solution are installed and available in the administrator console by default.

Installation and Configuration Workflow

The following presents the workflow for installing and configuring the various components of a Jetro COCKPIT5 Printing Solution. This procedure can be performed quite quickly and may vary between organizations.

We highly recommend that you closely follow the instructions provided in this guide. This guide is organized so that you can read it from cover to cover in order to set up your first COCKPIT5 printing experience.

3. INSTALLING THE PRINTING SOLUTION

This chapter describes how to install the servers that enable the Jetro COCKPIT5 Printing Solution and what happens when a user prints.

- This chapter contains the following sections:
- System Requirements
- Installing the COCKPIT5 Print Server
- What Happens When a User Prints?
- Installing the COCKPIT5 Print Terminal Server

System Requirements

Before installing Jetro's Printing Solution, a COCKPIT5 Application Delivery or Secure Browsing environment must be installed. The COCKPIT5 system can be installed on any Terminal Server that is suitable for Microsoft Window Server 2003 SP2 or Window Server 2008 (X86 and X64) architecture. Each Terminal Server must be a member server in one of the corporate Active Directory domains.

Jetro's Printing Solution requires the installation of a Print Server component on the Terminal Servers of a COCKPIT5 farm.

If your organization uses a Print Terminal, then a Print Terminal Server component must be installed there.

No additional requirements are necessary.



If this window is displayed, it is typically displayed three times, once for each printer driver (PCL5, PCL6 and PostScript) that is installed. It is displayed because the printer drivers have not passed Windows Logo testing which attempts to verify whether a driver is compatible with this version of Windows before installing it.

What Is Added to the Terminal Server?

The following components are added to the Terminal Server after installation of the Print Server:

Printer Drivers

Print Processor

Printer Drivers

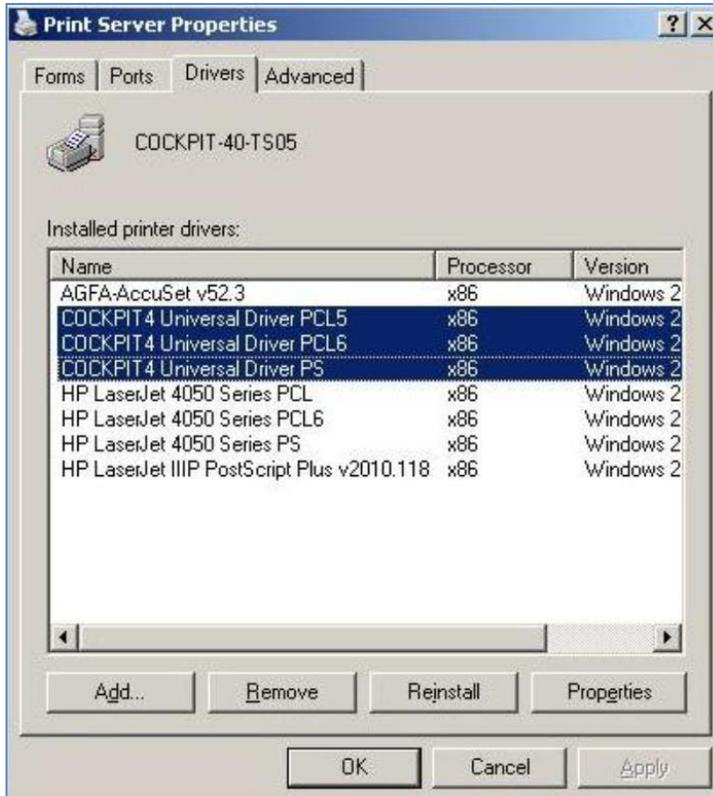
This installation adds three printer drivers to the Terminal Server:

COCKPIT5 Universal Driver PCL5

COCKPIT5 Universal Driver PCL6

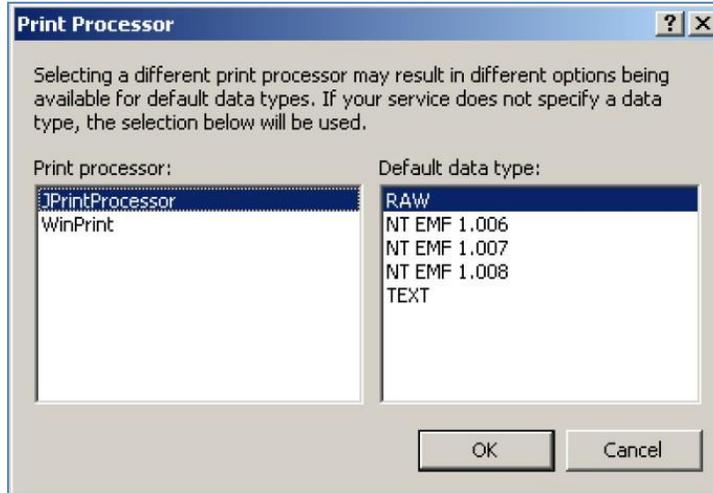
COCKPIT5 Universal Driver PS

The **Drivers** tab of the following window shows two of them:



Print Processor

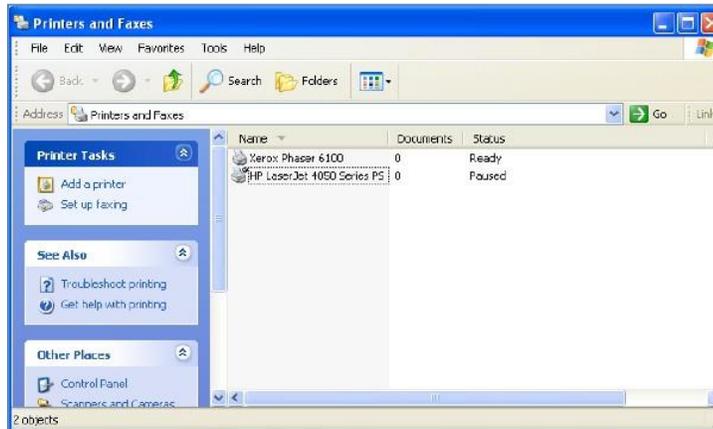
This installation also adds another print processor called **JPrintProcessor** to the Terminal Server, as shown below:



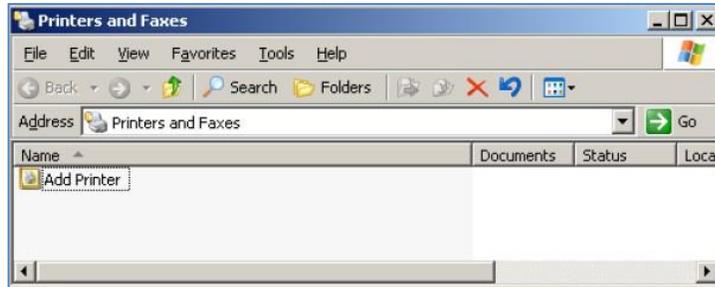
What Happens When a User Prints?

The section describes the processes that occur when a user of a COCKPIT5 client prints:

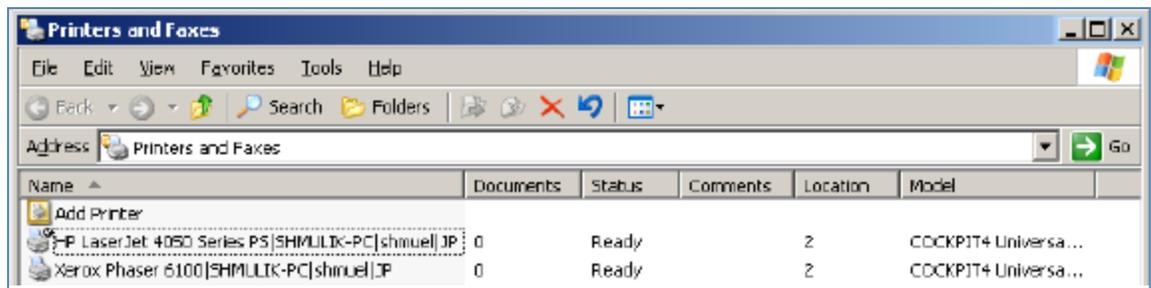
1. Before a user launches an application on a Terminal Server the user can see the printers connected to his/her machine in the Printers and Faxes window of the Control Panel. For example, as shown below:



2. Before a user launches an application on a Terminal Server the Printers and Faxes window only shows the printers that are connected to the Terminal Server machine. Typically no printers are connected to a Terminal Server machine. For example, as shown below:



3. When a user of a COCKPIT5 client launches an application on a Terminal Server, a session is opened between them.
 4. The printers that were defined on this user's machine are then added to this Terminal Server for this specific user. These printers are only available to this specific user.
- **Standard Printer Names:** The name of this printer appears on the Terminal Server with the following format:
Printer Name|User Name|Domain. The following shows the Printer and Faxes window of a Terminal Server after a COCKPIT5 client launched an application on it



As you can see it shows the same printer names as were shown on the user's machine with the suffixes described above.

- **Print Terminal Printer Names:** The name of this printer appears on the Terminal Server with the following format: Printer Name | Print Terminal Address.
 - **Virtual Printer Names:** The name of this printer appears on the Terminal Server with the following format: Printer Name | User Name | Domain.
5. When a user of a COCKPIT5 client prints, the Terminal Server then prepares the file to be printed in the format specified by the Print Client Policy, which can be either PDF EMF or Raw (PCL5, PCL6 or PostScript).
 6. The file is then transferred to the local user's machine for printing. EMF files are transferred directly to the spooler for printing.
 7. When this user closes the session with this Terminal Server, then these printers are removed from the Terminal Server.

3.1 Installing the COCKPIT5 Print Driver

Print Driver must be installed on Terminal Servers

To install Print Driver

1. Logon to the Server that you want to assign as a Print Driver, and login as Domain Admin to the console (session 0).
2. Run COCKPIT5-PrinterDrivers.exe from the files that you received from the Jetro package, and follow the wizard's instructions.

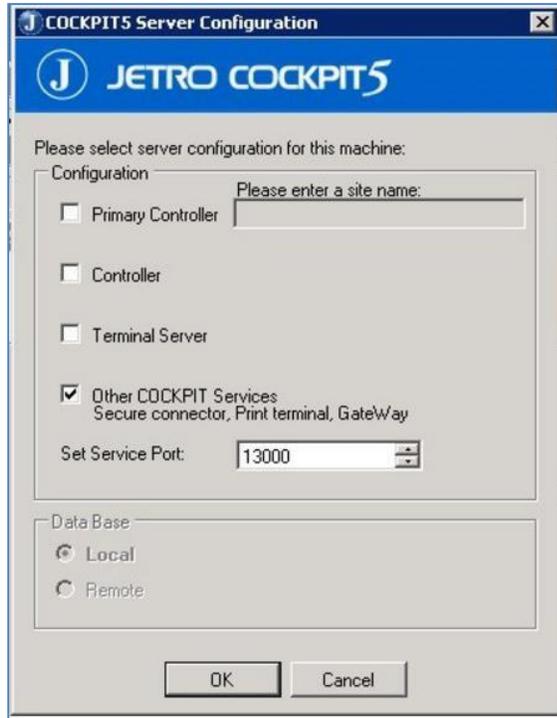


3.2 Installing the COCKPIT5 Print Terminal Server

A Print Terminal serves as a hub and server that enables multiple workstations to access the printers that are connected to this Print Terminal. If your organization uses a Print Terminal, then install the following component on it.

To install a Print Terminal Server:

1. Run **COCKPIT5-Server.exe** from the files that you received from the Jetro package, and follow the wizard's instructions until you reach the **Server Configuration** screen.
2. Select the Other COCKPIT5 services checkbox.



3. Continue to follow the wizard's instructions
4. Click Finish.

4. CONFIGURING THE PRINTING SOLUTION

This chapter describes how to configure Jetro COCKPIT5's Printing Solution and how to define the policy for printing in your organization. It also describes how to configure a Print Terminal to be part of Jetro COCKPIT5's Printing Solution.

This chapter contains the following sections:

- Configuring a Print Terminal
- Configuring a Printing Policy

4.1 Configuring a Print Terminal

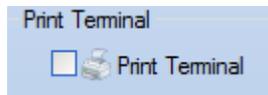
If the organization is using a Print Terminal, then it must be configured using the administrator console. If not, then you can skip this section.

To configure the Print Terminal:

1. In the administrator console, select the **Network** → **All Hosts** → **Add a new Host** and follow the Wizard instructions.



2. After you completed the Wizard, open Network → All Hosts → Host you created → Services and check the Print Terminal check box

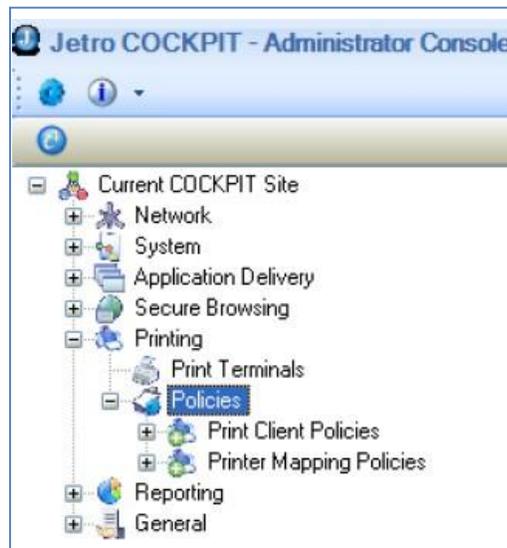


4.2 Configuring a Printing Policy

The **Policies** branch enables you to define the policy that determines which users can use which printers and how.

To define a Printing policy:

1. In the administrator console, select the **Printing** → **Policies** option to display the two types of printing policies that can be defined, as shown below:



2. Configure the **Print Client Policies** tab, as described in the *Configuring Print Client Policies* section below. This is the printing policy that determines which users can print to which printers and how they can print.
3. Configure the **Printer Mapping Policies** tab, as described in the *Configuring Printer Mapping Policies* section on page 51. This is the printing policy that is assigned to printers.

NOTE:

If both a Print Client Policy and a Printer Mapping Policy applies to a printing request, then the Printer Mapping Policy overrides the Print Client Policy.

4. Click the **Save and Close** button.

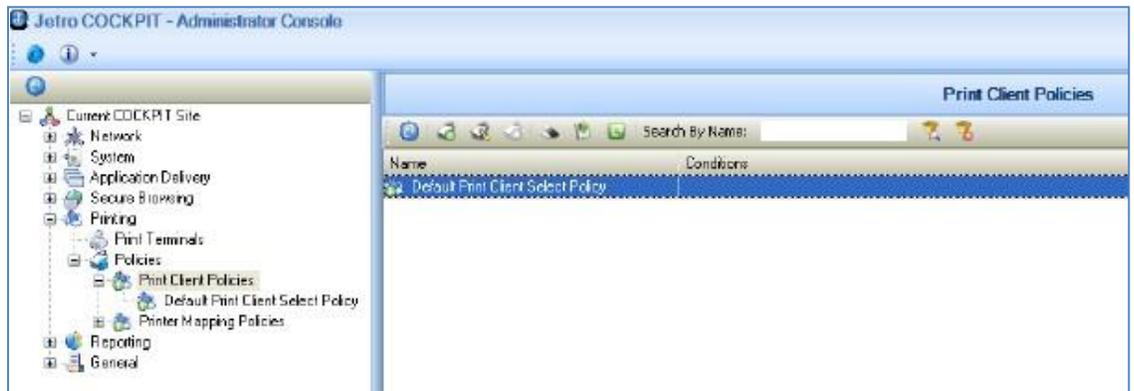
4.3 Configuring Print Client Policies

The Default Print Client Policy defines the printing policy of COCKPIT5 clients. The default policy is assigned to users to whom no other policy has been assigned.

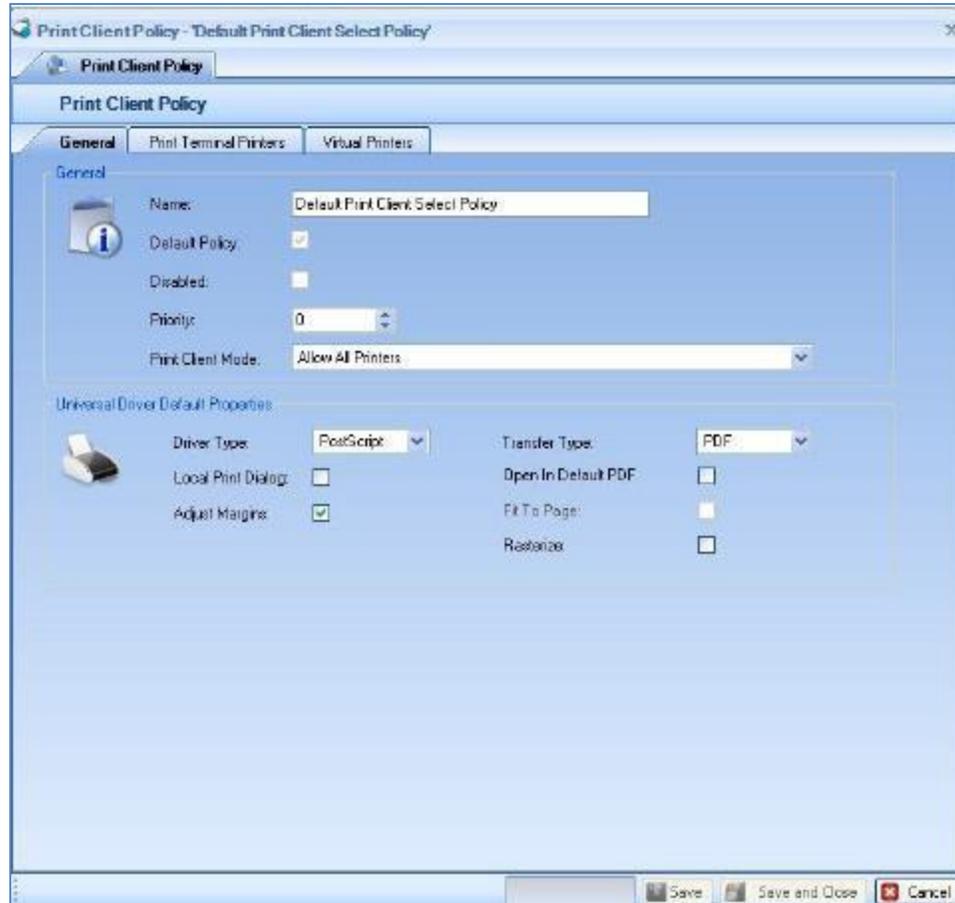
You can modify the default policy and add another policy, if required. You cannot delete this default policy. If the conditions of one of the additional policies apply to a user, then the settings of that policy are applied for that user instead of the default policy.

To modify the Default Print Client Policy:

1. Select the **Printing → Policies → Print Client Policies** branch to display the following:



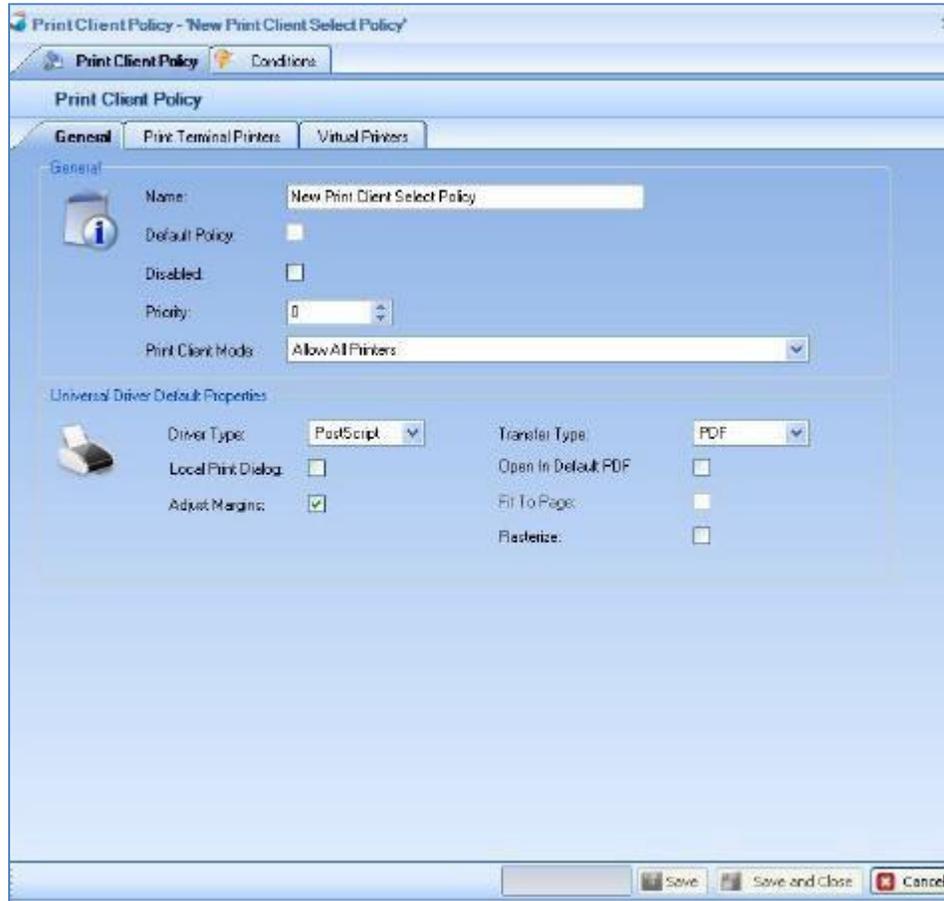
2. Double-click on the Default Client Select Policy branch or row to display the default policy, as shown below:



3. Modify the default policy as required and then click the **Save and Close** button. The options that you can configure for this policy are described below.

To create a new Print Client Policy:

1. Select the Printing → Policies → Print Client Policies branch.
2. Right-click in the center of the page and select New Policy or click the New Policy tool to display the following window:



3. Under the **Print Client Policy** tab, three sub-tabs of information are provided for configuring the Print Client Policy, as follows:

- General Tab
- Print Terminal Policies Tab
- Virtual Printers Tab

Fill them out as required.

4. Under the **Conditions** tab, five sub-tabs of information are provided for configuring the users and applications to which the Print Client Policy is applied, as follows:

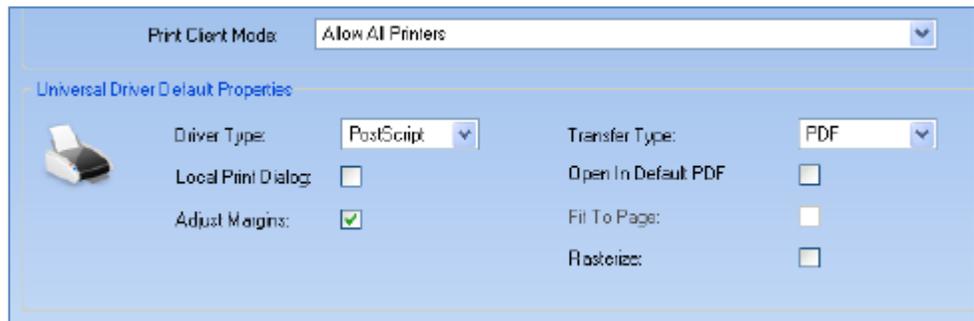
- Security Tab
- IP Ranges Tab
- Client PC Tab
- Host Tab

5. Application Tab

5 Click the **Save and Close** button.

General Tab

- The General tab is shown above. Fill out the general information in the General tab, as follows:
- **Name:** The name of this Print Client policy as it appears in COCKPIT5. We recommend specifying a meaningful name.
- **Default Policy:** This option is checked to specify that this is the default Print Client policy. This means that this policy is assigned to users if no other Print Client policy is assigned to them. The system is installed with a single default policy, and only one policy can be defined as the default policy.
- **Disabled:** Disables this policy. The default Print Client policy cannot be disabled.
- **Priority:** In case more than one Print Client Policy applies to a user, then the policy with the highest priority is applied. If two or more such policies have an identical priority, then one of them is applied randomly.
- In the **Print Client Mode** field, select one of the four options, as follows. The bottom part of the window changes according to the option that you select.
- **Allow All Printers:** Awards users with permission to access all local, Print Terminal and Virtual printers. This means that a user to whom this policy applies can access all the printers that are connected to his/her local machine, all the printers connected to the Print Terminal (if there is one), and all Virtual printers.



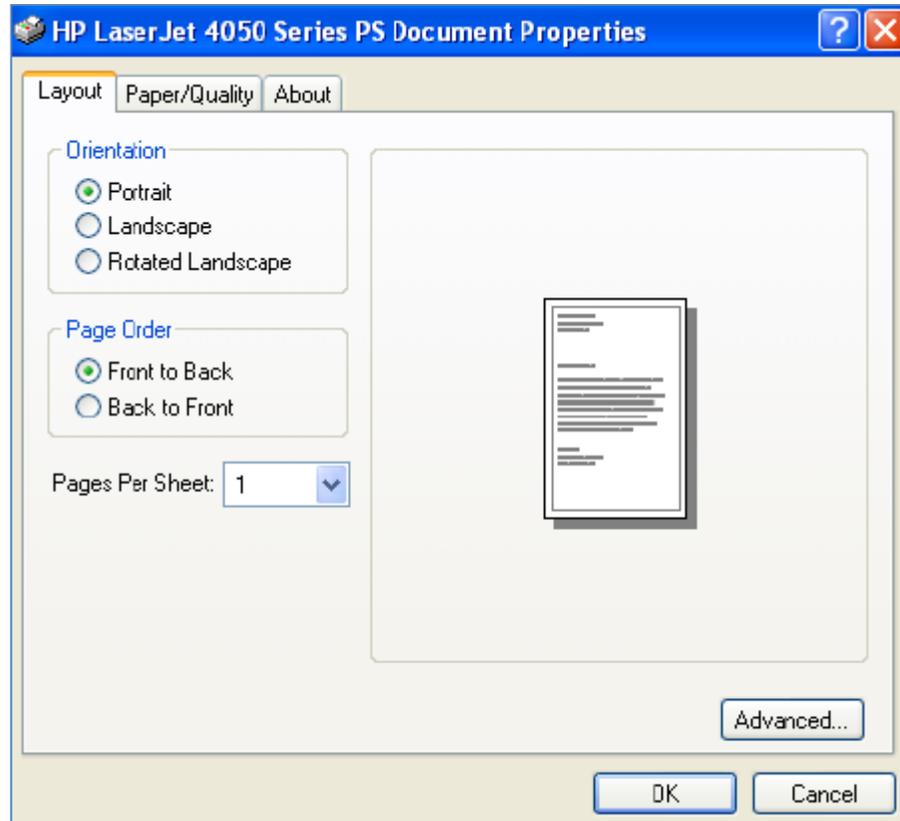
Fill in the following fields to define this option. The following fields only apply to the printers that are attached to a user's local machine:

Driver Type: Select one of the three printer drivers that were added to the Terminal Server during installation, as follows:

- PCL5
- PCL6
- PostScript

This Terminal Server printing driver is assigned to the user to which this policy is assigned.

- **Local Print Dialog:** This option displays the local printing dialog on the user's own machine after a user prints and the job is transferred to the user's local machine. An example window is shown below:



This option is not the default and is only recommended when complicated printing options are required, such as Watermarks.

- **Adjust Margins:** This option is only available if the **PostScript** option was selected in the **Driver Type** field, described above. Each printer has its own physical offsets. Selecting this option specifies that the margins of the printout are adjusted to the physical margins of the selected printer. Selecting this option disables the **Fit to Page** option, described below.

Transfer Type: Specifies the format to be used to transfer the file to be printed, as follows:

PDF: Transfers the file to be printed as a PDF. The following fields only apply when the **PDF** option is selected:

- **Open in Default PDF:** Specifies that after the PDF file is transferred to the local machine, it opens in the local default PDF viewer (for example: Acrobat reader). The user can then print it from there.
- **Fit To Page:** Fits the printed file to the printing paper.
- **Rasterize:** Converts a vector image to a bitmap image.

NOTE:

A user must have PDF viewer installed on their computer in order to open the PDF. If no default PDF viewer is installed on the local machine, then the user is asked to save the file locally.

- RAW: Transfers the file to be printed in its raw format according to the selected Driver Type, meaning PostScript, PCL5 or PCL6, as described above.
- EMF: (Not recommended) Transfers the file to be printed as a spooler service file.

Allow Only Default Printer (Disables all other printers): Only awards permission to access the default printer connected to the user's own machine in addition to the default print terminal printers and virtual printers. This option shows the same fields as are displayed for the **Allow All Printers** option, describe above.

Disable Client Printers: Prevents access to the printers connected to the user's own machine, while enabling access to print terminal printers and virtual printers. No additional fields need be configured.

Disable All Printers: Prevents access to all printers. No additional fields need be configured.

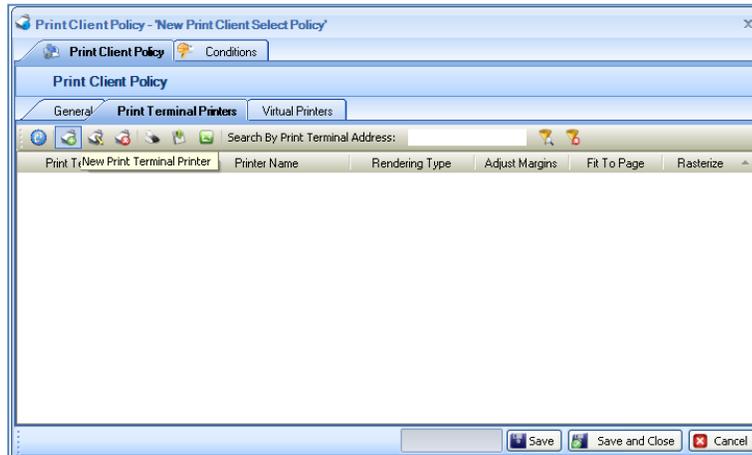
Print Terminal Policies Tab

Configuring the information in this tab enables users to access the printers of a Print Terminal in your organization.

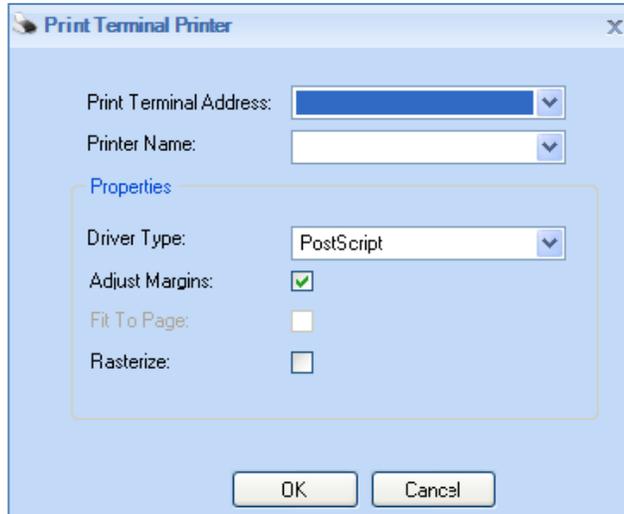
To configure the Print Terminal Policy:

1. Select the Printing → Policies → Print Client Policies branch.

Select the Print Terminal Priorities tab to display the following:



3. Right-click in the center of the page and select **New Print Terminal Printer** or click the **New Print Terminal Printer** tool to display the following window:



4. Fill out the general information in the **Print Terminal Policies** tab, as follows:
 - **Print Terminal Address:** Select one of the Print Terminals that was defined in the **Print Terminal** branch, as described in the *Configuring a Print Terminal* section
 - **Printer Name:** Displays a dropdown list of the printers that are defined for this Print Terminal, as described in the *Configuring a Print Terminal* section
 - **Properties:** Fill in the following fields to define this option:
 - Driver Type/Adjust Margins/Fit To Paper/Rasterize: These are the same fields as were described in the General tab

Virtual Printers Tab

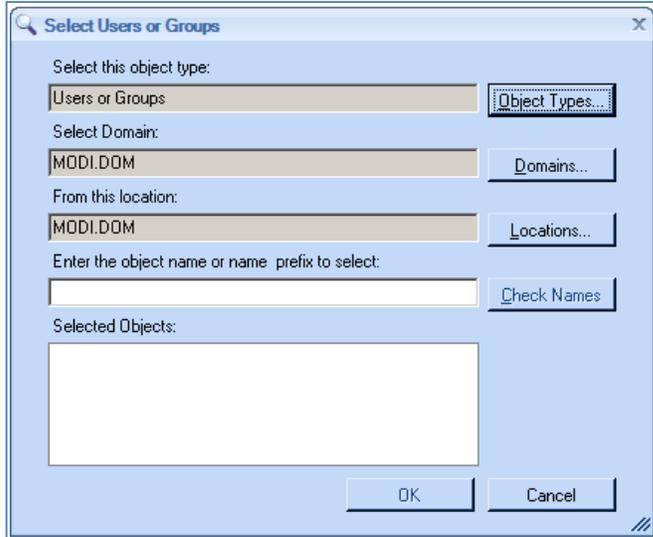
Configuring the information in this tab enables users to access virtual PDF printers. Users can use virtual PDF printers even if they do not have any physical printers connected.

To configure a Virtual Printer:

1. Select the Printing → Policies → Print Client Policies branch.
2. Select the Virtual Printers tab.
3. Right-click in the center of the page and select New Virtual Printer or click the New Virtual Printer tool.
4. Select the Driver Type to be used for this virtual printer.

Security Tab

The **Security** tab enables you to define the users and user groups to which this policy applies. You can add users or user groups from the internal Active Directory by clicking the **Add New** button to display the following window in which you can select users.



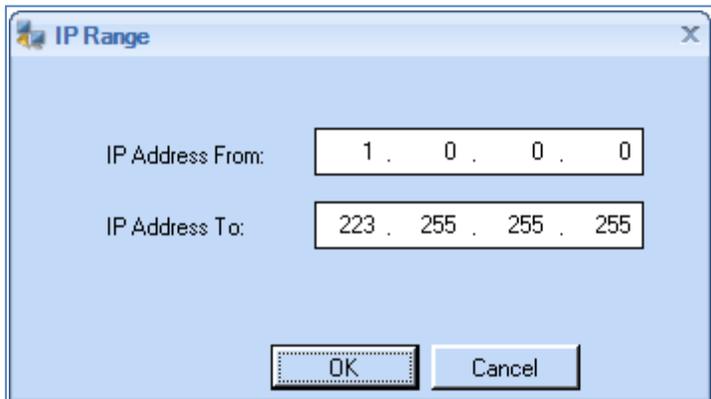
NOTE:

Any field in a condition that consists of a string can use wildcards as part of the string.

Click **OK** and click **Save**.

IP Ranges Tab

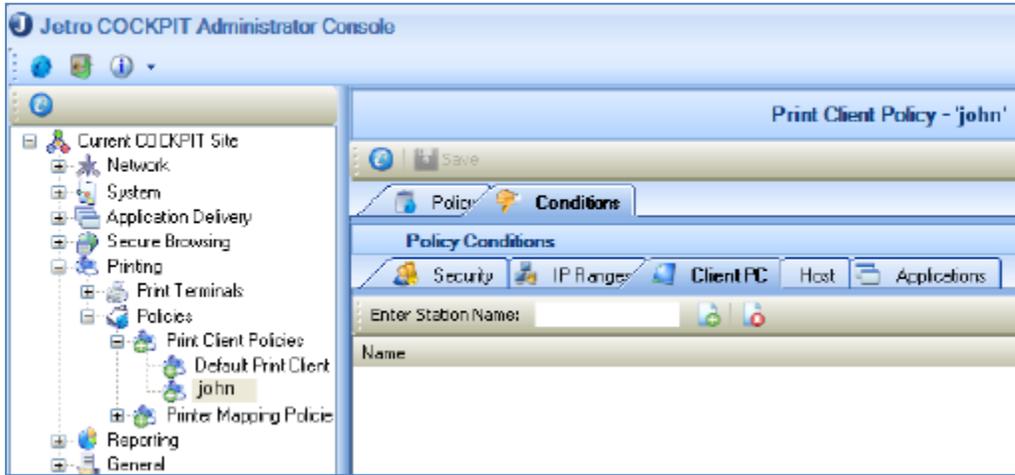
The IP Ranges tab enables you to specify ranges of user machine IP addresses to which this policy applies. Click the Add New button to display the following window in which you can add IP address ranges:



Click **OK** and click **Save**.

Client PC Tab

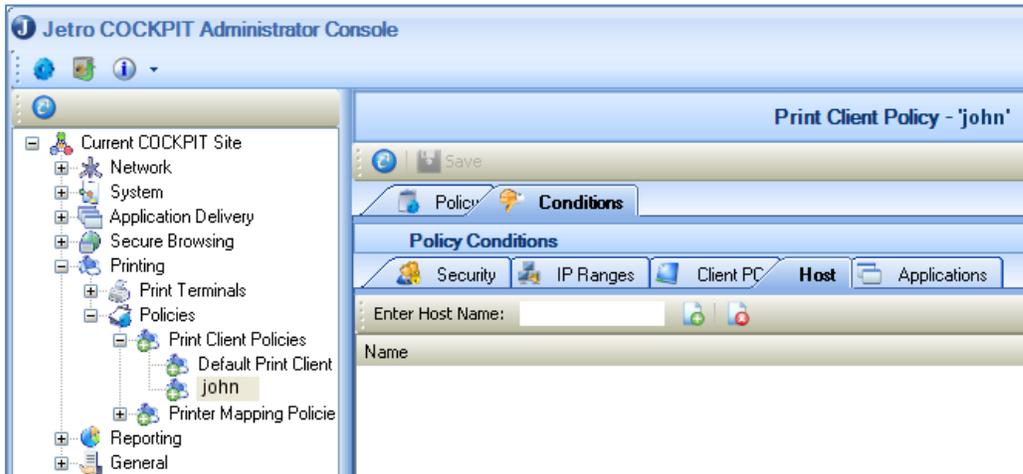
The **Client PC** tab enables you to specify the end user machine names to which this policy applies. Click the **Add New** button to display the following window:



Click **OK** and click **Save**.

Host Tab

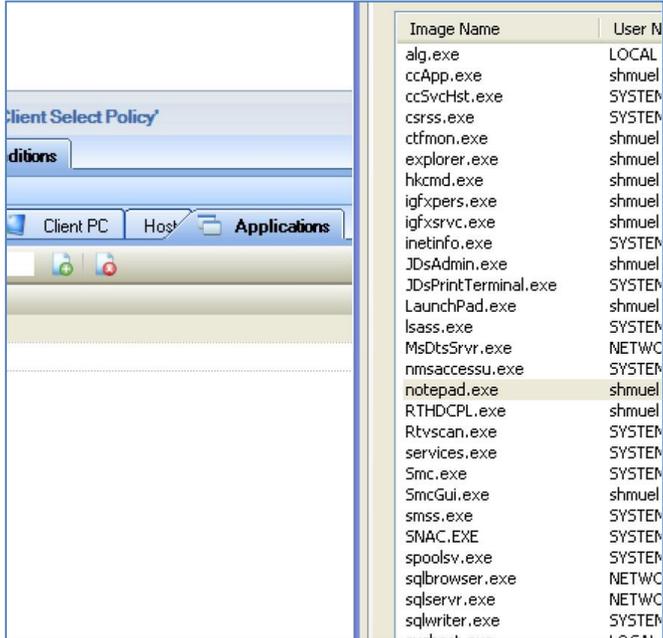
The **Host** tab enables you to define the Terminal Servers to which this policy applies. Click the **Add New** button to display the following window:



Click **OK** and click **Save**.

Application Tab

The **Applications** tab enables you to define the applications to which this policy applies. Click the **Add New** button to display the following window. Make sure to use the name of the application as it is shown in the Windows process manager, as shown below. The name is case sensitive.



Click **OK** and click **Save**.

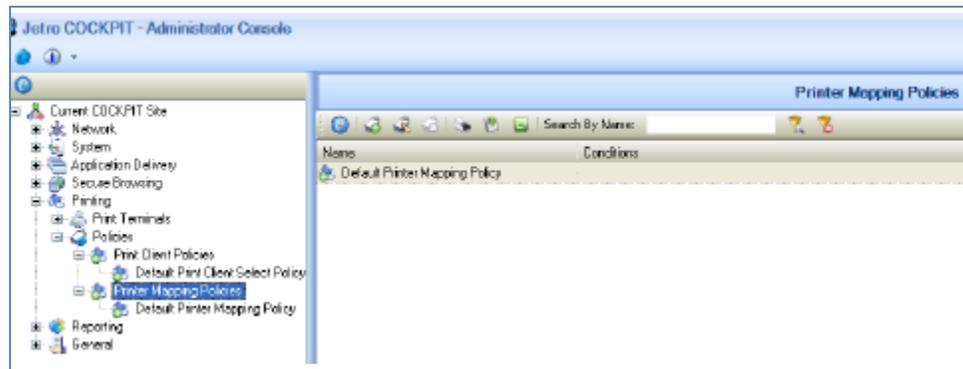
4.4 Configuring Printer Mapping Policies

The Printer Mapping Policies define a policy per printer. Most of the definitions provided for this policy are the same ones as provided for the Print Client Policies except that they are applied per printer.

The Default Printer Mapping Policy is assigned to users to whom no other policy has been assigned. You can modify the policy defined below and add another policy, if required. You cannot delete this default policy. If the conditions of one of the additional policies apply to a user, then the settings of that policy are used for that user instead of the default policy.

To modify the Default Printer Mapping Policy:

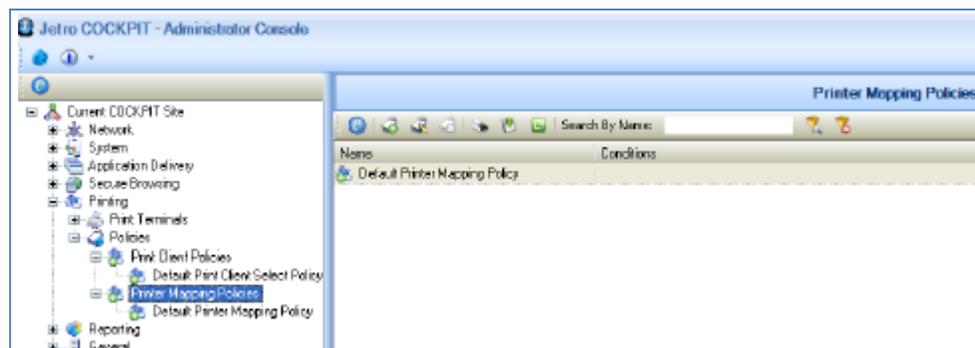
1. Select the **Printing → Policies → Printer Mapping Policies** branch to display the following:



2. Double-click on the **Default Printer Mapping Policy** branch or row to display the default policy.
3. Modify the default policy as required and then click the **Save** button. The options that you can configure for this policy are described below.

To create a new Printer Mapping Policy:

1. Select the **Printing → Policies → Print Mapping Policies** branch to display the following window:

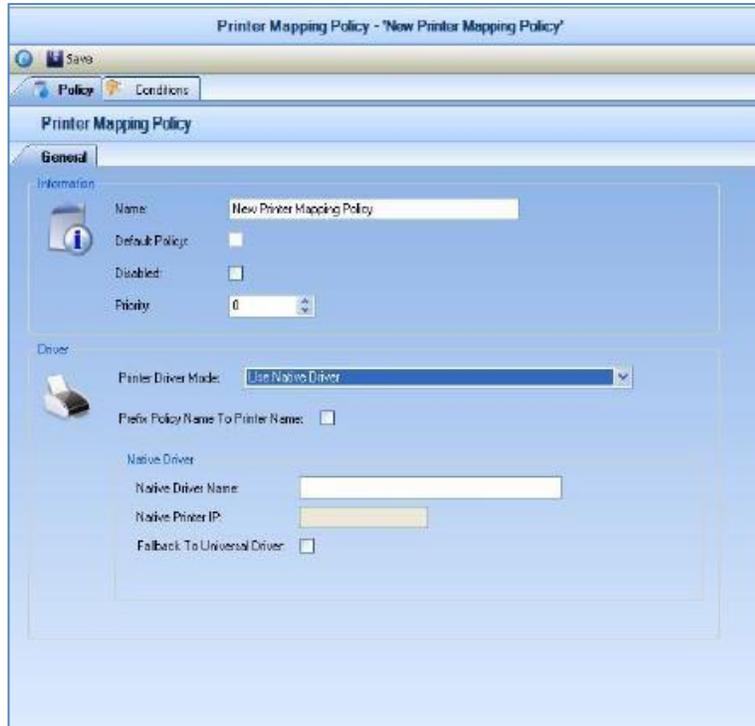


- Right-click in the center of the page and select **New Policy** or click the **New Policy** tool. The **Printer Mapping Policy** tab is displayed, as shown below:



Most of the definitions provided for this policy are the same ones as provided for the Print Client Policies except that they are applied per printer. These fields are not described again. You may refer to the *Configuring Print Client Policies* section on page 28 for more information. Only the unique fields are described below.

- In the **Printer Driver Mode** field select one of the following options to specify the printer driver to be used by the Terminal Server to handle the selected printer, as follows:
 - Don't Change Printer Driver:** Use the printer driver assigned to this printer according to the Print Client Policy of the user that is printing.
 - Use Native Driver:** Enables you to specify that the printer's native driver is used instead of one of the Universal drivers (PCL5, PCL6 or PostScript) installed on the Terminal Server. In order to use the native driver, a condition must be defined in the **Conditions** ▯ **Print Driver** tab, as described on page 55, that specifies the original printer driver from the user's local machine.



- If the native driver that is specified in the **Native Driver Name** field is not on the Terminal Server on which the printer is created, and **Fallback To Universal Driver** option is checked, then the printer will be created with the PostScript universal driver. Otherwise, if this fallback option is not checked, then the printer will not be created at all.

Printer Mapping Policy - 'New Printer Mapping Policy'

Save

Policy Conditions

Printer Mapping Policy

General

Information

Name: New Printer Mapping Policy

Default Policy:

Disabled:

Priority: 0

Driver

Printer Driver Mode: Use Native Driver With TCP/IP Port To Printer

Prefix Policy Name To Printer Name:

Native Driver

Native Driver Name:

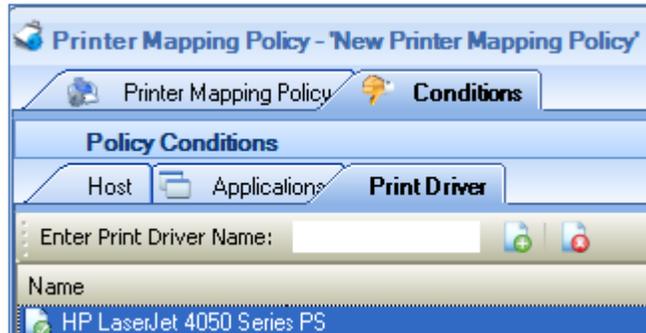
Native Printer IP:

Fallback To Universal Driver:

This option behaves in the same manner as the **Use Native Driver** option, described above, with one difference.

The difference is that you can specify the IP Address of the physical printer. In this case, when the printer is created on the Terminal Server, it will be assigned with a new **Standard TCP/IP Port** that has the IP address of that printer and **not** the port **JPrintPort**.

4. Check the **Prefix Policy Name to Printer Name** field to specify that the policy name appears as a prefix on the Terminal Server. The suffixes that are added to the printers that appear on the Terminal Server when a user launches an application there are described in the *What Happens When a User Prints?*
5. Select the **Conditions** tab to specify the hosts, applications and printer drivers to which this policy applies, as follows:
 - In the **Host** tab specify the Terminal Servers to which this policy applies. This tab is similar to the **Host** tab of the **Print Client Polices** branch, as described on page 28.
 - In the **Applications** tab specify the applications to which this policy applies. This tab is similar to the **Application** tab of the **Print Client Polices** branch, as described on page 28.
 - In the **Print Driver** tab specify the native printer driver to which this policy applies, as shown below:



6. Click the **Save and Close** button.