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1. Introduction

This guide explains how to install and configure the PrinterOn® Server.

The PrinterOn Server allows your users to print without installing drivers and without a difficult setup or complicated configuration. Using the PrinterOn Server web print page, users submit print jobs to any printer that you enable within your PrinterOn Server.

The PrinterOn Server software consists of several components that work together to enable web-based printing from PCs and laptops with Internet access. Components installed with the PrinterOn Server include:

- PrinterOn Configuration Manager – provides a single centralized management console for all software components, servers and options
- PrinterOn Central Print Services (CPS) – includes the CPS web printing pages, which you host on your network to allow uploading of documents to the service, and the CPS Administration Console
- PrinterOn PrintAnywhere® server – provides document processing and rendering
- PrinterOn Print Delivery Station – collects print jobs and provides privacy release capability
- PrinterOn Print Delivery Gateway – provides support for printing from a variety of devices and systems including iOS, Google Cloud Print compatible applications or traditional print queues.

The PrinterOn Server can be configured for several popular system integration models or customized as needed using the available HTML and Java source code. It is easy to deploy and may be hosted in multiple local or remote network scenarios. The PrinterOn Server has been designed for optional integration with existing network infrastructures, including LDAP and Print Management Systems.

1.1. Architecture Overview
2. Before you begin

Prior to starting the setup of your PrinterOn Server, please review all of the system requirements, recommended applications to install and other installation requirements.

Please note that in most deployments the PrinterOn software components are installed on a single server. In some cases the individual components may be installed on separate servers to facilitate load balancing and clustering. The requirements below are for single server installations.

The PrinterOn Server should be installed on a dedicated operating system image. This may be a dedicated physical server or virtual machine managed by software such as VMWare.

2.1. Account Requirements

You must have Local Administrator access on the computer that will run the PrinterOn Server software. A dedicated account should be created for the PrinterOn Server. The administrator account must have a password (blank password is not allowed).

2.2. Hardware Requirements

- A dedicated physical server or virtual machine
- Intel compatible processor with 2GHz multi-core processor
- 2 GB RAM minimum for dedicated servers (4 GB recommended)
- 6 GB of free disk space for PrinterOn Server software and third party applications
2.3. **Software Requirements**

The PrinterOn Server should be installed on a dedicated server or virtual machine to ensure there are no conflicts with other installed software or services.

- **Windows Server 2008 including 2008R2 (64-bit) with current patches installed**
  - All Editions supported except HPC
- **Windows Server 2012 including 2012R2 (with current patches installed)**
  - All Editions supported
- (Recommended) **Microsoft Office 2007 or later**
  - Including Word, Excel, PowerPoint and Visio
  - If integrating with Microsoft Exchange, installing Microsoft Outlook is recommended
- (Recommended) **OpenOffice.org or LibreOffice 5.0 or later (32-bit only)**
  - Note that only OpenOffice or LibreOffice should be installed at one time.
- (Required) **Internet Explorer 10 or later with latest patches**
- **Apache Tomcat (included with installation)**
- **Microsoft SQL Server Express (included with installation)**
- **Microsoft .Net Framework 3.5.1 and Microsoft .net Framework 4 (installed by MSL SQ Server)**

2.3.1. **SQL Server Installation**

The server installation includes a copy of the Microsoft SQL Server. When installing the PrinterOn Server, ensure that there are no other instances of SQL Server installed.

If any issues are found during the installation of the SQL Server, it is recommended that the Microsoft .NET framework is installed manually prior to the PrinterOn Server.

2.3.2. **Document Processing Quality**

For the greatest quality output, it is recommended that the native application is installed with the PrinterOn Server. For example, printing Microsoft Office documents with LibreOffice will not provide the same output quality.
2.4. **Network Requirements**

For internal network communication, inbound and outbound access on ports 80, 443 and 631 is recommended to and from the server.

2.4.1. **Optional Hybrid Deployment Network Requirement**

DNS and network routing must allow the PrinterOn Server to communicate with the following address:

- [http://www.printeron.net](http://www.printeron.net)
- [https://secure1.printeron.net](https://secure1.printeron.net)
- [https://download1.printeron.net](https://download1.printeron.net)

Outgoing Internet communication on TCP port 443 must be permitted, along with the responses that are returned. Internet access is available at all times.
3. Setting up your PrinterOn Server

Before you set up the PrinterOn Server, please review all of the system requirements in the previous section. This guide will walk through a common deployment and assist in configuring a recommended configuration.

To set up a PrinterOn Server, you need to:

1. Obtain your license file
2. Install the PrinterOn Server software
3. Connect a printer to your PrinterOn Server
4. Test your PrinterOn Server system with a web upload submission
5. Configure additional submission methods

3.1. Your PrinterOn account

Before you can set up the PrinterOn Server, you must have an active PrinterOn account at www.printeron.com. PrinterOn will create an initial administrator account for you. These details will be emailed to the main contact person. As an administrator, you can grant others admin privileges using their email address.

3.2. Retrieving your License file

After your PrinterOn account has been created, you will receive an email message with your license file attached. Save the text file attachment in a location that is accessible to the computer where you will install the PrinterOn software.

You can retrieve your PrinterOn License at any time by visiting: www.printeron.com/administrators

3.3. Updating Your License File

Changes to your PrinterOn license must be applied to the server before taking effect. Adding additional printer licenses, or extending the term of the license requires that a new license is uploaded. This can easily be done using the Licensing Tab in the Configuration Manager.

- Select Home
- Select Licensing and scroll to the bottom of the page

[Update License] [Download License]

- Select Update License and follow the prompts

NOTE: You MUST update your license before the term of the license expires to continue operation. The server will stop operation after the license expires.
4. Installing the PrinterOn Server

4.1. PrinterOn Server Prerequisites

Before you begin, verify:

<table>
<thead>
<tr>
<th>Prerequisite Checklist</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td>You have your PrinterOn license file in a location that is accessible to the computer where you are installing your server</td>
</tr>
<tr>
<td>☐</td>
<td>Your Windows User Account is set to log on as local administrator and uses a non-blank password</td>
</tr>
<tr>
<td></td>
<td>You have logged in as this user prior to starting the installation</td>
</tr>
<tr>
<td>☐</td>
<td>All Windows Updates have been performed</td>
</tr>
<tr>
<td>☐</td>
<td>Microsoft Office and/or LibreOffice/OpenOffice is installed on this computer, using the same Windows User Account used to install PrinterOn Server (see Recommended Applications)</td>
</tr>
<tr>
<td></td>
<td>Each application included with Microsoft Office and/or LibreOffice/OpenOffice should be started once to ensure all startup processes are complete</td>
</tr>
<tr>
<td>☐</td>
<td>IIS (Internet Information Services), if installed, is disabled</td>
</tr>
</tbody>
</table>
4.2. PrinterOn Server Installation

1. Run **PSIM.exe**
2. Click **Next** at the Welcome screen.
3. Click **Yes** to accept the License Agreement. You must accept the License Agreement to proceed with the installation.

   ![Setup Type Window](image)

4. In the "License Summary File" window, browse to your PrinterOn license file and select it. Click **Next**.

   ![License Summary File Window](image)
5. Under “Setup Type”, choose **Standard** and click **Next**.

6. In the “Account Information” window, enter the local administrator’s account information.
   a. This is the Account that Windows services such as PrintAnywhere will run as.

7. The setup begins to install components.
8. At the end of the installation, you must reboot the computer.

You now need to configure your server to complete the installation process.
4.3. PrinterOn Configuration Manager Initial Login

This section provides an overview of the available options in the PrinterOn Configuration Manager. The Configuration Manager allows you to configure all PrinterOn Server settings, administer and synchronize printer settings.

To open the PrinterOn Configuration Manager:

1. Choose Start > All Programs > PrinterOn > Configure Server
   a. If on Windows 2012, search for Configuration Manager from the Start menu
   b. Or go to http://127.0.0.1:8057
2. You will be prompted to log in to the Configuration Manager,

![Configuration Manager Login](image)

4.3.1. Default Login Information

The first time you log in, you will be prompted to enter your credentials.

- The default username is: root
- The default password is your APIsiteAuth located in the License File.
  - See example below:

```
[Site]
APIsiteUID = 562873393017
APIsiteAuth = SzNQjxV7
AdminEmail = email@company.com
```
3. You will be prompted to change your Password the first time you log in.
   a. Enter the default password, which is the APIsiteAuth
   b. Enter your new administrator password

4. Click Login

5. You are now logged in to the Configuration Manager and ready to set up your server.
5. Basic Print Setup

Now that your software is installed, you can send your first web print job to ensure that this workflow is functioning properly.

5.1. Configuring Printers

Your PrinterOn Server is now ready to print. The next step is to connect a physical printer or print queue to the server. To correctly configure your printers you must configure the Output Destination for the printer using the steps below.

1. **Log in to the PrinterOn Configuration Manager**
2. **Select Printers**

![PrinterOn Configuration Manager screenshot](image)

3. **Select a printer to configure (click on the “+” next to the printer)**
4. Select the Output Type next to Output Destination
   a. For Network printers select TCP:// or IPP:// and enter the IP address of the printer
   b. For a locally installed printer, select Map and select your printer from the local list
   c. For a managed print queue, enter the share name of the queue
5. Select Apply Settings
5.2. Printing using Web Print

1. To launch the Web Print Portal use one of the following options
   a. Select the “Workflows” menu in the Configuration Manager, and click the link next to Open Print Page
   or
   b. Choose Start > All Programs > PrinterOn > Print Now

2. On the Web Print Home Page, click the Print button.
3. Select your printer

![PrinterOn Server Install and Configuration Guide](image)

4. Select a document by clicking “Choose File” or enter a web page to print

![PrinterOn Server Install and Configuration Guide](image)

5. Click Continue.
6. Modify page settings (if required)
7. Your job will now be processed.
5.2.1. Confirm the Web Print Output

Once the print job is sent, you can review the status of the print job, using the Print Delivery Station Queue Monitor

1. Select “Advanced->Components->Print Delivery Station”
2. Select Queue Monitor

3. Verify your job printed correctly to the selected printer.

You have successfully completed the PrinterOn Installation. Review the remaining sections of the document to configure other workflows and features.
5.3. Printing using the PrinterOn Mobile App

PrinterOn Mobile Apps offer users the ability to print directly from their smartphones or tablets.

The PrinterOn Server provides out of the box support for Mobile App printing. The following section describes an easy way to enable the PrinterOn Mobile Apps with almost no user configuration.

5.3.1. Downloading the PrinterOn Mobile App

- Search for PrinterOn and download the app with the logo shown (be careful, as there are multiple versions of the PrinterOn mobile app). Then launch the app on your mobile device.

- **OR** if you happen to be logged into the Configuration Manager from your mobile device you can also download and launch the app from there:

![Image of PrinterOn Mobile App setup]

5.3.2. Setup Local Server Address

The only step needed to complete the Mobile App setup is to set the IP address the Mobile Apps should use to communicate with the Server. This is needed to ensure the Mobile Apps can both search for and independently submit print jobs.

1. Log in to the PrinterOn Configuration Manager
2. Select the “Workflows” menu and the “Mobile”
3. Click to enable the “Override Document API URI” checkbox
   a. The Document API URI is the URL returned by the server to the Mobile Apps when searching for printers. It is used by the App to submit documents to the server
   b. The Document API URI can either be configured in the PrinterOn Directory, or overridden locally
4. Click the drop down next to the Document API URI
   a. Select the address provided. This address is determined automatically by the software based on your server’s IP address
   or
   b. Manually enter an address. When entering an address manually, you must add /cps to the end of the URL
5. Click “Apply Settings”
5.3.3. Configuring the PrinterOn Mobile App

1. Launch the PrinterOn Mobile App
2. Tap the QR Code icon to start the configuration process
3. Scan the QR Code on the Mobile Workflow page with the App
4. Confirm the information presented by the Mobile App

The PrinterOn Mobile App is now configured to print to the PrinterOn server.

5.3.4. Print from the PrinterOn Mobile App

1. Launch the PrinterOn Mobile App
2. Tap Photos
3. Select the photo you wish to print
4. Tap the Printer icon in the top right corner
5. You will now see a preview of the job when available
6. To select copies and page range where applicable, tap the option icon in the top right corner
7. Tap Print to submit your job.
8. Select Print History to view the progress of your print jobs.

You have successfully completed the PrinterOn Mobile App Setup.
6. Web Print Workflow

The PrinterOn Server allows users to submit print jobs using any connected web browser. The Web Print Workflow allows for customization of the Web Print Workflow.

6.1. Web Print Presentation Settings

Open Print Page

Provides a link to the Web Print page. The default value will typically display as http://127.0.0.1/cps. The URL can be modified to display the DNS name or the IP address of the PrinterOn server. This is configured on the PrinterOn Admin Console at http://www.printeron.com/administrators. For more details review the Service URL configuration section in this document.

Note: This link is provided as a shortcut for the PrinterOn administrators; however end users can still access the Web Print page regardless of this configuration option.

Languages

The Print page can be displayed in English, French, Spanish, Italian, German or Dutch. When one or more languages are enabled, the user will be presented with an option to change the displayed language to one of their choice. To add additional languages, select ‘Manage Languages’ on the ‘Central Print Services Basic Settings’ page; Navigate to ‘Advanced, Components, Configure Central Print Services, Basic’ tab.
Print Job Time Out

This option allows the PrinterOn server administrator to set the maximum time the user print page will wait before displaying an error indicating that the submitted print job has failed to print. NOTE: Individual rendering application timeouts are set separately in the PrintAnywhere Server Component.

Job Approval

When checked, users will be asked to confirm their print jobs before sending them to the printer when printing through the web print page.

Smart Printer Selection

By default, users will be prompted with a page to select their printer. When enabled, this option will automatically skip the printer selection page if the user only has a single printer available.
7. Mobile Printing Workflow

The PrinterOn Server supports mobile apps developed for iOS and Android. This section provides basic information needed to configure and use the PrinterOn Mobile Apps.

Enable Server Discovery

The PrinterOn Server can be used to broadcast itself as well as its printers. Enable this option to allow the PrinterOn Mobile Apps to locate the PrinterOn Server automatically on the network.

This option is useful if printers are organized in different servers on the network, and you would like to limit access to certain services.

7.1. Configuring Mobile App URLs

Override Document API URI

The Document API URI is the URL returned by the server to the Mobile Apps when searching for printers. It is used by the App to submit documents to the server.

By enabling this option, you may provide a value in the Document API URI.

Document API URI

The Document API URI can either be configured in the PrinterOn Directory, or overridden locally.

- Click the drop down next to the Document API URI
- Select the address provided.
  - This address is determined automatically by the software based on your servers IP address
- Or manually enter an address

*Note:* When entering an address manually, you must add /cps to the end of the URL
8. Google Cloud Print Workflow

The PrinterOn Connector for Google Cloud Print is an extension to the PrinterOn Server that allows users to print seamlessly from any of the GCP Client Applications to PrinterOn printers.

The GCP Connector helps bridge the gap between the existing Google Cloud Print workflows and the PrinterOn Server. It allows the print users to submit jobs using GCP Client Applications [e.g. ChromeOS, Chrome Browser etc...] to PrinterOn printers and leverage the capabilities of PrinterOn Server to deliver the print data to PrinterOn printers.

The combination of PrinterOn Server and GCP enables and facilitates management of users with "Bring Your Own Devices (BYOD)" - Smartphones, Tablets, Chromebooks and Notebooks that do not connect exclusively to existing print infrastructure.

This unique approach extends the following advanced capabilities for jobs submitted through the Google Cloud Print workflows:

- LDAP/Active Directory Authentication
- User-based Access Control
- Print Management Integrations
- Guest Print Workflows

8.1. Google Cloud Print Authentication

The PrinterOn Server uses Google's OAuth2 based system for identifying users and printers. This provides a secure method of linking Google printers and users to PrinterOn. During the setup process, you will be redirected to the Google Cloud Print website to enter your credentials and provide the PrinterOn Server access to your Google printers.

Before starting your Google Cloud Print setup:

- Create a Google Account to manage your printers and Google Cloud Print workflow.
- Ensure that pop-up windows are allowed for the PrinterOn Server
  - During the setup process, the Configuration Manager will load a pop-up window or tab and redirect you to the Google website.
8.2. Adding a Google Cloud Printer

Select ‘Add Google Printer’ from the Google Cloud Print screen. This will display the ‘Add Google Printer’ menu.

![Add Google Printer]

**Printer Name**

The user-friendly Google Cloud Print printer name that will be assigned to this printer.

**Map to Printer**

The PrinterOn server printer that was previously created on the PrinterOn.com portal.

Select ‘Add Google Printer’. This will then create the printer on the Google Cloud Print servers, and then map that printer to the PrinterOn server printer, which will then display the printer in the Printer Mappings page.

![Printer Mappings]
8.3. Google Cloud Print General Settings

Proxy (Identifier)

The Google Service identifier that uniquely identifies the instance of the PrinterOn server. The Google Cloud Print service allows a printer proxy (PrinterOn server GCP Connector) to register more than one physical/virtual printer. If the printers linked to the Google Cloud Account do not have an associated proxy-identifier value, then the PrinterOn server Application auto-generates a new value.

Fetch Jobs Interval

Controls how often the PrinterOn Server will restart the connection with Google to receive new print jobs. The PrinterOn Server registers for notifications from Google regarding new print jobs. In some cases, this connection may become unstable or unresponsive. This value allows the software to adapt to various network types.
8.4. Share a Google Cloud Printer

Once the Google Cloud Printer has been created, for users to be able to see the printer in the GCP client the printer must be shared. The printer can be shared with individual users or groups of users provided the users all have access to a GCP client and this can be accomplished using the steps below.

Sharing the printer:

- Check the box next to the printer you would like to share
- Select the **Share Printer** button
- The ‘Share Printer’ screen displays, select ‘Yes’ to login to the Google Cloud Print services and share the printer.

![Google Cloud Print screen](image-url)
8.5. Deleting a Google Cloud Printer

The delete button allows the administrator to delete any of the GCP printer queues owned by the Google Cloud Account.

- Select the checkbox next to the printer you would like to delete then select ‘Delete Printer’
- Confirm the delete action by selecting ‘Yes’

The Google Cloud Printer connection will be deleted on the PrinterOn Server along with the Google Cloud Print services.
9. Email Print Workflow

9.1. Exchange Web Services (EWS) Configuration

Using Exchange Web Services to connect to Exchange and provides a more modern alternative to MAPI. This option supports both MS Exchange server hosted internally and Office 365 cloud based email services.

<table>
<thead>
<tr>
<th>Server Configuration (Inbound)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email Type: EWS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EWS Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service URI: <a href="https://outlook.office365.com/EWS/Exchange.asmx">https://outlook.office365.com/EWS/Exchange.asmx</a></td>
</tr>
<tr>
<td>Mailbox Username: <a href="mailto:qaon@printerinc.onmicrosoft.com">qaon@printerinc.onmicrosoft.com</a></td>
</tr>
<tr>
<td>Mailbox Password: **********</td>
</tr>
<tr>
<td>Listener Port: 80</td>
</tr>
<tr>
<td>Response Address: <a href="mailto:no-reply@printerinc.onmicrosoft.com">no-reply@printerinc.onmicrosoft.com</a></td>
</tr>
<tr>
<td>Accept Request to response address:</td>
</tr>
</tbody>
</table>

NOTE: If you're using Office365, the Mailbox Username must be the complete email address.

Service URI

Specifies the EWS server’s IP address or hostname. The URI can be composed using the following syntax:

When using office 365 mail services, the service URL is [https://outlook.office365.com/EWS/Exchange.asmx](https://outlook.office365.com/EWS/Exchange.asmx)

When using MS Exchange mail service, the service URL is [https://Your Exchange Server/EWS/Exchange.asmx](https://Your Exchange Server/EWS/Exchange.asmx)
Mailbox Username
The username that will be used to connect to the Exchange server and to monitor the incoming mailbox. This account could also be the same account used to install and run the PrinterOn server services.

Mailbox Password
The password that will be used to connect to the EWS server and monitor the incoming mailbox.

Listener Port
Indicates the port the PrinterOn Server should connect to when communicating with the EWS server. Default is port 80.

Response Address
This is the email address that will be used by the mail server when responding to email requests. When an email is sent to the default address, the PrinterOn server will automatically delete the message and not respond to the user.

Typically this should be set to an address such as no-reply@print.company.com.

Accept requests to response address
By default all emails sent to the response address will be automatically deleted. Enabling this option will cause PrinterOn Server to respond to requests sent to this address.

This option is generally only used for diagnostic purposes.
9.2. IMAP4 Configuration

### Server Configuration (Inbound)

<table>
<thead>
<tr>
<th>Email Type</th>
<th>IMAP4</th>
</tr>
</thead>
</table>

### IMAP4 Configuration

<table>
<thead>
<tr>
<th>Server Address</th>
<th>labexchange.labvm.printeron.local</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Port</td>
<td>993</td>
</tr>
<tr>
<td>SSL/TLS</td>
<td>Implicit</td>
</tr>
<tr>
<td>Username</td>
<td>meretest</td>
</tr>
<tr>
<td>Password</td>
<td>**********</td>
</tr>
<tr>
<td>Response Address</td>
<td><a href="mailto:no-reply@labvm.printeron.local">no-reply@labvm.printeron.local</a></td>
</tr>
<tr>
<td>Accept Request to response address</td>
<td>☐</td>
</tr>
</tbody>
</table>

#### Server Address

Specifies the IMAP4 server’s IP address or hostname.

#### Server Port

Indicates the port on which the PrinterOn Server should connect when communicating with the IMAP4 server.

- Non-SSL default is port: 143
- SSL default is: 993

#### SSL/TLS

Select from one of three options for SSL. You may need to contact your server administrator to identify the type of SSL used by your server. The configuration will automatically adjust the SMTP port based on the most commonly use ports.

- None: SSL will not be used for this server
- Implicit SSL: Typically used with port 993, this type of SSL is often referred to as IMAP-over SSL.
- Explicit SSL: Typically used with port 143, this type of SSL is often referred to as IMAP-TLS.
**Strict SSL**

If enabled the service will only connect to services when the SSL certificate is valid and signed by a valid certificate authority. If your service is configured for SSL but is using a self-signed certificate, disable this option.

**Username**

The username that will be used to connect to the IMAP4 server and monitor the incoming mailbox.

**Password**

The password that will be used to connect to the IMAP4 server and monitor the incoming mailbox.

**Response Address**

This is the email address that will be used by the mail server when responding to email requests. When an email is sent to the default address, the server will automatically delete the message and not respond to the user.

Typically this should be set to an address such as `no-reply@print.company.com`.

**Accept requests to response address**

By default all emails sent to the response address will be automatically deleted. Enabling this option will cause the PrinterOn Server to respond to requests sent to this address. This option is generally only used for diagnostic purposes.
9.3. MAPI Configuration

In order to use Microsoft’s Messaging APIs (MAPI), we need to have the MAPI subsystem installed on the machine where the PrinterOn server is installed. To install the MAPI subsystem this can be accomplished by installing the Microsoft Office software that includes Microsoft Outlook. If you do not have a copy of Microsoft Outlook you may need to install MAPI separately. Directions can be found on the Microsoft website using this link: [http://www.microsoft.com/download/en/details.aspx?id=1004](http://www.microsoft.com/download/en/details.aspx?id=1004).

Once you have MAPI installed, log on to the PrinterOn server with the user account of the mailbox we’ll be using to connect to the Microsoft Exchange server to retrieve emails for printing. This user should be a local administrator on the machine and be able to log on to the PrinterOn server.

![Server Configuration (Inbound)](image)

Profile Name

Select the Microsoft mail profile that was created after installing MAPI

Response Address

This is the email address that will be used by the PrinterOn server when responding to email print requests. When an email is sent to the default address, the server will automatically delete the message and not respond to the user.

Typically this should be set to an address such as no-reply@print.company.com.

Override Default

Enabling this option will allow the response address to be accessible with changes.

Accept requests to response address

By default all emails sent to the response address will be automatically deleted. Enabling this option will cause PrinterOn’s print server to respond to requests sent to this address. This option is generally only used for diagnostic purposes.
9.4. SMTP Server Configuration (Outbound)

The PrinterOn Server uses SMTP to send messages to users about their print job. The server uses SMTP when configured to use EWS, MAPI or IMAP3.

![SMTP Server Configuration](image)

The PrinterOn Server is able to send response emails to the initiating end users advising that the print jobs are ready to be picked up at the printer. For this to work the PrinterOn server is connected to the mail server using the SMTP information entered into the SMTP configuration page for each email protocol. Without this information the user will not receive a response email advising if there are any errors while trying to submit a document to be printed.

**Server Address**

Specifies the SMTP server’s IP address or hostname

**Port**

Indicates the port on which the PrinterOn server should connect when communicating with the SMTP server (The default SMTP port is 25).
SSL/TLS

Select from one of three options for SSL. Please note that you may need to contact your server administrator to identify the type of SSL used by your server. The configuration will automatically adjust the SMTP port based on the most commonly used ports.

- None: SSL will not be used for this server
- Implicit SSL: Typically used with port 465, this type of SSL is often referred to as STMP-SSL
- Explicit SSL: Typically used with port 587, this type of SSL is often referred to as STMP-StartTLS

Strict SSL

If enabled the service will only connect to services when the SSL certificate is valid and signed by a valid certificate authority. If your service is configured for SSL but is using a self-signed certificate disable this option.

Username

The username that will be used to connect to the SMTP server to send email responses.

Password

The password that will be used to connect to the IMAP4 server to send email responses.

Sender Name

Indicate the name of the sender that will be shown in email responses sent from the server.

Sender Address

Indicate the sender address to set when responding to the user. This is typically the same as the “Default Address” configured under the incoming mail server settings.

Reply-To Address

Indicate the reply-to address to set when responding to the user. This is typically the same as the “Default Address” configured under the incoming mail server settings.
9.5. Domino Configuration – *Enterprise Edition Only*

NOTE: IBM Domino Support is only available for Enterprise edition

9.5.1. Domino Installation Pre-Requisites

Using the PrinterOn Server, native emailing printing with a Lotus Domino server can be established with just a few configuration steps.

- Install the Lotus Notes client on the PrinterOn server configured as a ‘Single-User’ installation
  - Note: This installation type allows both the Notes executable files and the Domino user data files to be stored in the directory locations that are accessible to the PrinterOn server.
- Launch the Lotus Notes client and validate connectivity exists to the user’s mailbox, close the client and continue with the PrinterOn server configurations.

### Server Configuration (inbound)

#### Email Type

- Domino

### IBM Domino Configuration

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Address</td>
<td>Specifies the Lotus Domino server’s IP address or DNS name. This information is used by the Domino address book look-up feature to fetch the SMTP address of the recipient.</td>
</tr>
<tr>
<td>Password</td>
<td>The mailbox account password information that will be used to connect to the Lotus Domino server and monitor the incoming mailbox.</td>
</tr>
<tr>
<td>Response Address</td>
<td></td>
</tr>
<tr>
<td>Accept Request</td>
<td></td>
</tr>
<tr>
<td>Printer Name</td>
<td></td>
</tr>
<tr>
<td>Lotus Notes INI Path</td>
<td></td>
</tr>
</tbody>
</table>

**Server Address**

Specifies the Lotus Domino server’s IP address or DNS name. This information is used by the Domino address book look-up feature to fetch the SMTP address of the recipient.

**Password**

The mailbox account password information that will be used to connect to the Lotus Domino server and monitor the incoming mailbox.
Response Address

This is the email address that will be used by the PrinterOn server when responding to email print requests. When an email is sent to the default address, the server will automatically delete the message and not respond to the user.

Typically this should be set to an address such as no-reply@print.company.com.

Accept requests to response address

By default all emails sent to the response address will be automatically deleted. Enabling this option will cause PrinterOn’s print server to respond to requests sent to this address. This option is generally only used for diagnostic purposes.

Printer Name (Optional)

This is an optional setting that will allow administrators to specify the destination PrinterOn printer name for all the incoming requests. If the value is not set, the server will use the Domino Address Book Look-up feature to fetch the SMTP address of the recipient.

Lotus Notes INI Path

This allows the administrator to specify the Lotus Notes (Notes.ini) configuration file path. This file can usually be found inside “C:\Program Files(x86)\IBM\Lotus\Notes”. Clicking on the Browse button should launch the appropriate directory location where this configuration file can be found.

Synchronize

The Synchronize operation registers the PrintAnywhere application with the IBM Lotus Notes client software to start monitoring the mailbox. It also reconfigures the PrintAnywhere server to use the appropriate (32-bit) version of the PrinterOn server binaries to interface with the Lotus Notes Client software.
9.6.  **Advanced Email Settings**

These settings allow you to configure some additional options for email print jobs.

![Advanced Email Settings](image)

**Min. Attachment File Size**

The minimum attachment size is used to specify the threshold at which the PrinterOn Server will process or ignore attachments. This setting is useful when dealing with some attachments that are included as part of signatures of emails.

**Ignore Empty Email Attachments**

Indicates that the PrinterOn Server should attempt to detect when an email contains HTML-based attachments that contain no visible content. The server will attempt to read the attachment and will ignore the file if it detects an empty file, or no values between the HTML tags.

**Zip Archive Support**

When enabled the PrinterOn Server will process a zip file attached to email messages. PrintAnywhere will extract the contents of the emailed zip file and process each file individually.

**Ignore Request to Invalid Printers**

When enabled, the PrinterOn Server will not respond to requests submitted to unknown email accounts. The user will not be notified that an invalid address was used and the emails will be silently ignored.

**Auto-Detect Forwarded Messages**

When enabled the PrinterOn Server attempts to detect when a message has been forwarded from a client that may wrap their email messages in an embedded message before forwarding to the server. Generally this option should be left enabled unless you encounter a specific issue with your mail server.

NOTE: PQMS is only available for Enterprise edition

The PrinterOn Print Queue Monitoring Service Connector is another extension to the PrinterOn Server that enables jobs submitted to the Standard Windows Print Server Queues to be delivered to remote printers through the PrinterOn Server infrastructure.

The PQMS Connector helps bridge the gap between the existing Windows Print Queue workflows and the PrinterOn Server. It allows print users to submit jobs using standard Windows workflows [e.g. File → Print] and leverage the capabilities of the PrinterOn Server to deliver the pre-rendered data content to printers located anywhere in the world.

This section describes all the configurable options available for the Print Queue Management Integration. In most cases, the default settings do not need to be changed.
Folder to Monitor

The PrinterOn server uses this directory to store the print data to this location.

Max Concurrent Jobs

This setting allows you to configure the maximum number of print jobs to be processed by the PrinterOn Server at any given time. This setting will help avoid overloading the PrinterOn Server and reduce the job delays during periods of heavy usage.

This value may be increased if multiple servers are deployed.

Retry Failed Job Attempts

This setting allows you to configure the maximum number of job retries per print job before abandoning the request. The default value is set to 3.

Job Processing Timeout

The maximum amount of time the PQMS connector will wait for confirmation after job submission before abandoning the job request and freeing up the print slot. The default value for this setting is 5 minutes.

Enable Monitor Logging

When checked, the PQMS Connector will create a new log file in the 'PDG Log Directory' and start logging information pertaining to PQMS integration.
10.1. Configure a PQMS printer

The PQMS Printer Mappings section allows the administrator to map the existing Local Windows Print Queues to PrinterOn Printers. The PQMS integration supports the following printer mapping configuration types.

- **One-to-One**: Each printer device queue can be mapped to a unique PrinterOn printer
- **Many-to-One**: Multiple printer device queues can be mapped to the same PrinterOn printer.

To enable a print queue:

- Select the local printer queue that will be routed through the PrinterOn server
- Select a PrinterOn Printer from the list
- Select ‘Apply Settings’
11. IPP and Native iOS Workflow

The PrinterOn Server includes an IPP connector that allows administrators to deliver print jobs generated by third-party IPP print servers and clients to designated printers located in remote locations. To configure IPP printing select the 'Printers' tab and disable 'Discovery' by simply clicking on the 'check mark', this will change the setting to an ‘X’ indicating this has now been disabled.

11.1. IPP and Native iOS limitations

A PrinterOn printer cannot support printing directly from iOS native printing and desktop IPP printing at the same time. This is due to different types of print job data generated by iOS devices, compared to IPP desktops and laptops.

To support both use cases simultaneously, you must use separate PrinterOn printers.

11.2. IPP Printers Overview
11.2.1. Network and Broadcast Settings

Broadcast Interface

This setting is specific to the PDG Discovery Connector integration. Please refer to the details included in the sections listed below for information on how to configure this setting and its potential implications.

Default IPP Port

The default port that the IPP Listener service will use for accepting jobs from iOS devices. The default port is 6310.

Additional Ports

IPP Listener service can be enabled on multiple ports allowing iOS devices to choose any of the ports if one is blocked.

SSL

This setting forces iOS devices to transfer the print data securely over SSL. It is enabled by default for the ‘Default IPP Port’.

11.2.2. IPP Printers Overview

Enable

This checkbox enables or disables each printer for receiving IPP print jobs

Printer Name

The name of the printer as it exists on the PrinterOn.com web portal

Printer Number

The unique ID of the printer within the PrinterOn.com global directory

Printer Address

This is a read-only value and is used to configure IPP printing for some print clients

Print Data Type

The Print Data Type option allows an administrator to customize the workflow depending on the IPP-client submitting the print job. This option will be used to determine whether the job data should be processed by the PrinterOn server or delivered as is to the destination printer.

- Rendered: Indicates that the data received by the print client is already prepared for the destination printer and no additional processing should be performed. For example, the client may submit PCL, or other “printable” data to the PrinterOn server.
• Un-Rendered: Indicates that the PrinterOn server requires additional processing and conversion for the destination printer. For example, the client may generate and submit a PDF file to the server that must then be converted by the PrintAnywhere server before being delivered to the printer.

11.3. Configure Native iOS Printing

The PrinterOn Server enables iOS-based devices to discover printers and submit print jobs to PrinterOn printers. It allows the users to submit jobs to printers that are located both inside and outside the enterprise network.

This unique approach extends the following advanced capabilities for jobs submitted through the iOS device print workflow:

• LDAP/Active Directory Authentication
• User-based Access Control
• Print Management Integrations
• Guest Print Workflows
• Enabling Printing from Multiple Networks

![PrinterOn Printers](image)

- Navigate to the Printers Tab
- Enable Discovery for the printer
- Apply Settings
11.4. Configure IPP Printing

- Navigate to the Printers Tab
- Disable Discovery for the printer
- Select the ‘Synchronize’ button to save the settings and update all components within the PrinterOn server

![PrinterOn Server Interface]

- Navigate to Workflows then select IPP and Native iOS printing
- Select the checkbox next to the printer to enable IPP printing

![IPP Printer Configuration]

- From the dropdown menu, select the ‘Printer Data Type’ as ‘Rendered’
- Select ‘Apply Settings’
12. Configuring Printers

The Printers tab allows you to edit the destination of each PrinterOn enabled printer. To send print jobs to the correct printer, the PrinterOn Server requires that each PrinterOn printer is attached to a physical printer or print queue.

To configure your printers first log in to the PrinterOn Configuration Manager.

Select the Printers tab to see a list of available PrinterOn printers.

12.1. Printers Overview

<table>
<thead>
<tr>
<th>Enabled</th>
<th>Printer Name</th>
<th>Print Server URI</th>
<th>Approval</th>
<th>PQMS</th>
<th>GCP</th>
<th>Discovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td>Warehouse</td>
<td>tcp://172.16.100.1</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>✓</td>
<td>Template Printer</td>
<td>ipps://172.18.23.12/lpp</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>✓</td>
<td>Lobby</td>
<td>Local Driver</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>✓</td>
<td>Guest</td>
<td>share://PRINTSERVER/printer2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>✓</td>
<td>Executive</td>
<td>tcp://172.12.11.32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>✓</td>
<td>Boardroom</td>
<td>lp://192.12.112.12</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Enabled**: This printer will appear in the list of available printers for the users

**Approval**: This option enables the approval screen allowing the user the option to cancel the print job before it is submitted to the printer or to the print queue. To enable/disable the approval screen for the individual printer select the ‘X’ or the ‘Check’ option.
<table>
<thead>
<tr>
<th><strong>Printer Name</strong></th>
<th>The PrinterOn name value used on the PrinterOn.com website</th>
</tr>
</thead>
<tbody>
<tr>
<td>salesprinter</td>
<td></td>
</tr>
<tr>
<td>marketingprinter</td>
<td></td>
</tr>
<tr>
<td>ndeptprinter</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Print Server URI</strong></th>
<th>The address to the physical printer or print queue using IPP, TCP or share name.</th>
</tr>
</thead>
<tbody>
<tr>
<td>tcp://10.0.2.25</td>
<td></td>
</tr>
<tr>
<td>tcp://10.0.2.26</td>
<td></td>
</tr>
<tr>
<td>tcp://10.0.2.27</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>PQMS</strong></th>
<th>Identifies if the printer is enabled for PrinterOn Queue Management System. This option can be enabled by navigating to ‘Workflows’.</th>
</tr>
</thead>
<tbody>
<tr>
<td>x</td>
<td></td>
</tr>
<tr>
<td>x</td>
<td></td>
</tr>
<tr>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>GCP</strong></th>
<th>Identifies if the printer is enabled for Google Cloud printing. This option can be enabled by navigating to ‘Workflows’.</th>
</tr>
</thead>
<tbody>
<tr>
<td>x</td>
<td></td>
</tr>
<tr>
<td>o</td>
<td></td>
</tr>
<tr>
<td>o</td>
<td></td>
</tr>
<tr>
<td>o</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Discovery</strong></th>
<th>Identifies if the printer is enabled for native iOS printing</th>
</tr>
</thead>
<tbody>
<tr>
<td>o</td>
<td></td>
</tr>
<tr>
<td>o</td>
<td></td>
</tr>
<tr>
<td>o</td>
<td></td>
</tr>
<tr>
<td>o</td>
<td></td>
</tr>
</tbody>
</table>
12.2. Configure Individual Printer Settings

Individual printer settings are managed through the Printer Tab. Each printer can be customized individually.

- To configure a Printer click the “+” sign next to the printer.

![Printer Configuration Page]

- Click Configure

Summary printer details is presented at the top of the Printer Configuration page. The QR code supplied can be used by the PrinterOn Mobile apps to quickly locate and print to the printer.

The Printer Configuration Page organizes printer configuration options into a series of grouped settings. Click on any section to expand the configuration options.
12.2.1. Printer Configuration

Provides the most common printer identification and description configuration displayed to users and used for searching for printers, including the printer name, description, location information.

<table>
<thead>
<tr>
<th>Printer Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Printer Description</strong></td>
</tr>
<tr>
<td><strong>PrinterOn Name</strong></td>
</tr>
<tr>
<td><strong>Department</strong></td>
</tr>
<tr>
<td><strong>Default Printer Language</strong></td>
</tr>
<tr>
<td><strong>Address</strong></td>
</tr>
<tr>
<td><strong>City</strong></td>
</tr>
<tr>
<td><strong>State/Province</strong></td>
</tr>
<tr>
<td><strong>Country Code</strong></td>
</tr>
<tr>
<td><strong>Postal Code</strong></td>
</tr>
<tr>
<td><strong>Latitude</strong></td>
</tr>
<tr>
<td><strong>Longitude</strong></td>
</tr>
</tbody>
</table>

**Printer Description** – The descriptive label used describe the printer to users. This value should be unique and descriptive. Please note that PrinterOn does not enforce uniqueness on this value, but it is recommended that this value is a simple and easy to understand label for the printer.

**PrinterOn Name** – This is a unique printer queue name used throughout the software to both identify and organize printers. This value is also the name used by users when submitting email print jobs. This value, in addition to the email domain, will be used to submit print jobs. Ex: warehouse-printer-1@emailprint.com

**Department** – Indicates the Printer Department in which the printer is organized. Only existing departments will be presented in the combo box. Use the Department Management tools to create new departments.

**Default Printer Language** – Indicates the default language to use for communicating to users when printing to this printer. This indicates the language the server will use to respond to email print jobs.

**Address** – Indicates a physical address for the printer. This is used when presenting information in mobile applications that may present printers using maps.

**Latitude/Longitude** – Indicates the GPS coordinates for the location of the printer. This is used when presenting information in mobile applications that may present printers using maps.
12.2.2. Printer Driver

Provides the printer driver information to be used by the server to convert documents for the destination printer.

PrinterOn includes a number of print drivers with the server installation that provide basic support for many common printers, including PCL, Postscript and XPS print output.

Print Drivers – List all printers installed on the server. Selecting a printer will cause the PrinterOn Server to use the driver associated with the printer for any jobs sent to the server.

The Server will scan for drivers on both locally and remotely managed servers. The Configuration Manager automatically sorts installed print drivers by their manufacturer:

- Select a manufacturer from the combo box
- Select a Model from the drop down.

NOTE: If multiple servers are being used for document processing, ensure that the same driver is installed on all servers.

Model – Information to present to the user when viewing printer details. This value does not need to match the actual printer model.

12.2.3. Samsung Universal Drivers

PrinterOn distributes the Samsung Universal Print Drivers along with the PrinterOn Server. These drivers allow PrinterOn to offer additional optimized output for Samsung printers. After selecting Samsung EMU v2 from the Print Drivers combo box, the Printer Model name drop down will become active.

- Select Samsung from the Print Drivers Manufacturer combo box
- Select Samsung Universal ENU v1
- Select your specific printer model from the Printer Model Name drop down.
- NOTE: If you do not know your specific model select UnsupportedColor or UnsupportedMono
12.2.4. Printing Modes

The Using Your Printer With Web, PrintWhere, and Email Printing section allows you to configure how users will print to the individual print queue and also some workflow options for email print.

<table>
<thead>
<tr>
<th>Using Your Printer With Web, PrintWhere, and Email Printing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable PrintWhere Printing</td>
</tr>
<tr>
<td>Enable Document API Printing</td>
</tr>
<tr>
<td>Email Domain</td>
</tr>
<tr>
<td>company.com</td>
</tr>
<tr>
<td>Enable Email Printing</td>
</tr>
<tr>
<td><a href="mailto:00528231@company.com">00528231@company.com</a></td>
</tr>
<tr>
<td><a href="mailto:warehouse-printer-1@company.com">warehouse-printer-1@company.com</a></td>
</tr>
<tr>
<td>Print Body of the Email</td>
</tr>
</tbody>
</table>
| Print Body of the Email:
| warehouse-printer-1@company.com                              |
| One Release Code for All Attachments                         |

Enable Document API Printing – Indicates whether workflows including mobile apps, GCP and iOS Native Print are allowed to be submitted to the printer.

Email Domain – Indicates the email domain that should be appended to the printer name when advertising email print addresses to users.

Enable Email Printing – Indicates whether email print is enabled for this queue. If disabled, users will receive a message indicating the service is disabled.

Print Body of the Email – Indicates whether the body of an email should be printed when receiving email print jobs. If disabled, only attachments will be printed.

One Release Code for All Attachments – Indicates if a single release code should be provided to users when submitting email print jobs with multiple attachments. This is only used when release codes are enabled. This is recommended when using embedded solutions such as the Ricoh HotSpot embedded with touch panel screens where jobs may be individually selected at release time.
12.2.5. **User Input Labels**

User Input Labels are used when requesting information from users when printing, including labels for release codes and custom integrations. The Labels section allows you to customize the labels for users. The Labels section also supports customizing labels in each language.

<table>
<thead>
<tr>
<th>Labels</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Label Language</strong></td>
</tr>
<tr>
<td><strong>User Identifier</strong></td>
</tr>
<tr>
<td><strong>Client UID</strong></td>
</tr>
<tr>
<td><strong>Session Meta Data</strong></td>
</tr>
<tr>
<td><strong>Privacy Release Code</strong></td>
</tr>
</tbody>
</table>

**Label Language** – Use the combo box to select which language to edit. Once the language is selected you may update the labels and apply the settings.

Note: Client UID and Session Meta Data labels are reserved for some custom integrations.

12.2.6. **Job and User Information**

Print jobs sent from the server may require additional information used to identify the sender. The Job and User Information allows you to control how your server will collect and use this information. This information is usually reserved for specific 3rd party integrations.

<table>
<thead>
<tr>
<th>Job and User Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>User Identifier</strong></td>
</tr>
<tr>
<td><strong>Client UID</strong></td>
</tr>
<tr>
<td><strong>Session Meta Data</strong></td>
</tr>
</tbody>
</table>

**User Identifier** - When selected, the user will be asked to provide Job Owner information that will be included with a print job.

**Client UID** - Used to request information from users. Generally used in combination with one of the PrinterOn 3rd party integrations.

**Session Meta Data** - Used to request information from users. Generally used in combination with one of the PrinterOn 3rd party integrations.

NOTE: The Secure checkbox indicates if the data is sensitive and should be saved by the server or not.
12.2.7. Releasing Print Jobs

The Release Print Jobs section determines how jobs will be managed after printing. This includes options to enable or disable secure release codes, as well as how PrinterOn will customize the print data when integrated with various print/output management solutions.

Release Print Jobs - Print jobs sent from the server may be either automatically released by the release station or held until the user (or an attendant) is present to release them.

When integrating with most print/output management solutions, the printer should be configured to release automatically.

- **Automatically when they arrive**: When selected, print jobs will be automatically released to the printer or print queues.
- **Using a PrinterOn Solution or Embedded Agent**: Print jobs will be released using a PrinterOn Solution. Users will be required to supply a Release Code or other identifying information to access their print jobs.
- **Privacy Release Code** – Indicates if users will require a release code to retrieve their print jobs. This is usually enabled when using a PrinterOn PrintValet or embedded agent that supports entering a release code.
- **Always use numbered release codes**: Generated Release Codes will contain only numbers.
- **Auto-generate release codes**: When selected, the server will create unique Release Codes for jobs and supply them to the user.

Enable Remote Job Release – Indicates whether the server will allow users to release print jobs without being present at the printer. Interfaces supported by this method include Web Release and the PrinterOn Mobile Apps.
12.2.8. Third Party Integrations

PrinterOn supports a wide range of 3rd party integrations with various print/output management solutions. PrinterOn also provides a variety of options to customize print data for these solutions.

Enable 3rd Part Integration – Select the checkbox to access various Print Management Integrations. After selecting the check box the options below will become enabled.

- **Print Management Integration**: Select the integration that will be used along with your PrinterOn Server.
- **Additional Integration Options**: In some cases, multiple integrations need to be combined to provide a final workflow. After selecting a Print Management Service, a relevant corresponding Additional Integration will be available.
- **Enable Advanced Integration Features**: Some integrators have additional integrations that require customized delivery of information. Please consult with your integration partner to determine if this option is required. Please Note: Enabling this option when not required will result in incorrect job information being transmitted to the integration.

**Inject a PJL Header container if none exists** - Many printers and print/output management require PJL headers to collect job information. Some print drivers do not automatically include these PJL headers. If you encounter issues with your integration, enabling this option may be required.

**Manage PJL headers for Passthrough Jobs** - PrinterOn is able deliver print jobs from 3rd party systems through the print service. In some cases, those jobs may be pre-rendered data that contains PJL headers. Enabling this option will allow PrinterOn to modify the PJL headers of a job that will not be otherwise processed.
Inject PJL Based Copies - Some printers and MFPs support managing print copies through PJL headers instead of in the print data stream itself. If the printer connected to the queue supports PJL-based copies enabling this option may reduce print data size when multiple copies are printed.

Copies are managed in the PJL by modifying the QTY and/or COPIES PJL header.

12.2.9. Output Options

The PrinterOn server is able to manage some output options and apply additional limits or default behaviour.

![Output Options Table]

Include a Cover Page with print jobs - Cover Pages will be added to print jobs and information to help identify the sender and the time of the print job will be added.

Color printing - This feature enables users searching for printers to filter their searches according to whether the printer supports color. If you have a color printer but wish to discourage users from printing in color, you can select [Does not support color].

Duplexing Type - From the drop-down list, select your duplexing preference. If you prefer to let the printer control duplexing, select "Not Managed".

Maximum Page Count - Specify the maximum number of pages a print job may use. Print requests exceeding this limit will not be accepted. This includes cover pages.

Maximum Printed Size: Enter a number to specify the limit on a print job’s downloaded data size. Print requests exceeding this limit will not be accepted.
12.2.10. Paper Sizes

You may configure available paper sizes for the printer and manage what options are provided to users. The information selected in this section will be used to allow users to select which paper sizes are available.

<table>
<thead>
<tr>
<th>Paper Sizes</th>
<th>Supported</th>
<th>Make Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter (8 1/2 x 11 in)</td>
<td>✔</td>
<td>Make Default</td>
</tr>
<tr>
<td>Letter Small (8 1/2 x 11 in)</td>
<td></td>
<td>Make Default</td>
</tr>
<tr>
<td>Tabloid (11 x 17 in)</td>
<td></td>
<td>Make Default</td>
</tr>
<tr>
<td>Ledger (11 x 17 in)</td>
<td></td>
<td>Make Default</td>
</tr>
<tr>
<td>Legal (8 1/2 x 14 in)</td>
<td></td>
<td>Make Default</td>
</tr>
</tbody>
</table>

**Supported** – Select the check box to indicate if the paper size is supported by the printer.

**Make Default** – Specify the default paper size for the printer. This will be selected by default in all workflows and will be the paper size automatically selected when printing via email.

**Search** – Search for and filter results by entering part of the paper size name in the search box.
12.2.11. Print Delivery Station

The Print Delivery Station is used to configure which release station the job will be delivered to after the job is processed. In some deployments multiple Print Delivery Stations are used to deliver jobs to printers. In cases with remote locations, in isolated networks, a Print Delivery Hub may be used to bridge these networks and allow print jobs to be delivered to printers that cannot be accessed directly.

**Attach Printer To:** – Provides a quick method to connect a printer to a Print Delivery Station. This option may also be managed using the **Link Printers** option.

**Allow Printing Directly To PDS** – Indicates whether jobs should be sent to the PDS server. Only select this option if the PDS is accessible from the main server. In some cases, print jobs may only be delivered to a PDS using an intermediate Print Delivery Hub (PDH).

**Server Address** – Indicates the fully qualified network address of the Print Delivery Station server. Select a scheme to indicate whether SSL will be used. Usually this is simply the local server.

**Performance Note**: Indicating an explicit port along with the server address can improve print performance. By specifying a port, the server will automatically select the port, otherwise it will scan ports 80, 443 and 631, as well as SSL and non-SSL connections, which can slow delivery.

**Print Directly to PDS Only** – This option only applies if a PDH is available and should be enabled in most cases. Enabling this option will disable the ability to support sending jobs to the PDH address.

**Use an Alternate/Local Print Delivery Hub to Host Print Jobs**: Indicates if a Print Delivery Hub server is available for printing. This option should be specified if a PDS is accessible directly by the server. In some cases, this option may be used if multiple PDS servers are deployed for the same printer, for redundancy.

Configuring both a PDS and PDH server can assist desktop printing using PrintWhere for roaming users who may move between networks regularly and cannot always contact PDS.

**Print Directly to PDS Only** – Indicates the fully qualified network address of the Print Delivery Hub server.
12.3. Bulk Configuration of Printer Settings

The PrinterOn Configuration Manager provides an easy method of configuring many printers at one time, using a Template Printer copying settings from one printer to other printers in bulk.

To copy printer settings:

- **Select Printers**
- **Expand** the printer, using the “+” icon, that you wish to use as the Template Printer. The settings from this printer will be applied to other printers.
- **Click Copy**

Print options are organized in groups. Select 1 or more sets of options you wish to copy to other printers.

- **Select the printers you wish to apply changes to by selecting them under the Available Printers table**
- **Either Drag** or click the **Arrow** to add the printers to the PDS
- **Click Apply**
12.4. Configure Printer Output Settings

PrinterOn supports delivery of print jobs to a wide range of printers, print protocols and print queues. The Print Delivery Station (PDS) represents the release station that communicates with the printer or print queue.

Select **PDS Settings** to configure how the server will communicate with the printer.

![PrinterOn Settings Example]

### 12.4.1. Printer Identification

#### Printer Name

This is the Unique PrinterOn Printer Name. This name is unique for your service and displayed as read only on the PrinterOn Configuration panel.

#### PrinterOn ID

This is a unique numeric ID that identifies each printer across all PrinterOn sites and services. Users may refer to the printer using this ID or the printer name.
### Configuring Printer Output Destinations

This defines the output destination for the printer. You must configure the Output Destination in order for the PrinterOn server to communicate with your printers, or with a print queue.

If you are unsure what to enter in the Output Destination field, refer to the following table.

<table>
<thead>
<tr>
<th>If your printer is:</th>
<th>Output Destination Name:</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connected directly to the PDS computer</td>
<td>Select local://</td>
<td>Samsung X3186</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HP LaserJet 4000 Series</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connected via a network or print spooler</td>
<td>Select share://</td>
<td>\server\sharename</td>
</tr>
<tr>
<td></td>
<td></td>
<td>\192.168.1.2\sharename</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can be reached directly by its IP address</td>
<td>Select tcp://</td>
<td>raw://172.16.1.1:9100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>tcp://172.16.1.1:9100</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If your printer supports the IPP protocol</td>
<td>Select ipp://</td>
<td>ipp(s)://172.16.1.1/ipp/port1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>http(s)://172.16.1.1/ipp/port1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If your printer supports the LPR protocol</td>
<td>Select lpr://</td>
<td>lpr://172.16.1.1</td>
</tr>
</tbody>
</table>
If you wish to output the print jobs to file

Select file://
Enter the folder to save the printed jobs.

If you are integrating your printer with the LRS VPSX server

Select lrsq://
The LRS VPSX server as well as port and queue name.

NOTE: When using an LRS queue, the LRS Queue Data Transmission Application should be installed on the same machine that is hosting PDS.

lrsq://servername-IP:port/queue
lrsq://192.168.3.2:6612/my_docs

12.4.3. **Reprint Behavior**

Enable Reprints

Allow users or computer administrators to reprint documents. Useful if the printer is out of paper or jammed.

**Maximum Reprints**

Defines the maximum number of times a print job can be released.

**Reprint Interval**

Specify the timeframe available for the user to reprint a document. This time period starts once the user completes the first print job.
12.4.4. Configuring Printer Behavior

Release and Privacy Mode

Defines how the print jobs are handled once received by the PDS server. These settings should be aligned with secure release options configured.

- **None**: Print jobs are released to the destination queue immediately.
  - Note: The Print mode in the Remote Queue Monitor must also be set to Automatic.
- **General Delivery**: Print jobs will be held and must be released when using the Remote Queue Monitor or the PrintValet keypad.
- **Members Only**: Only users with PrinterOn Accounts can release print jobs.
  - Note: This should only be used when PrinterOn ACLs are also enabled
- **Operators Only**: Only users listed as PDS Operators can release print jobs.

Anonymity Level

Defines what information is reported from PDS to the reporting server. Please note that PrinterOn does not store and maintain any personal or sensitive information. Information reported when printing includes details such as results of a print job and some job metrics including page counts and formats.

- **Optional**: PDS will use the Anonymity Level configured for the printer in the PrinterOn Directory. No local overriding rules will be applied.
- **Anonymous**: Job name and job owner name are suppressed
- **Minimal**: Job details including page count, job size
- **Anonymous + Minimal**: Combines options from both Anonymous and Minimal
12.5. Managing Release Stations (PDS)

*Note: This option only applies to On-Premise Deployments*

PrinterOn supports a wide range of deployment options. In many cases a single release station, referred to by PrinterOn as the Print Delivery Station, is all that is required. In some deployments, multiple Print Delivery Stations will be used to distribute printers, provide redundancy, or connect printers in remote locations.

12.5.1. Adding Print Delivery Stations

The PrinterOn server supports unlimited PDS instances. Generally each PDS links to a list of printers for which it will receive jobs. The association between PDS and its printers is done using a unique ID referred to as a Serial Number. Each PDS instance will receive a Serial Number and Label to help identify it.

- Select **Home** then **Licensing**
- Scroll to the bottom of the page and click **Add Print Delivery Station**

![Add Print Delivery Station](image)

- Enter the name of the Print Delivery Station in the box provided and click **Add**. Enter a name that is meaningful to help identify the PDS later.
12.5.2. Link Printers and Release Stations

The Link Printers option provides a simple way to connect printers to Print Delivery Stations with simple drag and drop actions. To filter printers in the Link Printers dialog, simply enter part of the printer name in the search box.

- Select Printers
- Select Link Printers

- Select the PDS to manage from the combo box
- Simply select the printers to add to the PDS by selecting them under the Available Printers table
- Either Drag or click the Arrow to add the printers to the PDS
- Click Apply

To remove printers from a Print Delivery Station, simply perform the opposite.

NOTE: Adding printers to a PDS will remove them from other PDS instances.
12.6. Managing Departments

*Note: This option only applies to On-Premise Deployments*

Departments are used by PrinterOn to organize printers into groups. These departments may be used in reports to determine usage of certain printers, but more importantly, these departments can be used along with LDAP/AD Organization Units and AD Groups to provide additional access control options, and limit groups of printers to existing user groups.

The PrinterOn Server provides a simple, drag & drop interface to manage and configure departments.

12.6.1. Adding, Removing and Editing Departments

New Printer Departments can easily be added, and existing departments can be deleted or renamed using the Manage Departments interface.

- Select **Printers**
- Select **Manage Departments**

![Manage Departments Interface](image)

- **Click Add Department** to add a new department

![Add Department Interface](image)

- **Click Edit** next to an existing department to modify its name.
- **Click Delete** next to an existing department to remove it. Printers linked to the department will not be assigned to another department automatically.
12.6.2. Managing Printers in a Department

- Select Printers
- Select Manage Departments
- Click Printers to manage printers in the department

To **add printers** to a department,

- Select 1 or more printers from the **Available Printers** list.
- Drag the printers to the **Linked Printers** list, or click the arrow.

To **remove printers** from a department,

- Select 1 or more printers from the **Linked Printers** list.
- Drag the printers to the **Available Printers** list, or click the arrow.

Click **Apply Settings** to complete the operation.
13. Server Overview and General Settings

From the Home tab, you can access a number of general settings and details about your server. The following section describes the information available in this section.

13.1. Overview

The Overview page, gives high-level details about your server as well as quick access to the PrinterOn Administration Page at https://www.printeron.com/administrators.

13.1.1. Server Overview

The Server Overview section provides information about your PrinterOn Server software version and your license.

<table>
<thead>
<tr>
<th>Edition: Enterprise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Version: 3.0.0.561</td>
</tr>
<tr>
<td>Expiration: Never</td>
</tr>
<tr>
<td>PrinterOn Administrators Page</td>
</tr>
</tbody>
</table>

**Edition**

Indicates what Edition, such as Express or Enterprise, is currently licensed and installed.

**Server Version**

Indicates the current version of the PrinterOn Server installed. Click on the version to get more detailed information about the software installed.

**Expiration**

Indicates when the PrinterOn Server license will expire.
13.1.2. System Health

System Health provides an overview of the current components and services available to be configured. Click on the link to access more information about the components and how to configure them.

**Number of Managed Components**

Indicates the number of components that are currently active and running on the server. When all services are working correctly, the number of *Online* components should match the number of *Managed Components*. Clicking on the number of Online components will navigate to the Services page where components may be restarted.

**Number of Managed Servers**

Indicates the number of remote servers being managed by this Configuration Manager. Note that the local server is not counted.

**Export System Info**

Clicking this link generates a text file to be downloaded with a summary of the operating system and hardware details, such as the amount of memory, as well as the current installed software versions.

**Download Support Package**

Clicking this link generates a comprehensive support package, intended to provide the administrator or PrinterOn Support with details about the server as well as all logs for all managed components in a single zip file.
13.1.3. System Information

System Information provides an overview of the Windows Server currently being used. Note that this information represents the information where the parent configuration manager is installed. When installing all components on multiple servers, you should load this page by accessing the Configuration Manager on each server.

<table>
<thead>
<tr>
<th>System Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host Name:</td>
</tr>
<tr>
<td>Host IP:</td>
</tr>
<tr>
<td>OS Locale: English (United States)</td>
</tr>
<tr>
<td>Operating System: Microsoft Windows 7 Professional</td>
</tr>
<tr>
<td>Version: 6.1.7601 Service Pack 1 Build 7601</td>
</tr>
<tr>
<td>Memory: 2,047 MB</td>
</tr>
</tbody>
</table>
13.2. General Settings

The General Settings section allows an administrator to configure some of the most common configuration values from a single location. The options in this section will be applied to all components and servers. For example, enabling logging on this page will enable logging for all components in a single step.

13.2.1. Debug Logging

This option sets the level of detail for all components. Higher levels of logging are most useful when troubleshooting.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>All logging is disabled</td>
</tr>
<tr>
<td>Severe</td>
<td>Error messages (non-recoverable or fatal errors)</td>
</tr>
<tr>
<td>Warning</td>
<td>Warning messages (recoverable errors or unexpected conditions)</td>
</tr>
<tr>
<td>Info</td>
<td>Informational messages (default)</td>
</tr>
<tr>
<td>Config</td>
<td>Debugging messages included</td>
</tr>
<tr>
<td>Finer</td>
<td>Detailed troubleshooting logs.</td>
</tr>
</tbody>
</table>
13.2.2. **Printer Synchronization Settings**

The Printer Synchronization Settings allow you to customize how services and printers are synchronized.

13.2.3. **Job Management**

Job Management options allow you to configure a number of workflow related options that affect how the Server works with print jobs.

### Job Management

<table>
<thead>
<tr>
<th>Option</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Size Limit</td>
<td>50</td>
<td>MB</td>
</tr>
<tr>
<td>Pending Release Job Expiry</td>
<td>50</td>
<td>Minutes</td>
</tr>
<tr>
<td>Pending Download Job Expiry</td>
<td>50</td>
<td>Minutes</td>
</tr>
<tr>
<td>Preview Job Expiry</td>
<td>50</td>
<td>Minutes</td>
</tr>
<tr>
<td>Shared Job Expiry</td>
<td>50</td>
<td>Minutes</td>
</tr>
</tbody>
</table>

**Job Size Limit**

Indicates the maximum size of a document that will be accepted by the server. Users will be notified that their document is too large when submitting a document larger than the configured value.

**Pending Release Job Expiry**

Indicates how long a job will be held by the server after being printed before being deleted automatically.

**Pending Download Job Expiry**

This setting only applies if you have deployed a Print Delivery Hub component along with your server. This value indicates how long a job will be held before a printer or release station downloads the job.
13.2.4. Proxy Settings

Enabled
To use a proxy server, check the Enabled option.

Proxy URI
Supply the URL or IP address of the proxy server with which to communicate.

Proxy Port
Supply the network port number with which the proxy server has been configured to communicate.

User Name
If your proxy server requires authentication to communicate on the network, enter the user name required to authenticate against the proxy server.

NOTE: For NTLM Proxies, ensure that the Windows Domain name is added to the Username. This will automatically cause the server to use NTLM proxy options.

Password
If your proxy server requires authentication to communicate on the network, enter the password required to authenticate against the proxy server.
13.3. Services

The Services section allows you to quickly see the status of the sub-component services installed with your server. The options provided here allow you to start, stop and restart the connected Windows services.

<table>
<thead>
<tr>
<th>Component Type</th>
<th>Unique Identifier</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>PrintAnywhere Server</td>
<td>83352011</td>
<td>Running</td>
</tr>
<tr>
<td>Print Delivery Gateway</td>
<td>c5e65005</td>
<td>Running</td>
</tr>
<tr>
<td>Central Print Services</td>
<td>096c6f6d</td>
<td>Running</td>
</tr>
<tr>
<td>Print Delivery Station</td>
<td>2ee2b6e</td>
<td>Running</td>
</tr>
<tr>
<td>Simple Storage Server</td>
<td>bbc74e7d</td>
<td>Running</td>
</tr>
<tr>
<td>SQL Server</td>
<td>ea1f5af1</td>
<td>Running</td>
</tr>
</tbody>
</table>
13.4. Licensing and Deployment Modes

The licensing section allows you to review your current license, as well as how your PrinterOn Server communicates with the PrinterOn Cloud Directory.

13.4.1. Services Manager Configuration

The Services Manager Configuration controls how the components of the server communicate to retrieve printer information and license information.

On-Premise

The On-Premise deployment mode provides a fully isolated deployment with no external dependencies. All data is managed locally and all printer configuration is managed and stored in a local database.
On-Premise with Cloud Config

The On-Premise with Cloud Config deployment option provides a secure deployment that can operate with no persistent internet connections. All data is managed locally but printer configuration is managed using the PrinterOn Directory.

This deployment mode allows printers to be pre-configured and backed up using the PrinterOn Directory. No document data, or job information is transmitted to the PrinterOn Directory, only printer information is stored in the Directory.

This deployment mode also supports PrinterOn’s global driver distribution tools and automatic encryption key exchange between Print Server and Release Stations.
Hybrid Proxy

The Hybrid Proxy Configuration indicates that all communication with the PrinterOn Directory is proxied through a single Central Print Services instance. Each subcomponent will communicate with the address specified in the Services Manager URI.
Hybrid Direct

The Hybrid Direct Connected Configuration indicates that all communication with the PrinterOn Directory will be done directly from the component to the PrinterOn Directory. This is useful when using isolated components that cannot communicate with a single central server to be proxied.

13.4.2. License Details

License Details provide additional information regarding the Server installation and your license.

| License Details |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| Version: 2.0    | Edition: Enterprise |
| Type: Printer   | Start Date: 4/2/2015 |
|                 | End Date: Never |
|                 | Site UID: 579720166744 |
|                 | Administrator Email: matlaurent@printeron.net |

**Version**

Indicates the version of the server license. NOTE: This is not the version of the software, it indicates the version of the license.

**Edition**

Indicates the Edition of the PrinterOn Server installed, such as Express or Enterprise.
**Start Date**
Indicates when the license for your server was created.

**End Date**
Indicates when the license for your server will expire.

**Site UID**
This value is a unique identifier used to set up your server. This information is used during the installation to link your service to the PrinterOn Directory.

**Administrator Email**
Indicates the email address of the administrator who created and manages the server license on the PrinterOn website.
14. Authentication Configuration

The following section describes how to enable and configure authentication for your PrinterOn Server.

Navigate to the “Authentication” tab and select an authentication method from the drop down menu.

14.1. LDAP/AD Authentication

These settings provide the PrinterOn server the ability to use the Lightweight Directory Access Protocol (LDAP) to communicate with an Active Directory (AD) or any other directory services for authentication purposes. The LDAP/AD configuration allows you to configure multiple LDAP servers in order to authenticate the requesting user.

The configuration also allows you to configure advanced settings including:

- Guest Authentication Workflows
- Role-Based Access Control
- Trusted Application Configuration

These options are described later in this document.

To activate the LDAP configuration you must select “Apply Settings” after selection “LDAP/AD”.
14.1.1. Managing LDAP/AD Profiles

The PrinterOn Server supports configuring and using multiple LDAP/AD servers at the same time. Each server is independently configured and managed, which provides redundancy while authenticating the user if one of those servers is offline.

The LDAP/AD Server Profiles selection dropdown menu provides access to all configured LDAP servers. Unique labels can be configured for each server using the Name field, which would assist in identifying which server is being managed at any given moment.

To Add a new LDAP server, click the Add button. When adding a new LDAP/AD server, the PrinterOn Server will display a new view with example information included in the fields. Simply replace the example information with the connectivity information for your LDAP/AD server, select 'Apply Settings' to save the changes.

To Delete an LDAP server, select the server to be removed then click the Delete button.

- The PrinterOn Server will search and validate user credentials by connecting to all configured LDAP simultaneously.
- The PrinterOn Server will use the results of the first successfully located/authenticated user if multiple servers are configured.
14.1.2. Configuring LDAP/AD Profiles

Each LDAP/AD server is independently configured and managed by the PrinterOn Server. To configure an LDAP/AD server select the server to configure using the drop-down box and select Edit.

**Active:** Enables or disables the specified profile.

**Name:** A unique name for each configuration profile.

**Mode:** Indicates whether to use Basic or Advanced (Lookup) LDAP authentication processes.

**Advanced Authentication:** causes the user's login/password to be validated against your LDAP server. This style also allows the PrinterOn Server to look up other user attributes such as a user's email address, network login or even a custom attribute field. The supplied Bind DN and Bind Password information is used to locate and authenticate users.

**Basic Authentication:** validates that user credentials exist and are valid against a given LDAP server. Instead of retrieving the user's email address from the LDAP server, it is composed using their login ID and a specified domain name. This authentication method binds the user to the LDAP server using simple authentication, and assumes that your LDAP server uses (or extends) the standard schema. If you have a custom LDAP deployment, this authentication may not work without further modification. NOTE: User Lookup integration for email printing is not possible with Basic selected.

**LDAP/AD Server URI**

Enter the IP address or DNS name of the LDAP/AD server to be used for authentication. Note: If you plan to use SSL, change the default value from 'ldap://' to 'ldaps://' and the default port 389 to the SSL port.
Use SSL

Enable this option if your LDAP server requires SSL connections. In most cases, enabling SSL also requires that your LDAP URI points to port 636.

Administration Bind DN

(For Advanced Mode Only) The distinguished name (DN) representing the login used to bind the LDAP server for searches. This option is used to search for users and user information in the LDAP/AD server and can be represented as either 'server\username' or 'cn=display name,ou=OrganizationalUnit,dc=domain'.

If your LDAP server allows anonymous searches, leave this entry blank.

Administrator Password

(For Advanced Mode Only) The password for the login given in Administrator DN above.

If your LDAP server allows anonymous searches, leave this entry blank.

Search DN(s)

The distinguished names (DN) representing the branch from which the search for the users will occur. When Advanced LDAP is selected, searches will look for users in this branch and below of the LDAP tree.

This field supports multiple Search DNs separate multiple DNs with a semi-colon (e.g. ou=OrganizationalUnit,dc=domain).

Domain Name to Append to User ID

(For Basic Mode Only) The domain name used in conjunction with the user's ID to create their email address. The domain name is appended to the user's ID to make a valid email address. For example, if the user id is "jsmith" and you set your domain name to "myorganization.com", then the constructed user's email address will be "jsmith@myorganization.com".
**Windows Domain Name**

Indicates a domain name or other qualifier that will be prepended to the user ID when submitted with the print job. The user ID submitted will be transmitted throughout the workflow and communicated with any third party print management systems to assist in reporting and user tracking.

**Follow LDAP Referral**

Indicates whether LDAP Referrals should be ignored or followed when searching for users on an LDAP/AD server. This option should generally be set to ‘Follow’ unless specifically required by your LDAP/AD server.

**Email Lookup Wildcard Search**

Indicates whether wild cards will be used in searching. When set to True, the PrinterOn Server will allow wild card lookup.

**Prepend “smtp:” to E-Mail Address Searching**

Some LDAP/AD environments contain multiple user IDs for each user. When performing a user lookup using a supplied email address, prepending “smtp:” to the user ID will assist differentiating between users. This setting should be enabled when using user email lookup in an AD environment.
**User ID Attribute**

The LDAP/AD server attribute field containing the user login IDs. This attribute is appended to the Base DN in order to do user lookup in the Directory. For example, given 'cn' as the User Id Attribute, the PrinterOn Server will attempt to validate users via the path cn=LoginName,ou=People,dc=ldapdomain.

**User Email Attribute**

The LDAP/AD server attribute field that contains the user's email address. This is appended to your Base DN in order to fetch the user's email address once they are validated against the Directory. For example, given 'mail' as the User Email Attribute, CPS will attempt to look up user's email addresses in the directory via the path mail,ou=People,dc=ldapdomain

**User Display Name Attribute**

The LDAP/AD server attribute field that contains the full display name.

**User First Name Attribute**

The LDAP/AD server attribute field that contains the users’ first name.

**User Surname Attribute**

The LDAP/AD server attribute field that contains the users’ surname or last name.

**User Phone Number Attribute(s)**

The LDAP/AD server attribute field that contains the users’ phone number.
14.1.3. Additional LDAP/AD Configuration Options

Web Authentication Enabled for Mobile

When disabled, the PrinterOn Server will not require LDAP/AD credentials from mobile app users. This option should ONLY be disabled if web-based authentication is configured through PrinterOn's services to ensure that the mobile users are prompted to authenticate.

14.1.4. Advanced LDAP/AD Authentication Options

![Advanced LDAP/AD Authentication Options](image-url)
14.2. **Manage Guest LDAP Settings**

The PrinterOn Server can control how Guest Users are identified when reporting and integration with output/print management solutions. To configure Guest workflow Settings:

- Check the **Guest Login Enabled** option
- Select **Manage Guest Settings**

14.2.1. **Default Guest User Identification**

![LDAP Guest Settings](image)

**Do Nothing**

When selected, all guest job submissions will have a set job owner name of ‘GuestUser’.
14.2.2. Common Guest User Identification

**Default User ID**

When selected, all guest job submissions will have a set job owner name based on the value set in this field.

**Guest User ID**

Indicates the User ID that should be used for all Guest Users and will be the same value for all Workflows. This value will be delivered to third party solutions and appear in the PrinterOn Reports.

14.2.3. User Supplied Guest User Identification (Prompt)

**Prompt**

When selected, Guest Users will be prompted for a user identifier before print job submission.

**Prepend Guest User ID**

When set, all Guest jobs will be prepended by the value set in this field. **NOTE:** This field may be left blank if no value should be set.

**Ensure User ID is unique**

When enabled, the PrinterOn Server will verify the user name supplied by the guest user does not match any valid usernames within the LDAP/AD structure.
14.3. User Rules and Printer Access

User Rules and Printer Access allows printers to be organized in groups, referred to as “Printer Departments” and present these printers to groups of users. Printer Departments are “linked” to users. Any user in a group will have access to the printers in the department.

NOTE: The only limitation imposed is that all rules must be based on either OUs or Groups, there cannot be a mix of both.

User Rules also apply to discovery and search capabilities from the various workflows including web and mobile apps. When searching for printers using the PrinterOn mobile app, or automatically discovering devices using PrinterOn Discovery, users are only presented with those printers to which they have been granted access.

User Rules also apply when using technologies such as Apple’s AirPrint devices. Due to its implementation constraints, the PrinterOn Server cannot limit what printers are visible to iOS devices but it can limit their ability to print to the printers. Users will be able to see all printers that have been enabled for iOS users but these users will not be able to submit print jobs without successfully authenticating.

14.3.1. Access Control Structure Selection

Printer access is based on the organization of an LDAP or Active Directory server. Individual Organization Units (OUs) can be linked to one or more Printer Departments. Similarly LDAP Groups may be linked to one or more Printer Departments. Multiple Rules may be created to address the needs of any organization with complex configurations.

Select whether to use OU-based or Group-based management and client, the “Manage User-Based Printer Access”.

![LDAP Department Behavior](image-url)
14.3.2. Access Control Configuration

Create Rule/Select a Rule: Press “New” to create and configure a new rule, or select from a list of existing rules.

Delete: To delete an existing rule, select it from the list and click “Delete”.

Name of Rule: Displays the name of the current rule. Modify the value and click save to change the name of an existing rule.

OU Configuration:

Organization Unit (OU): The Discovered list presents a list of the automatically located OUs in the currently active LDAP configuration. You may use an existing OU to quickly configure a rule.

Optionally a fully qualified OU may be entered in the “Current” field.

Recursive: When NOT enabled, CPS will only allow users that are part of the current OU and not members of its sub-units. When enabled, CPS will traverse the OU tree and match users that may be in sub-units of the parent OU as well.

In the example below, if MainDept is configured, only User1 and User2 will be valid if Recursive is not enabled. User3 and User4 will be valid if Recursive is enabled.

- MainDept
  - User1
  - User2
  - SubDept
    - User3
    - User4
**Group Configuration:**

**Group:** The *Discovered* list presents a list of the automatically located Groups in the currently active LDAP configuration. You may use an existing Group to quickly configure a rule.

Optionally a fully qualified Group/CN may be entered in the “Current” field.

**Printer Departments:** The Printer Departments section is used to link Printer Departments to the User Rule created.

Select a Printer Department from the list of Available departments and use the arrow buttons to add them to the Linked list. Any user who is part of the User Rule will be allowed to search for and print to the printers in the linked departments. Printer Departments may be linked to multiple User Rules.

**Allow All Departments:** Indicates that users in User Rule will be able to access all printers regardless of their department. This may be used to provide a group of users such as an administrator to access all printers.

**Save:** Saves the current configuration on the User Rule Configuration page.

**Dismiss:** Closes the User Rule Configuration page.
14.4. Manage Trusted Print Settings

The Configuration Manager is the Interface used by the administrator to enforce PrinterOn Service rules and policies for the print jobs submitted to the server by Google Cloud Print users. Note: This option appears on the ‘LDAP/AD’ management screen.

14.4.1. Trusted Application Behavior

The ‘Trusted Application Behavior’ feature allows trusted applications to submit jobs to secure PrinterOn printers without requiring additional validation of users. It assumes that the trusted application has taken the steps required to authenticate the users on its behalf.

The ‘Trusted Print’ setting value determines how the jobs retrieved by the PDG Connector (Trusted Print Application) from Google Cloud Print are to be handled. The default value is set to ‘Authenticated and Guest’.

**Allow All**

Accepts all print requests. Anyone who has been authenticated by the GCP service to print to the published queues will be able to submit jobs to the PrinterOn printers.

**Reject All**

Rejects all print requests. The administrator can use this option setting to disable submission of print jobs through the Google infrastructure to PrinterOn printers.

**Authenticated**

Accepts print requests submitted by print users who can be identified in the Active Directory. If the corporate/institution’s active directory is updated to include information pertaining to Google Cloud Accounts, then the administrator can control access to printers.

**Authenticated and Guest**

Accepts print requests submitted by print users who can be identified in the Active Directory or who are Guest users in the context of Printer.
15. Additional Authentication Schemes

15.1. PrinterOn AAA Login

Enabling this authentication method enables user authentication to be performed by a designated web server/service. When enabled, all other authentication methods are deactivated. Integration with PrinterOn’s Job Accounting API is required (Note: This setting is configured on the PrinterOn.com web portal below the ‘Payments and Authorization’ tab for each printer).

User Authentication URL

Indicates the URL to which the PrinterOn Server will redirect users during login when the custom user authentication is enabled. Please note that this authentication scheme must be configured in conjunction with PrinterOn’s hosted configuration interface.
15.2. PrinterOn Access Control Authentication

Enabling this authentication method causes the user's login information to be authenticated against PrinterOn's user database during printing. When enabled, all other authentication methods are deactivated.

15.2.1. Managing Users

Managing PrinterOn users is done from the PrinterOn web administration site.

1. Log in at www.printeron.com/administrators
2. On the Home page, choose Manage Access Control Lists
3. Give your list a name and choose New ACL
   a. Each printer can have a unique list of users. Users can be repeated to allow access to multiple printers, or you can choose to group printers by departments.

<table>
<thead>
<tr>
<th>Name</th>
<th># of Users</th>
<th># of Printers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Dept</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Reception</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
4. Manage your printers first
   a. Group printers by user groups if required to allow similar users to all have access to the same printers

   Group printers by user groups if required to allow similar users to all have access to the same printers.

   Name: Reception

   ![Available Printers]

   Company-sales

   ![Attached Printers]

   Company-reception

   ![Add/Remove]

   ![Save]

5. Save settings
6. Select the ACL you just created and now click **Manage Users**

   Name: Reception

   ![Attached Users]

   Sales@company.com
   Reception@company.com

   ![Add User]

   ![Remove]

   ![Add Filter]

   ![Save]

7. Add individual user email addresses
   a. Users will get an automated message to create a password with PrinterOn
   b. They will use this to authenticate printing. Email submissions must be sent from this address, and the password created here will authenticate them in other methods like web and mobile app submissions.

8. Save changes
Enable Guest Login

Allow users without PrinterOn credentials to submit print jobs.
15.3. Remote Authentication (SSO)

Enabling this authentication method causes the user’s login information to be set based on authentication with a designated web-server/service. This can be used to enable a Single Sign-On (SSO) with an existing authentication scheme.

![Central Print Services Authentication Workflow Selection](image)

15.3.1. SSO HTTP Header Requirements

Your Web Server must authenticate the user, and pass their identification to the CPS application via the `REMOTE-USER` HTTP header.

**Enabled**

To use Remote Authentication, navigate to the ‘Authentication’ tab, select ‘Remote Authentication (SSO)’ from the drop down menu, then select the ‘Apply Settings’ button. When enabled, all other authentication methods are deactivated.
16. Advanced Clustering and Document Processing Scalability

*Advanced Clustering is only available for Enterprise Edition

There are many advantages to implementing clustering for your Server deployment. Enabling and configuring basic clustering with the PrinterOn Server is simple and can be completed with minimal effort and time. The solution has been designed to minimize configuration and maintenance.

The purpose of Server Cluster for document processing is to:

- Provide additional server capacity and performance
- Optimize server utilization by distributing documents across multiple PrintAnywhere components
- Providing additional redundancy
- Simplifying maintenance

The PrinterOn Server offers two forms of clustering depending on your deployment needs and requirements, Document Processor Clustering for increased job processing capacity and Advanced Redundancy Clustering that provides backup service should issues occur with physical hardware or to simplify service upgrades.

16.1. Document Processor Clustering

Basic clustering involves attaching a second PrintAnywhere Processing Server to the primary server’s Status Server. The Processing Server is responsible for converting/rendering documents supplied by the user. The Status Server is responsible for distributing jobs across available Processing Servers.

16.2. Server Redundancy Clustering

Server Redundancy Clustering involves installing and associating a second PrintAnywhere Status Server to the primary PrintAnywhere Server’s Status Server. The Status Server is responsible for managing incoming job requests and distributing jobs across available Processing Servers to be printed.

16.3. Clustering Requirements

PrinterOn supports deploying the necessary Document Processing Clustering components on the same physical server as your primary PrinterOn Server using separate virtual machines. This approach allows the deployment to minimize additional costs and yet can still provide the same performance as a separate physical server.

Requirements:

- An additional virtual machine prepared with the necessary applications for processing documents.
- Sufficient memory on the host physical server to allocate the minimum recommended memory to each virtual machine.
• Each virtual machine must be addressable on the network as the Status Server must be able to respond and communicate with each Processing Server and the Processing Server must be able to independently resolve and communicate with the Status Server.

16.3.1. Additional Clustering Notes

When configuring your service for clustering or diagnosing issues, it is useful to understand the behavior of the server once configured for the clustering. The following provides a brief overview of the clustering behavior.

• The Status Server delivers jobs to Processing Servers in the order they appear in the Configuration Utility.
• The Status Server delivers new jobs to the least busy server each time a new job arrives. As a result, in a low volume deployment with clustering enabled, the first Processing Server in the list will receive the bulk of the jobs.
• The Processing Server reports its capabilities to the Status Server during a “Synchronization” process. This process:
  o Informs the Status Server which applications and formats are supported by each configured Processing Server.
  o Allows the Status Server to determine whether a Processing Server is running.
  o Occurs every 2 minutes, allowing the Status Server to update its state information when idle.
• The Status Server is also informed of the state of the Processing Server each time a job is submitted or completed allowing the Status Server to maintain an up to date state of all Processing Servers.
• If a configured Processing Server is not available when the Status Server is started, the Status Server will continue to automatically check its status every 2 minutes. When the Processing Server is started, the Status Server will automatically detect and start using the Processing Server.
• When all Processing Servers in a cluster are unavailable the Status Server will reject incoming jobs.

16.3.2. Retrieving a PrintAnywhere Server Serial Number

Log in at www.printeron.com/administrators and click the Software icon.

Scroll to the PrintAnywhere section and add a new PrintAnywhere server to your service.

Get a Serial Number for another PrintAnywhere server

To obtain a Serial Number, first enter a description for your server. You may attach up to 4 PrintAnywhere Servers to your PrintSpot.

Description

Enter a Description of your additional server and select “Get Serial Number”
16.4. Clustering Configuration Steps

1. Run the Server Installer
2. In the “License Summary File” window, browse to your PrinterOn license file and select it. Click Next.
   a. Ensure that your license file contains multiple PrintAnywhere server serial numbers

3. Under “Setup Type”, choose Custom and click Next.
   a. Select the PrintAnywhere Server option

4. Choose Start > All Programs > PrinterOn > Configure Server
   a. If on Windows 2012, search for Configuration Manager from the Start menu
   b. Or go to http://127.0.0.1:8057

5. You will be prompted to log in to the Configuration Manager,

6. Selecting Clustering section under Advanced

7. Complete the installation.
16.4.1. Connecting Servers for Configuration

The PrinterOn Configuration Manager allows you to manage multiple servers from a single location. To complete this process you must select a Parent Configuration Server. All other servers will register with this parent server.

Note: You may still configure individual servers locally, regardless of parent configuration.

Enter the Parent Server’s IP address and port in the Parent URI field and press connect. The default port is 8057.

You may now log onto the Parent Server to manage this Child.
16.5. Connecting Servers

Select a Server to configure using the dropdown control. The dropdown will list all connected servers.

16.5.1. Adding Processing Servers

Processing Servers increase the capacity of the solution. By default, the local Processing Server should be connected. Press Add Processing Server to start.

Select a Server

Select Manual Entry to enter information for a server that is not managed by the Configuration Manager.

Select a known server from the list if it is managed by the Configuration Manager.
**Use Host Name**

If enabled, the servers hostname will be used for communication, otherwise, the IP address will be used.

*NOTE:* When operating, the server will perform a reverse DNS lookup to validate the IP address provided, ensure that the IP address is valid and routable between servers

**Reciprocate Connection**

This option will copy this configuration to all other Status Servers managed by the Configuration Manager.

### 16.5.2. Adding Status Servers

Status Servers increase add redundancy to the solution as well as capacity. The local Status Server is NOT added to the list. Status Servers share job information during job processing. Add incoming jobs are received by a Status Server before being directed to the least busy Processing Server.

**Select a Server**

Select Manual Entry to enter information for a server that is not managed by the Configuration Manager.

Select a known server from the list if it is managed by the Configuration Manager.

**Use Host Name**

If enabled, the servers hostname will be used for communication, otherwise, the IP address will be used.

*NOTE:* When operating, the server will perform a reverse DNS lookup to validate the IP address provided, ensure that the IP address is valid and routable between servers

**Reciprocate Connection**

This option will copy this configuration to all other Status Servers managed by the Configuration Manager.
17. Print Delivery Hub (PDH) Overview

PrinterOn’s Print Delivery Hub is intended to provide a simple and reliable solution to deliver print jobs to printers and MFPs distributed across numerous disparate and isolated networks. The Print Delivery Hub acts as a centralized distribution server coordinating the delivery of print jobs between PrinterOn’s print servers and clients, and PrinterOn’s print release station software.

When deploying a cloud printing solution, printers and MFPs may be distributed globally yet the desire remains to access these devices much like any other local device. The Print Delivery Hub offers a solution for enabling these print devices without the need for significant network reconfiguration. The Print Delivery Hub provides access to these devices while maintaining a high degree of security.

The PDH server accepts and holds print jobs generated and transmitted by PrinterOn’s clients for later downloading and release by PrinterOn’s Print Delivery Station software. The Print Delivery Station software initiates the communication from within the network and behind the firewall. The Print Delivery Station may also be configured to communicate using commonly available ports such as 80 and 443. This combination minimizes the network configuration required to deliver print jobs from one network to another.

Print Delivery Hub is based on the industry standard Internet Printing Protocol (IPP). PrinterOn has extended and enhanced the protocol with a number of PrinterOn specific extensions for improved print job data security (encryption), data compression and collection of print job metadata for print job tracking and integration with print management and other cost recovery solutions.
17.1. System Capacity

A single PDH can handle up to 5,000 PDS servers concurrently and at least 100,000 print jobs per day. Please note that one PDS may provide access to multiple printers or MFPs.

Increasing the number of PDH servers used (either in a single cluster or in a two cluster setup) allows for a larger number of PDSs to be handled concurrently.

17.2. Network Layout

Without using any PDH servers, the PrinterOn system may send print jobs directly to PDS or print jobs may be sent through PrinterOn’s hosted PDH service, which is typically used with PrinterOn hosted and managed services.

For On-Premise deployments delivering print jobs to printers installed in disparate networks (that is, network segments in separate physical locations, possibly different cities, states or countries), delivery of print jobs from a PrinterOn Server or the PrinterOn PrintWhere driver directly to the PDS may not be possible. In cases where printing directly is not possible, it becomes desirable to deploy a PDH server to provide simplified access to remote printers and MFPs connected to PrinterOn’s Print Delivery Station software. In this arrangement, print jobs are delivered to the PDH setup and the PDS servers communicate with PDH to detect and download the print jobs.

In such a scenario, the PDH service must be accessible over the network to the PDS servers. The PDH service can be installed in a central network operating center. Access to the PDH will be configured such that the PrintAnywhere Server, desktop PrintWhere clients and PDS deployments can access the PDH server. This configuration generally minimizes network changes, as the PDH is the only service requiring incoming network traffic access.
17.3. Common Deployment Scenarios

Deploying multiple PDH instances in either a one cluster or two cluster configuration can increase availability of the printing service, increase overall capacity and allow for part of the system to be disabled for maintenance purposes.

Note that clients such as PrintAnywhere and the PrintWhere Universal Print Driver may be configured to communicate with a PDH server and also configured to communicate directly to a PDS. This configuration option is managed on a per-printer basis. The software will first attempt to communicate directly to PDS (which provides a performance advantage), if the software determines it cannot contact the PDS, it will use the configured PDH as an alternate route to deliver print jobs.

17.3.1. Single Server Deployment

The simplest way to enable printers and MFPs in separate networks is to deploy a single dedicated Print Delivery Hub. The Server will be deployed and configured so that it is accessible by both the PrinterOn Enterprise server and the remote print locations.

Each PrinterOn virtual printer will be configured to deliver print jobs to the Print Delivery Hub and each Print Delivery Station will be configured to download print jobs from the PDH.
17.3.2. Two Node Redundant Deployment

In this example two PDH servers are configured to operate as a single system. This deployment allows for future growth by adding additional nodes to either server to expand the number of Peers in the cluster. In this configuration jobs are duplicated on each server. By replicating the servers the overall service is more resilient to hardware failures that may occur on either server.

Please note that both PDH servers must be configured to ensure the cluster is addressable via a single DNS entry. A load balancer must also be configured to distribute network traffic between the servers. The load balancer distributing traffic to the PDH nodes would have to direct traffic away from the node being taken down for maintenance and redirect that traffic to the remaining nodes.
17.3.3. **Multiple Redundant PDH Cluster**

This configuration is an expansion of the previous example. Additional PDH cluster peers may be added to each PDH cluster to increase overall capacity. Each cluster Peer shares a common storage subsystem where print job data and metadata files are stored. The common storage subsystem is typically a network shared file system.

Each Peer in the cluster may be deployed either on a distinct virtual machine on a single physical server or may be deployed on a separate physical server.
17.4. Internet Communications Configuration

The Internet Communication Tab contains the main settings controlling incoming and outgoing communications used by the PDH software.

17.4.1. Network Identification and Access

PrinterOn print clients, such as PrintAnywhere and PrintWhere, and Print Delivery Station deployments are designed to access the Print Delivery Hub service as a single entity. As a result when deploying a multi-node setup, care must be taken to ensure the cluster is addressable via a single DNS entry and that load balancers accept traffic for that name and forward the traffic appropriately to each and any PDH server in the cluster.

17.4.2. Licensing and Web Services Manager

**Serial Number**

This is the serial number of PDH license and can be obtained from PrinterOn under the Software tab once you log in as an administrator. This is required to activate the Print Delivery Hub.

**Web Services Manager**

The Services Manager Configuration controls how the components of the server communicate to retrieve printer information and license information.
17.4.3. Network and Broadcast Settings

The Network and Broadcast panel shows the configured (incoming) TCP port numbers and whether they are enabled. By default, port 631 is enabled and cannot be disabled. This is the well-known port assigned to the Internet Printing Protocol (IPP).

Two additional optional ports can be configured and enabled, as desired. Typical installations use port 80 and port 443. This latter port is usually configured to use SSL (see the SSL Tab).

Often Print Delivery Stations are deployed in locations whose networks may offer limited or controlled access to the Internet. Port 80 and 443 are the most commonly accessible ports. Enabling ports 80 and 443 provides the highest accessibility for remote PDS deployments.

17.4.4. Thread Pool

The Thread Pool panel shows the configuration parameters for the worker thread pool used by PDH for handling incoming communication traffic.

PLEASE NOTE: Only administrators who have a good understanding of networking and server management should modify the settings in this section. PrinterOn has chosen default values that should satisfy the requirements of most installations.
The **Min Threads** and **Max Threads** settings control the size of the thread pool used for each of the Communication Ports enabled in the Communication Ports panel. A connection is used while print client software such as PrintAnywhere is querying for printer status / availability and while a print job is being transmitted. (These worker threads are also used in PDH – PDH peer and cluster communications.) Threads are returned to the pool when the operations are complete. The default values should satisfy most installation requirements. Installations that handle a heavy traffic load may benefit from increasing the Max Threads setting.

**Min Threads**

The Min Threads setting controls the initial number of threads allocated by the software and helps prevent thread starvation at startup time.

**Max Threads**

The Max Threads value sets the upper limit to the number of simultaneous connections each port can accommodate.

**Socket Backlog**

Controls the number of ‘half-open’ sockets each port can support. Half-open sockets are those that are in the first stages of establishing a communication channel between the print client and the PDH server. The default value of 50 is applicable to most installations. Network setups that experience large latencies (100 ms or more) between PDH and print clients might benefit from a larger Socket Backlog value such as 100.

**Socket Shutdown Delay**

Specifies the amount of time the PDH server keeps the socket open after transmitting the final data and before fully closing the socket. The delay period helps to ensure an orderly teardown of the socket. As with the Socket Backlog parameter, setups that experience large latencies (100 ms or more) might benefit from a larger Socket Shutdown Delay. If print clients are experiencing errors such as unexpected socket termination, increasing this value to 500 ms might improve the communication process.

**Idle Time**

Specifies the socket timeout period used by the threads in the thread pool. While waiting for a response from the IPP client software, if no data packet is received for this amount of time, it is assumed that the client has disconnected ungracefully. In that case, the socket is closed and the worker thread is recycled back into the thread pool, ready to service another communication request.

### 17.4.5. Print Delivery Station Communication

This section provides additional configuration and control over how a Print Delivery Station (PDS) and other printer agents accesses and communicates with a Print Delivery Hub (PDH).
Enhanced client authentication policy can be set to “Always”, “Optional”, and “Never”.

**Enhanced Client Authentication Policy**

This will determine the type of authentication required in order to connect to PDH and download print jobs. The available options are: Always, Optional, and Never.

**Password**

This setting is used to ensure communication between Print Delivery Hub and Print Delivery Station is secure. The Password value entered in PDH must be entered into the corresponding Password field in the Print Delivery Station Settings Dialog.

**Accept Jobs For Any Print Delivery Station**

This setting controls whether PDH will accept any print jobs destined for any Print Delivery Station. Having this option enabled is the simplest method to deploy a PrinterOn Service.

When disabled each agent must register their PrinterOn printers with the PDH server. The PDS and PDH software performs the registration automatically when configured to do so; the PDS registers its associated printers when it checks for pending jobs to download. The PDH server will reject any jobs destined for a printer that is not registered with the server.

It is generally recommended to enable this option when initially deploying your service to simplify the configuration and management process.

### 17.4.6. XMPP Notifications

This panel controls settings pertaining to the optional XMPP Server integration feature. When enabled, this feature causes PDH to connect to an XMPP Server (configuration details specified in the remaining fields in this panel) to publish print job availability information.
Installation, configuration and administration of the XMPP Server are beyond the scope of this document.

Corresponding XMPP Notification settings must be entered into the Agent.
17.5. Job Storage

The Job Storage Tab contains the settings controlling where print job data files are stored and certain rules for accepting print jobs and purging them if they have been abandoned.

17.5.1. Print Processing

This panel controls settings regarding job data storage and rules used to determine whether to access or reject new jobs.

**Print Job Directory**

This setting specifies where the print job data and metadata files are to be stored. When implementing a PDH cluster this storage location must be available to all PDH peers. This is typically a network storage location accessible to all nodes in a cluster.

**Enforce Job Size Limit**

Indicates whether the job size limit configured in the Job Size Limit field should be enforced and applied to new jobs.

**Job Size Limit**

If configured and enabled, PDH will reject incoming print jobs whose size exceeds the specified limit.

**Reject Duplicate Jobs**

This setting controls whether duplicate print jobs are immediately rejected by the system. Print jobs are identified by Job ID number (as defined by the Internet Printing Protocol (IPP) RFC.) The cause of duplicate print jobs is usually an unreliable network connection that causes the software that transmitted the print job to miss the acknowledgement that the print job had been received properly. When that happens, the print client software can re-transmit the print job. This feature prevents such duplicate print jobs from being accepted. By default, this feature is enabled.

**Accept Jobs from PrinterOn Clients Only**
This setting controls whether incoming print jobs from non-PrinterOn Clients will be accepted. When not enabled, the PDH server will accept IPP compliant print jobs from any IPP print client.

**Use Print Job Data Compression**

Controls how print job data compressions is managed by PDH.

- **Optionally:** Should be left as “Optionally” for best compatibility. Indicates that PDH will report that compression is supported and the submitting client may optionally compress new prints jobs prior to submitting to PDH. Release station clients, such as PDS, may choose to download the print data in a compressed or uncompressed state depending on the capabilities of the print device.
- **Never:** PDH reports to the sending client that compression is not supported. Release station software, such as PDS, will receive all jobs in an uncompressed state when downloading jobs.
- **Always:** PDH reports to the sending client that compression is supported. Release station software, such as PDS, will receive all jobs in a compressed state when downloading jobs.

17.5.2. **Unclaimed Job Handling**

This panel controls the feature whereby unclaimed print jobs are automatically purged from PDH if they have remained on the server beyond the specified interval.

**Purge Unclaimed Jobs**

When enabled PDH will automatically delete jobs that have not been downloaded by a PDS client.

**Job Retention Period**

Indicates how long the PDH server will store print jobs before being deleted.
17.5.3. **Advanced Network Settings**

This panel provides additional advanced network configuration options generally intended for an advanced or customized deployment.

![Advanced Network Settings Panel](image)

**Server Download Buffer Size**

The Server Download Buffer Size provides a hint to the underlying Operating System to use the specified buffer size. This setting correlates to the TCP Window Size. The option is provided to help modify the behaviour to address network scenarios, such as high bandwidth and also high latency. Too high a value here wastes memory and can decrease throughput if the network suffers too many packets that need to be retransmitted.

**Enable Download Pacing Feature**

The Download Pacing Feature causes PDH to monitor the amount of data waiting in its (internal) transmit buffer. When the transmit buffer gets 75% full, PDH will slow the rate at which more data is loaded into the transmit buffer. When the transmit buffer goes back below the configured threshold, PDH will increase the rate at which data is provided to the buffer. The goal is to prevent PDH from buffering the entire print job data payload in memory, reducing memory usage by PDH.

The Download Pacing Feature is enabled by default and is expected to be useful in nearly every situation. In order to allow the PDH Admin to troubleshoot situations where print job data download speeds appear to be highly variable, the feature can be disabled as a diagnostic aid.
17.6. Logging

The Logging Tab contains the settings pertaining to application and debug logging. Log files are created as required and are automatically deleted. The PDH server will automatically delete older log files to ensure the total size of all log files stays within the Total Size Limit setting.

When a new log file is created, the log file name is created using the time the file was created as a unique filename. Log file names take the form: ListeneryyyyMMddhhmmss.sss.log where:

- **Listener** - base name for all PDH log files
- **yyyy** - year
- **MM** - month (January = 01)
- **dd** - day (first of the month = 01)
- **hh** - hour (24-hour clock)
- **mm** - minute
- **ss.sss** - second (including milliseconds)

**Output Directory**

This setting specifies where the log files will be written.

**Maximum File Size**

This setting configures the maximum file size of an individual log file. When a log file’s size reaches the Maximum File Size value a new log file will be automatically created.

**Total Size Limit**

This setting controls the total size of all the log files that can exist at any one time. If creating a new log file causes the total storage used by the system to exceed this limit, the oldest log file is automatically deleted.
17.7. SSL

The SSL Tab allows you to configure PDH to support SSL. Enabling SSL for your PDH server provides additional security for print jobs delivered through the server. When enabled and configured with SSL, clients submitting print jobs to the PDH server will utilize a secure SSL channel and Print Delivery Station deployments downloading print jobs to be printed will also use SSL.

SSL Certificate Keystore

If any port is configured to use SSL, the SSL Certificate Keystore panel activates, allowing you to set details for the SSL Certificate.

PDH uses a standard format file for storing SSL Certificates, known as a keystore. As defined by Oracle (Sun), the keystore file can contain multiple certificates.

Keystore File

This field allows you to specify the full path and file name for the keystore file used to store the SSL Certificate. Use the Browse button ‘…’ to select an already existing file. You can use the Create button to create a new keystore file or a new key within an existing keystore file. It is recommended that the PDH SSL Certificate be stored in its own keystore file, not the cacerts file in the underlying JRE installation.

When you click the Create button, you are presented with a dialog box for required and optional data items used when generating an SSL Certificate.

Keystore Passphrase

This is the passphrase (or password) for the overall keystore file. The default value is password. If using an existing keystore file, you must specify the correct passphrase here.

Key Name

This is the key (or certificate) name used to identify the certificate that PDH is to use.

Key Passphrase

This is the passphrase (or password) for the certificate that PDH is to use. The default value is password.
17.8. Scalability

The Scalability Tab allows you to configure PDH to use clustering to deploy a system that is both fault-tolerant and scalable. The scalability features configured here complement those configured on the Cluster Peers Tab. (By default, these features are disabled so PDH is pre-set to operate as a standalone server.)

Cluster Peers are PDH nodes that share a common storage subsystem where print job data and metadata files are stored. The common storage subsystem is typically a network shared file system. Each peer can create, read, write or delete any print job on the common storage subsystem in order to accept print jobs from print clients and make them available for download by Print Delivery Station deployments. When a PDH node creates, updates or deletes any job, that PDH node sends each configured peer a message to inform the peer of the update. The messages between Cluster Peers are called Peer Notification messages.

A maximum of two PDH clusters can be defined for a particular PDH installation. When Remote Hub Replication is enabled, print jobs are automatically copied between PDH clusters. The PDH node that receives the print job from the print client transmits a message to the Remote Hub alerting that cluster of the newly received print job. The PDH node that received this update copies the print job to its own Print Request Directory (which may be shared with other Cluster Peers.) Update messages between PDH clusters are called Replicate Job messages.

The maximum number of PDH nodes comprising a PDH setup is limited to 9. Care must be taken to ensure that each PDH node is assigned a unique Peer ID number.

At software startup and, optionally, at configurable intervals thereafter, the software ensures the entire job list is fully synchronized between all active PDH nodes.

By default, Scalability and Cluster Peer settings are disabled. To enable these features, use the controls on the Scalability and Cluster Peers Tabs.
The individual configuration settings specified in the Scalability Tab are detailed below.

17.8.1. **Cluster Security**

**Enhanced cluster authentication** policy can be set to “Always”, “Optional”, and “Never”.

**Never** – Authentication between cluster peers is not enforced

**Optional** – Authentication between cluster peers is validated if a password is supplied

**Always** – Authentication between cluster peers is always validated.

**Cluster Communication Password**

Indicates the password that should be used when cluster peers communicate. Each cluster peer should have the same password configured.

17.8.2. **Cluster Configuration**

**Peer ID For This Computer**

Specifies the PDH node number for this instance of the software. You must ensure that each PDH instance is assigned a unique ID number.
17.8.3. *Remote Hub Replication*

![Remote Hub Replication Configuration](image)

- **Enable** checkbox specifies whether the feature is enabled.
- **Pacing Delay**
  - Configures the amount of time to wait between Replicate Job messages during software startup or cluster resynchronization when that feature is enabled. This delay interval helps prevent network saturation between PDH nodes. The default value of 50 ms is usually sufficient for most environments. If your service experiences significant load, and print jobs between PDH clusters are significantly different, increasing this value to 75 or 100 would be recommended.
- **Remote Hub URI**
  - Indicates the address of the remote PDH cluster as specified via the Scheme, Address and Port fields.

17.8.4. *Remote Hub Resynchronization*

When enabled, this feature causes the entire job list held in memory to be replicated with the other PDH Cluster. During normal operation, a PDH cluster will automatically inform its paired cluster that jobs have arrived, been downloaded or deleted. Resynchronization occurs at a set timeframe to ensure that both clusters are mirrored and compensate for any variations.

![Remote Hub Resynchronization Configuration](image)

- **The Resynchronization Interval**
  - Specifies the amount of time between resynchronization events. The timer starts after the software has started running. Decreasing the timeframe between resynchronization will require additional network resources.
Use One-Shot Resynchronization

Controls whether a single resynchronization message is used to update the other PDH Cluster regarding the entire list of jobs known to this PDH node. If this feature is disabled, a separate Replicate Job message is transmitted for each job known to this PDH node.

One-shot synchronization sends a single, large update message to a paired cluster. A large message is more susceptible to transmission failure on a congested network segment, but is generally faster than using separate Replicate Job messages for each known job. Smaller update messages are more reliably transmitted and received but have a higher overhead due to establishing a new connection for each update. This means the resynchronization process takes longer to complete.

If the network between PDH clusters is high quality and high performance, enabling this option is recommended.
17.8.5. Cluster Peers

The Cluster Peers allows you to configure network settings for communicating with PDH Peer instances.

A cluster peer, also referred to as a node, is a fully functional Print Delivery Hub Server. A PDH Peer is intended to provide increased reliability, maintainability and performance. For a multi-node setup, care must be taken to ensure the cluster is addressable via a single DNS entry and that load balancers accept traffic for that name and forward the traffic appropriately to each and any PDH server in the cluster.

Having more than one node in a single cluster allows the cluster to handle more simultaneous connections (from PrinterOn Print Delivery Station software). Having more than one node in a single cluster also means the cluster is more resilient to failure of an individual node due to system failures. It also allows an administrator to remove, disable or update individual nodes without impacting the overall cluster.

When you Add a Cluster Peer to the list in this Tab, you are shown the Add Peer Dialog

![Add Cluster Peer Dialog](image)

**Enabled**

Allows you to enable or disable communication to the Peer.

**Scheme**

Allows you to specify http:// or https://.

**Address**

Allows you to configure the address of the Peer. You can use a DNS name or an IPv4 Address.

**Port**

Allows you to specify the port number. Note that the port number specified is used to notify Cluster Peers of updated job information. Port 631 is recommended, as it is required in each PDH deployment.
17.9. Proxy Configuration

The Proxy Tab allows you to configure HTTP Proxy settings.

Enable HTTP Proxy allows you to enable or disable the use of an HTTP Proxy.

**Proxy Address**

Specify the DNS name or IPv4 address of your proxy server.

**Proxy Port**

Specify the port number that should be used to communicate with the proxy.

**User Name**

The login/username to use when authenticating against the proxy server.

If your proxy does not require Authentication parameters, you can enter any values here and they will be ignored. PDH supports Basic Authentication and NTLM Authentication. For NTLM Authentication, the User Name usually includes a Domain followed by a User ID, as in domain\userID. (Note the single backslash.)

**Password**

The password to use when authenticating against the proxy server.

The Re-enter Password field helps guard against typing errors. You must enter the same value here as in the Password field.
18. Advanced Email Print Workflow Configuration

The PrinterOn Server has been designed to provide email based printing capabilities as part of an overall Enterprise printing platform. PrinterOn recognizes that deployment and configurations within an organization may vary significantly and developed a solution that is flexible and adaptable to your specific requirements.

In addition, the PrinterOn Server has been designed to be as unobtrusive as possible allowing for a deployment that requires minimal changes to your existing installation. This document will outline a number of deployment options to allow you to select a deployment that best suits your needs.

18.1. Email Security

The PrinterOn server only performs the basic validation of the email address and domain. It is typically the responsibility of the upstream email server and configured SPAM software to ensure the validity of the incoming email addresses prior to being delivered to the PrinterOn Server.

The PrinterOn Server integration for email printing is one where the Enterprise Server simply acts as a mail client much like Outlook or any other mail client. Like these clients, they assume the mail server is providing a level of security prior to delivering the messages. This approach allows the PrinterOn Server to be flexible while leveraging existing SPAM or virus investments.

18.2. Recommended Message Routing Configurations

The PrinterOn Server monitors a single mailbox to receive and process email print requests. To facilitate receiving email print requests different options are available depending on the number of printers supported within your installation.

The simplest deployment option is to create a mailbox on your existing mail server to receive print email print requests. In this deployment scenario, the PrinterOn server will act as a simple mail client and monitor for new email messages in the mailbox.
The following diagram illustrates a more complex but recommended deployment and configuration for supporting email printing within your organization. The goal of this deployment approach is to isolate email printing and the PrinterOn server from your corporate mail server.

A mail server, such as the free Windows based hMailserver (www.hmailserver.com) may be installed directly on the PrinterOn server. This mail server will be dedicated for receiving and processing all email print requests. All email print messages will be routed directly to this mail server to be processed by the server. If your organization uses Microsoft Exchange, you may consider configuring an Internal Relay Domain to direct messages to a subdomain such as print.company.com.

18.3. Mailbox creation

To allow seamless emailing printing, the PrinterOn server establishes a connection to the internal mail server using standard connection protocols including (IMAP, MAPI, EWS and Notes Domino). With this type of integration the PrinterOn server will use one (1) mailbox on the mail server to scan for new email print jobs to be printed. If multiple printers will be enabled for email printing, only one mailbox on the mail server will be scanned for new mail. This essentially means we need to configure a way for all the emails for all printers to appear in the one mailbox without changing the addressed ‘printer name’ in the ‘TO’ field of the email header. Depending on the specific environment, the mailbox configuration can be done in several ways. The PrinterOn server can support Microsoft Exchange ActiveSync environments with mail forwarding or distribution groups, and can also support aliases on a single mailbox within a non-ActiveSync environment.

18.3.1. Email Domain Configuration

When configuring your service to support email printing, how users identify the print location is important. In addition to the end-user’s experience it may be helpful to segregate email print jobs from other email traffic within your network. By segregating email traffic additional flexibility is available in how and where your email print jobs are processed.

PrinterOn recommends that you configure a subdomain within your existing domain structure to support email printing. For example, if your company domain is www.companyxyz.com an appropriate email domain would be @print.companyxyz.com. By adding the @print.companyxyz.com subdomain for printing you also have the option of deploying a separate email server dedicated to email printing.

For example, your primary corporate email may be managed by a server for all messages routed to @companyxyz.com. You may then install a dedicated mail server (possibly a low-cost or free alternative such as hMailserver (http://hmailserver.com) on the PrintAnywhere server itself.

Mail received at the @print.companyxyz.com subdomain may be routed to this mail server for handling only email print jobs. This approach also aligns with the use of email server catchalls as emails received by the mail server should be intended for email printing.
18.3.2. **Mailbox Alias’ – non-ActiveSync Environments only**

When supporting a small number of printers, the simplest configuration option is to associate multiple email addresses with a single mailbox on your mail server. This option involves the least amount of configuration for the mail server administrator.

PrinterOn provides two email addresses for every PrinterOn enabled printer. The first is a 12-digit numeric email address such as 300234123432@company.com. The other is a configurable alpha-numeric address such as boardroom-printer@company.com. The numeric address is guaranteed to be unique and will never change throughout the lifespan of the printer listing in the PrinterOn database. The alpha-numeric address is configurable through PrinterOn’s administration tools and may be modified in the future.

When configuring a small number of printers you may retrieve the address from PrinterOn’s web administration site and add these as optional addresses for your email print mailbox. Users may then submit print jobs to these address and all emails will be routed to the common mailbox.

**Adding Aliases to a printer mailbox**

![Example from Exchange 2010]

**NOTE:** When using this configuration with Microsoft Exchange, it is necessary to hide the mailbox from the Exchange Address lists (found on the General tab of the Mailbox Properties).

If the mailbox remains available in the Address List, Outlook will try to auto-send to the default address that may not be the user’s intended printer. Users can add the printer addresses to their personal contacts for frequent use.
18.3.3. Distribution Groups/Lists – all Environments

If you are enabling email printing and also using Microsoft’s ActiveSync to enable mobile devices to connect to your Exchange server, the email alias deployment option described above may not meet all your requirements. Microsoft’s ActiveSync does not support the same capabilities when connecting with some iOS and Android devices. In these cases all emails will be delivered to the default email address configured for the mailbox as opposed to the address entered by the user. The “Hide from Exchange Address lists” option is ignored.

This mailbox configuration is also supported for non-ActiveSync environments.

Using Exchange’s Distribution Groups:
1. Create one main mobile print mailbox
   a. This can be named anything, for example printeronmailbox@mycompany.com
2. Ensure this mailbox is completely created. This is done by logging in to the mailbox at least once using the Outlook client or OWA access.
3. For each printer email address, create a ‘mail’ Distribution Group in the Exchange server
4. Each Distribution Alias should reflect the printer name as created at PrinterOn.com
   a. For example, boardroom-printer@company.com

5. Once the group is created, modify the Distribution Group properties
6. Go to the Members tab and click Add
   a. Select the main mobile print mailbox that was created in step 1
When this is done, messages are copied to the main print mailbox and the original recipient and sender information remain unchanged.

18.3.4. Mail forwarding rules – all Environments

If you are enabling email printing and also using Microsoft’s ActiveSync to enable mobile devices to connect to your Exchange server, the email alias deployment option described above may not meet all your requirements. Microsoft’s ActiveSync does not support the same capabilities when connecting with some iOS and Android devices. In these cases all emails will be delivered to the default email address configured for the mailbox as opposed to the address entered by the user. The “Hide from Exchange Address lists” option is ignored.

This mailbox configuration is also supported for non-ActiveSync environments.

Using Exchange’s Automatically Forward option:

1. Create individual user mailboxes for each printer and one for a main mobile print mailbox
   a. This main mobile print mailbox can be named anything, for example
      printeronmailbox@mycompany.com
2. Ensure each mailbox in Exchange is completely created. This is done by logging in to the mailbox at least once using a service like Outlook
3. For each mailbox, on the Exchange server, access the mailbox’s “Delivery Options” and enable the "Automatically Forward" option
18.3.5. Email Printing Deployment Configuration – ActiveSync Environment

If you are enabling email printing and also using Microsoft’s ActiveSync to enable mobile devices to connect to your Exchange server, the email alias deployment option described above may not meet all your requirements. Microsoft’s ActiveSync does not support the same email alias capabilities when connecting with some iOS and Android devices. In these cases all emails will be delivered to the default email addressed configured for the mailbox as opposed to the addressed entered by the user.
To support this deployment, PrinterOn has come up with 2 solutions. One involves creating individual Exchange mailboxes for each print device, one involves creating Distribution Groups.

There is currently no specific solution for the ActiveSync issue (as it is an MS issue) but we have provided the customer with 2 workaround solutions.

Using Exchange's Automatically Forward option:

1. Create individual email mailboxes for each printer and one for a main mobile print mailbox
2. Ensure each mailbox on Exchange is completely created. This is done by logging into the mailbox using a service like Outlook.
3. For each mailbox, on the Exchange server, access the mailbox's "Delivery Options" and enable the "Automatically Forward" option
   a. In the Select Recipients dialog box select the central PrinterOn mailbox created earlier.
   b. Select the option to delete the messages after forwarding.

When this is done, messages are copied to the main print mailbox and the original recipient and sender information is preserved.

See the last section of the following KB for more details.
http://support.microsoft.com/kb/281926

Using Exchange's Distribution Groups:

1. Create one main mobile print mailbox
   a. This can be named anything
2. Ensure this mailbox is completely created. This is done by logging into the mailbox using a service like Outlook
3. For each printer email address, on the Exchange server, create a Distribution Group
4. Each Distribution Alias should reflect the printer name as created at printeron.com
5. Once the group is created, modify the Distribution Group properties
6. Go to the Members tab and click Add
   a. Select the main mobile print mailbox that was created in step 1

When this is done, messages are copied to the main print mailbox and the original recipient and sender information is preserved.
18.4. Catch-All Configuration

Email Catchalls are an important part of PrinterOn email printing solution. The PrinterOn email plugin monitors a single mail folder for incoming messages. By leveraging the mail server’s catchall capabilities users may simply forward emails to the mail server using the printer’s name in the email address. The catchall directs all unknown emails to the mailbox monitored by the PrinterOn server.

Configuring an email server’s catchall feature varies from server to server. Below are some links to assist in getting starting.

18.4.1. Exchange 2010 Catchall

The following Microsoft Knowledge Base article how to configure an Exchange 2010 to capture all email for a particular domain:


18.4.2. hMailServer Catchall

The hMailServer (http://www.hmailserver.com) provides a simple configuration to support catchalls. To configure catchalls with the hMailServer review the following steps.

NOTE: You must configure the PrinterOn Server email print mailbox prior to performing these steps.

1. Launch the hMailServer administrator interface
2. Select “Domains” and then the domain configured for PrintAnywhere email printing.
3. Select the “Advanced” tab.
4. In the “Catchall address” section enter the email address and domain of the mailbox previously created to receive print quests.
5. Click Save.
18.4.3. Lotus Domino Catchall

The Lotus Domino server provides a simple configuration to support catchall. It involves leveraging the 'Group' feature.

Creating a Group in the Domino world is simple. It involves launching the Domino Server Administrator application and creating a new Group Document in the Domino Directory. During the creation process, you can specify the registered users to be added to the group. You may also defer the addition of users to a later time. There is no limit to the number of Domino user accounts that you can attach to a group.

The steps are as follows:

- Make sure that you have Editor or Author access with the necessary privileges ['GroupCreator'] required for creating a new Group Document in the IBM Lotus Domino Directory.
- From the Domino Administrator or Web Administrator, click the 'People & Groups' tab.
- Select Domino Directories, and then select Groups - Add Group.

Fill out the following fields on the Basics tab by assigning values for (see image below):
  - Group Name – A descriptive name
  - Group Type – Setting the group type to 'Mail Only' will allow the group to function as a mailing list
  - Mail Domain – The Domino domain to be associated with the group’s mail address
  - Internet Address – Email address for the mail group
  - Members – Users who will receive the emails when they have been addressed to this mail group
NOTE:

The email address used for the 'Internet Address' will be the printer's email address as defined on the PrinterOn.com PrintSpot; each printer will need to have a mail account created. The mailbox to be monitored by the PrinterOn Enterprise Server needs to be added as a 'Member' of the mailing group.
19. Service Monitoring Recommendations

Many administrators and service providers leverage centralized notification and monitoring tools. PrinterOn’s own Public Cloud services leverage monitoring tools such as Nagios which is configured to monitor key metrics for a variety of systems and provide notifications to IT support based on configured thresholds and service metrics.

The following information is provided as a reference only; each implementation and service design inherits certain custom characteristics. The following should be used as a guideline for your own monitoring service and should be adapted to your specific needs.

In the tables below we will describe certain thresholds that may be used to initiate an automated notification to support staff. The values provided do NOT always indicate a problem or fault, they are sometimes indicative of possible future problems or may simply indicate that the server status or logs should be reviewed manually.

<table>
<thead>
<tr>
<th>Service</th>
<th>Monitoring Metric</th>
<th>Thresholds and Action</th>
<th>Frequency Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PrintAnywhere Status Server</td>
<td>Memory</td>
<td>&gt; 100MB Allocated&lt;br&gt;Clear PrintAnywhere JobRecords Folder&lt;br&gt;Restart Service</td>
<td>Check 5 min interval Memory consistent across 2 intervals</td>
</tr>
<tr>
<td></td>
<td>CPU</td>
<td>&gt; 50% utilization&lt;br&gt;Restart Service</td>
<td>Check 5 min interval Memory consistent across 2 intervals</td>
</tr>
<tr>
<td>Process Failure</td>
<td></td>
<td>Allow Auto-restart up to 2 times&lt;br&gt;Subsequent failures require service cleanup and log review</td>
<td></td>
</tr>
</tbody>
</table>

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<thead>
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<th>Service</th>
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<th>Frequency Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PrintAnywhere Processing Server</td>
<td>Memory</td>
<td>&gt; 250MB Allocated&lt;br&gt;Clear PrintAnywhereStorage Folder&lt;br&gt;Restart Service&lt;br&gt;Restart Server</td>
<td>Check 5 min interval Memory consistent across 2 intervals</td>
</tr>
<tr>
<td></td>
<td>CPU</td>
<td>&gt; 50% utilization&lt;br&gt;Restart Service&lt;br&gt;Clear PrintWhere Spool Directory&lt;br&gt;Restart Server</td>
<td>Check 5 min interval Consistent CPU usage across 2 checkpoints CPU spikes for up to 4 minutes generally accepted</td>
</tr>
</tbody>
</table>
| Process Failure | Allow Auto-restart up to 1 time  
The Processing Server contains complex server management tools to attempt to self-heal the print subsystem.  
If the Processing Server cannot “fix” the Print Subsystem it will shut itself off. After auto-shutoff review logs for re-registration notifications  
Restart Server and re-install PrintWhere |

<table>
<thead>
<tr>
<th>Service</th>
<th>Monitoring Metric</th>
<th>Thresholds and Action</th>
<th>Frequency Recommendation</th>
</tr>
</thead>
</table>
| PrintAnywhere PasPort Server | Memory | > 100MB Allocated  
Restart Service  
Restart Server | Check 5 min interval  
Memory consistent across 2 intervals |
| | CPU | > 50% utilization  
Restart Service  
Restart Server | Check 5 min interval  
Consistent CPU usage across 2 checkpoints  
CPU spikes for up to 4 minutes generally accepted |
| | | > 5 messages pending in the managed mailbox inbox  
Restart Service  
Clear Monitored Mailbox of messages. | |
| Process Failure | Allow Auto-restart up to 1 time  
After auto-shutoff review logs for re-registration notifications |

<table>
<thead>
<tr>
<th>Service</th>
<th>Monitoring Metric</th>
<th>Thresholds and Action</th>
<th>Frequency Recommendation</th>
</tr>
</thead>
</table>
| CPS Tomcat | Memory | > 200MB Allocated  
Restart Service | Check 5 min interval  
Memory consistent across 2 intervals |
| | CPU | > 50% utilization  
Restart Service | Check 5 min interval  
Memory consistent across 2 intervals |
| Process Failure | Allow Auto-restart up to 2 times  
Subsequent failures require service cleanup and log review |
<table>
<thead>
<tr>
<th>Service</th>
<th>Monitoring Metric</th>
<th>Thresholds and Action</th>
<th>Frequency Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWCRoute.exe</td>
<td>Memory</td>
<td>&gt; 250MB Allocated&lt;br&gt;Restart Processing Server Service&lt;br&gt;Clear PrintWhere Spool Directory&lt;br&gt;Restart Sever</td>
<td>Check 5 min interval&lt;br&gt;Memory consistent across 2 intervals</td>
</tr>
<tr>
<td></td>
<td>CPU</td>
<td>&gt; 50% utilization&lt;br&gt;Restart Service</td>
<td>Check 5 min interval&lt;br&gt;Memory consistent across 2 intervals</td>
</tr>
<tr>
<td>Windows Print Spooler</td>
<td>Memory</td>
<td>&gt; 768MB Allocated&lt;br&gt;Restart Service&lt;br&gt;Restart Server</td>
<td>Check 5 min interval&lt;br&gt;Memory consistent across 2 intervals</td>
</tr>
<tr>
<td></td>
<td>CPU</td>
<td>&gt; 50% utilization&lt;br&gt;Restart Service</td>
<td>Check 5 min interval&lt;br&gt;Memory consistent across 2 intervals</td>
</tr>
<tr>
<td></td>
<td>Process Failure</td>
<td>Allow Auto-restart up to 2 times&lt;br&gt;Subsequent failures require service cleanup and log review</td>
<td></td>
</tr>
</tbody>
</table>
20. Troubleshooting and Problem Identification

To address an unexpected issue with the Enterprise server, determining where and what component is at fault is a critical part of the process. The following is intended to provide assistance with this process. The process will involve investigating major components or the communication between them.

20.1. High Level Overview

A few key symptoms and information may assist in reducing the problem space significantly. The Enterprise system may be divided into 3 primary divisions:

- Submission & Job Reception
  - Includes API clients, CPS and PrintAnywhere Status Server
- Job Processing/Printing
  - Includes primarily the PrintAnywhere server
    - May be impacted by access to end point printers or services
- Job Delivery
  - Includes PDS, PDH and HotSpot printers.
    - Impacts submission from the PrintAnywhere Server

In addition to these 3 items the overall configuration may be the cause of an issue. That overall configuration and the information that binds the systems together will also be discussed below.

20.2. Key Troubleshooting Data Points

Two key data points may be used to help assist and rapidly divide the problem space into smaller pieces. These do not always identify the root cause of the issue but do aid with a rapid assessment of where to review.

20.2.1. Job Reference ID:

Once a job has been accepted by the PrintAnywhere Server, a Job Reference ID is attached to the job, specifically the Status Server subcomponent. The presence or absence of a Job Reference ID provides a major clue where to start investigating issues.

- If a Job Reference ID has NOT been returned, it is highly likely that:
  - The job did not get submitted to the Status Server
  - The problem resides in CPS
  - The problem resides in the data submitted with the request including:
    - Missing required parameters
    - Missing or corrupt data file
    - Invalid API format
  - Troubleshooting should focus on:
    - CPS & Tomcat logs
    - Status Server logs
• If a Job Reference ID is returned, it is highly likely that:
  o The job was received by the PrintAnywhere Server
  o The problem resides within the PrintAnywhere Server
  o The problems may include:
    ▪ Invalid printer information
    ▪ Communication issues amongst PrintAnywhere components
    ▪ Issues printing specific documents
  o Troubleshooting should focus on:
    ▪ Status Server and Processing Server logs

20.2.2. User Messages

Once a job has been accepted by the service, specifically PrintAnywhere, all messages will be returned with a code prefix that helps identify the component that reported the message.

For Example:

  o PAS0108 – Returned from PrintAnywhere
  o PWC0100 – Returned from PrintWhere

This information can be used to quickly isolate whether the issue was caused by PrintAnywhere, PrintWhere communication or other components.

Generally the User Message contains the message ID from the component that originated the message. For example, an issue may originate in communication between PrintWhere and the destination device, or in PrintAnywhere when handling a document, and the prefix will help isolate this information.

  o Example: PAS0002: The job has been processed.
  o Example: PWC4510: Unable to contact the printer.

<table>
<thead>
<tr>
<th>Message Prefix</th>
<th>Base Reporting Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAS</td>
<td>PrintAnywhere</td>
</tr>
<tr>
<td>PWC</td>
<td>PrintWhere</td>
</tr>
<tr>
<td>PTS</td>
<td>Configuration &amp; Licensing</td>
</tr>
<tr>
<td>FCS</td>
<td>Print Delivery Station</td>
</tr>
</tbody>
</table>
21. Printer Configuration Profiles

This section will outline the Printer Configuration Profiles process that will help facilitate the creation and/or modification of large number of PrinterOn printers locally.

If you need to create or modify the configuration settings for a large number of printers, then printer configuration profiles are an easy way to do it. A Printer Configuration Profile contains a number of settings, including:

- Printer Name
- Printer Description/Location Settings
- Print Driver Settings
- Printer Release Settings
- Printer Integration Options
- Printer Capabilities
- Print Workflows Options

An CSV is used to create or modify multiple printers and to define the new properties of printers. In addition to the properties explicitly specified in the CSV file, the administrator may use a Template Printer to include common printer properties. The properties from the Template Printer will be applied to the new printer followed by those property values explicitly specified in the CSV file.

21.1. Steps for creating/editing large printer data sets

To create or edit large number of printer settings:

- Select Printers
- Click Printer Configuration Profiles Icon

- Use the browse button and submit the input CSV Data Set file.
- Hit **Upload**

![Import Printers](image)

- Wait for the transaction to be processed. If there are no validation errors, the printers will be added or modified accordingly.
- Verify the results by checking one or more printer settings.

### 21.2. CSV Format Overview

The basic rules to keep in mind while entering values into the CSV file are as follows:

- A CSV file provides fields/columns separated by commas.
- Each CSV line/record is a set of comma separated fields terminated by newlines.
- Newlines are either a line feed (0x0A) or carriage return line feed pair (0x0D 0x0A)
- Fields with embedded commas are enclosed by double-quotes.
  - Ex: 1223,“This is a, comma”, abcd
  - In the above example, “This is a, comma” is a single field entry.
- Fields with line breaks must also be enclosed by double-quotes.

#### 21.2.1. CSV Data Types

Upon submission of the CSV file, the PrinterOn Service will be responsible for validation of all the values supplied in the CSV file. Please note that the data included in the CSV file may or may not be required.

The table below provides a classification of the different types of data that could be included in the CSV file.

<table>
<thead>
<tr>
<th>Data Type</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required (R)</td>
<td>Required data MUST be supplied for each entry in the CSV file. If a required field is not supplied, the CVS entry will not be processed and an appropriate error will be provided in the final Portal Creation report.</td>
</tr>
</tbody>
</table>
### Template Alternative (TA)

Data that is considered “Template Alternative” is data that may optionally be supplied in the CSV file.

If the “Template Alternative” field information is not included in the CSV file, PrinterOn Server will use the ‘Printer Template Reference’ information supplied to retrieve the appropriate data to populate in the new printers.

If a value supplied for a “Template Alternative” field cannot be validated or is in an incorrect syntax, the transaction will fail.

### Optional (O)

Data that is considered “Optional” can be omitted from the CSV file.

If the value is not supplied for an “Optional”, field is not supplied, the new Printer value will be left blank or a PrinterOn default will be selected.

For existing listings, if you do not wish change one or more settings, please leave the field as blank.

#### 21.2.2. CSV Headers

The first row of the CSV file is reserved for specifying CSV field header information. The header field allows you to enter the data values in any order. Please make sure the printer configuration information data entered matches the order as indicated in the first row for headers.
21.3. CSV Data Values

The section below will list each of the configuration entry. The information will be presented vertically to make it easier to read the data. Each entry is a distinct comma separated data point. Data which is not supplied or is option may be left blank, in these cases the CSV file contains multiple commas with no data between.

<table>
<thead>
<tr>
<th>CSV Header</th>
<th>CSV Field Description</th>
<th>Required/Optional/TA</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>createPds</td>
<td>Create/Attach PDS Instance (0/1)</td>
<td>Required</td>
<td>Indicates whether to create a new PDS or to associate the printer with an existing PDS.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Supported Values : {0}</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 = Do no create a new instance use an existing PDS. Specify the Serial Number to associate with the printer; otherwise, the PDS associated with the Template Printer will be used.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See section regarding PDS association for rules and details.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Note: In the future, this field will allow you to create new PDS instances on the fly.</em></td>
</tr>
<tr>
<td>pdsSoftwareType</td>
<td>PDS Software Type</td>
<td>Required</td>
<td>0 = Use Template Printer information</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 = PDS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Supported Values: {0, 1}</td>
</tr>
<tr>
<td>serialNumber</td>
<td>PDS Serial Number</td>
<td>Required, only if associating to an existing PDS.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X4531-TY76-UU78</td>
</tr>
<tr>
<td>createPrinter</td>
<td>Create or Modify Printers (0/1)</td>
<td>Required</td>
<td>1 indicates create a printer</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 indicates update a printer</td>
</tr>
<tr>
<td>templatePrinterId</td>
<td>Template Printer ID</td>
<td>Required</td>
<td>If ‘createPrinter’ value is ‘0’, this field represents the ID of the printer listing to be updated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>300112333222 (printerOn ID)</td>
</tr>
<tr>
<td>printerName</td>
<td>Printer Name</td>
<td>Required</td>
<td>Example: MyPrinter1.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
<td>Default Value</td>
<td>Notes</td>
</tr>
<tr>
<td>-----------------------</td>
<td>----------------------------------</td>
<td>---------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>gpsLatitude</td>
<td>GPS Latitude</td>
<td>Optional</td>
<td>32.122232</td>
</tr>
<tr>
<td>gpsLongitude</td>
<td>GPS Longitude</td>
<td>Optional</td>
<td>-12.322232</td>
</tr>
<tr>
<td>printerManufacturer</td>
<td>Printer Manufacturer</td>
<td>Template Alternative</td>
<td>Set the value to 6565 to configure a Local Un-Managed Printer Model. Leave Blank if using the Template Alternative value See Appendix A</td>
</tr>
<tr>
<td>printerModel</td>
<td>Printer Model</td>
<td>Template Alternative</td>
<td>Specify the exact Local Print Driver Name if Printer Manufacturer is set to 6565. Otherwise Leave Blank See Appendix A</td>
</tr>
<tr>
<td>printerDisplayManufacturer</td>
<td>Printer Display Manufacturer</td>
<td>Template Alternative</td>
<td>Leave Blank See Appendix A</td>
</tr>
<tr>
<td>printerDisplayModel</td>
<td>Printer Display Model</td>
<td>Template Alternative</td>
<td>Printer Name 123</td>
</tr>
<tr>
<td>printerDescription</td>
<td>Printer Descriptive Label/Location Information</td>
<td>Template Alternative</td>
<td>Front Office Later</td>
</tr>
<tr>
<td>departmentName</td>
<td>Printer Department Name</td>
<td>Template Alternative</td>
<td>Front Office Note: Value will be use to specify the printer Department for Enterprise printers. Should generally b left empty for Enterprise printers.</td>
</tr>
<tr>
<td>printWhereEnable</td>
<td>PrintWhere Printing Enabled</td>
<td>Template Alternative</td>
<td>1(enabled) or 0(disabled)</td>
</tr>
<tr>
<td>docApiEnable</td>
<td>DocAPI Printing Enabled</td>
<td>Template Alternative</td>
<td>1(enabled) or 0(disabled)</td>
</tr>
<tr>
<td>emailPrintingEnable</td>
<td>Email Printing Enabled</td>
<td>Template Alternative</td>
<td>1(enabled) or 0(disabled)</td>
</tr>
<tr>
<td>ippLan</td>
<td>IPP Lan URL</td>
<td>Template Alternative</td>
<td>172.1.1.1</td>
</tr>
<tr>
<td>ippLanOnly</td>
<td>Use IPP LAN URL only</td>
<td>Template Alternative</td>
<td>1 (YES) 0 (NO)</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
<td>Template Alternative</td>
<td>Value</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------------------------------------------------</td>
<td>---------------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>ippUrl</td>
<td>IPP URL (PDH URL)</td>
<td>Template Alternative</td>
<td>172.1.1.1</td>
</tr>
<tr>
<td>streetAddress</td>
<td>Street Address</td>
<td>Template Alternative</td>
<td>221 McIntyre Dr</td>
</tr>
<tr>
<td>city</td>
<td>City</td>
<td>Template Alternative</td>
<td>Kitchener</td>
</tr>
<tr>
<td>state</td>
<td>State/Province (PrinterOn ID)</td>
<td>Template Alternative</td>
<td>ON (refers to Ontario) See Appendix B</td>
</tr>
<tr>
<td>country</td>
<td>Country (PrinterOn ID)</td>
<td>Template Alternative</td>
<td>CA (refers to Canada) See Appendix B</td>
</tr>
<tr>
<td>postalCode</td>
<td>Postal Code</td>
<td>Template Alternative</td>
<td>N3A4M2</td>
</tr>
<tr>
<td>pdsOutputType</td>
<td>PDS Output Type</td>
<td>Template Alternative</td>
<td>USB, Network, Parallel Port</td>
</tr>
<tr>
<td>pdsAddress</td>
<td>PDS Address</td>
<td>Template Alternative</td>
<td>Specify only for Network. The default value for network is “tcp://127.0.0.1”</td>
</tr>
<tr>
<td>printerModelName</td>
<td>Printer Model Name</td>
<td>Template Alternative</td>
<td>OEM Model Name/MDL data</td>
</tr>
<tr>
<td>printManagementService</td>
<td>Print Management Service</td>
<td>Template Alternative</td>
<td>See Appendix C for supported values</td>
</tr>
<tr>
<td>additionalIntegrationInfo</td>
<td>Additional Integration info</td>
<td>Template Alternative</td>
<td>NOTE: This option is only available when the Print Management Service is set to: {27, 55). See Appendix C for supported values</td>
</tr>
<tr>
<td>enableAdvanceIntegration</td>
<td>Enabled Advance Integration Features</td>
<td>Template Alternative</td>
<td>1 (YES) 0 (NO)</td>
</tr>
<tr>
<td>injectPjlHeader</td>
<td>Inject a PJL Header container if none exist</td>
<td>Template Alternative</td>
<td>1 (YES) 0 (NO)</td>
</tr>
</tbody>
</table>

### 21.3.1. Sample CSV Data File

**Basic Structure – Header Information**

createPds,pdsSoftwareType,serialNumber,templatePrinterId,createPrinter,printerName,gpsLatitude,gpsLongitude,printerManufacturer,printerModel,printerDisplayManufacturer,printerDisplayModel,printerDescription,departmentName,printWhereEnable,docApiEnable,emailPrintingEnable,ippLan,ippLanOnly,ippUrl,streetAddress,city,state,country,postalCode,pdsOutputType,pdsAddress,printerModelName,printManagementService,additionalIntegrationInfo,enableAdvanceIntegration,injectPjlHeader

**Example 1: Printer Creation with Existing PDS**

0,0,XXED-DDFU-SSZZ,900005228231,1,bulk-imported-printer-1,,,,,,,,Bulk Imported Printer 1,..................
Example 2: Update Printer Settings including 3rd Party Integration Options

0,0,XXED-DFFU-SSZZ,90000521111,0,bulk-imported-printer-23,,,,,,,,,Bulk Changed Name
Here,,,,,,,,,,,,,,,,55,56,1,1,

21.4. CSV Data Types and IDs

21.4.1. Printer Model and Manufacturer IDs

Within the PrinterOn system, PrinterOn uses internal IDs to represent specific printer models and manufacturers. These are numeric IDs used internally to locate additional information such as a specific printer driver or manufacturer name. When supplied PrinterOn will use the IDs to locate the appropriate printer driver and manufacturer to associate with a newly created Printing Portal.

The following tables are provided as a reference only.

**Manufacturer Identifiers**

<table>
<thead>
<tr>
<th>Manufacturer Name</th>
<th>PrinterOn ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>**Un-Managed Local Printer Driver **</td>
<td>6565</td>
</tr>
</tbody>
</table>

**Printer Identifiers**

The following is a small subset of printer IDs for reference only.

<table>
<thead>
<tr>
<th>Device Name</th>
<th>PrinterOn ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>For Future Use</td>
<td></td>
</tr>
</tbody>
</table>

21.4.2. Country and State/Province IDs

Within the PrinterOn system, PrinterOn uses the ISO standard 2 letter abbreviations for country and state/provinces to represent specific countries as well as states and provinces. When supplied PrinterOn will associate the newly created printer with the supplied country and region ID.

**NOTE:** These values are Template Alternative values and are not required.

**NOTE:** Not all states and provinces are represented within the State/Province Identifier table. PrinterOn Only supports specifying state/province for the US and Canada. In other regions the state/province identifier should match the country code. For example, German would be set as country=DE, state/province=DE.
### Country Identifiers

<table>
<thead>
<tr>
<th>Manufacturer Name</th>
<th>PrinterOn ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>US</td>
</tr>
<tr>
<td>Canada</td>
<td>CA</td>
</tr>
<tr>
<td>Great Britain</td>
<td>GB</td>
</tr>
<tr>
<td>Germany</td>
<td>DE</td>
</tr>
<tr>
<td>Great Britain</td>
<td>GB</td>
</tr>
<tr>
<td>Mexico</td>
<td>MX</td>
</tr>
<tr>
<td>Italy</td>
<td>IT</td>
</tr>
<tr>
<td>Spain</td>
<td>ES</td>
</tr>
<tr>
<td>Etc</td>
<td>etc</td>
</tr>
</tbody>
</table>

### State/Province Identifiers

The following is a small subset of state/province identifiers for *reference* only.

<table>
<thead>
<tr>
<th>Device Name</th>
<th>PrinterOn ID</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Canada</strong></td>
<td></td>
</tr>
<tr>
<td>Alberta</td>
<td>AB</td>
</tr>
<tr>
<td>British Columbia</td>
<td>BC</td>
</tr>
<tr>
<td>Ontario</td>
<td>ON</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>NB</td>
</tr>
</tbody>
</table>
## 21.4.3. Print Management Service IDs

Used to configure the type of third party integration service to apply to the printer. Leave blank if none is required, otherwise specify the numeric ID.

<table>
<thead>
<tr>
<th>Third Party Integration</th>
<th>Third Party Integration ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
</tr>
<tr>
<td>PCounter</td>
<td>21</td>
</tr>
<tr>
<td>Equitrac</td>
<td>27</td>
</tr>
<tr>
<td>ITC Systems</td>
<td>30</td>
</tr>
<tr>
<td>OCS – Print Station</td>
<td>32</td>
</tr>
<tr>
<td>VendPrint</td>
<td>38</td>
</tr>
<tr>
<td>iTeam – Print Quest</td>
<td>41</td>
</tr>
<tr>
<td>Communitiq Systems Inc</td>
<td>42</td>
</tr>
<tr>
<td>St. Joseph Communications</td>
<td>43</td>
</tr>
<tr>
<td>Konica-Minolta SecurePrint</td>
<td>45</td>
</tr>
<tr>
<td>Ricoh StreamLine NX Mode</td>
<td>46</td>
</tr>
<tr>
<td>Ricoh ELPNX Flex Release</td>
<td>47</td>
</tr>
<tr>
<td>FujiXerox Mode 1</td>
<td>48</td>
</tr>
<tr>
<td>Ricoh User Codes</td>
<td>50</td>
</tr>
<tr>
<td>Xerox Standard Accounting</td>
<td>53</td>
</tr>
<tr>
<td>SecuPrint</td>
<td>55</td>
</tr>
<tr>
<td>Samsung Secure Release</td>
<td>56</td>
</tr>
</tbody>
</table>
21.4.4. **Additional Integration Info IDs**

In some cases, multiple integrations may be used in conjunction with each other. One of the following values may be set additionally, if the Print Management Service is set to:

- Equitrac – 27
- SecuPrint - 55

<table>
<thead>
<tr>
<th>Third Party Integration</th>
<th>Third Party Integration ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>FujiXerox Mode 1</td>
<td>48</td>
</tr>
<tr>
<td>Xerox Standard Accounting</td>
<td>53</td>
</tr>
<tr>
<td>Samsung Secure Release</td>
<td>56</td>
</tr>
</tbody>
</table>
22. Server Component Glossary and Overview

22.1. Central Print Service

Central Print Services (CPS) is the primary entry point for all requests submitted to the PrinterOn Enterprise Server. CPS is responsible for providing a centralized interface for all Enterprise printing including end-user web printing, mobile application printing as well as for 3rd parties who develop integrations to the Enterprise Server for custom print services. CPS is a Java Servlet based solution that is hosted by Apache Tomcat as its Servlet Container. CPS implements PrinterOn Document and Directory Search APIs to facilitate submission of print jobs.

In addition to providing print service access, CPS also provides a web-based administrative console allowing administrators to manage their service and control how jobs are received and submitted to the underlying print subsystem.

22.2. PrintAnywhere

The PrintAnywhere Server provides job management and print processing of documents as part of PrinterOn's print services. The PrintAnywhere Server comprises a number of software services that facilitate the receiving and printing of documents and the delivery of the processed documents to a PrinterOn enabled printer.

The following will describe these components and their role in the print server.

22.2.1. Web Plugins

PrintAnywhere's web plugins are the interfaces by which PrinterOn's Central Print Services (CPS) solution delivers print jobs to the PrintAnywhere server for processing. These plugins are required when installing PrinterOn's CPS solution. These plugins are available, as part of the installation, as either a Java Servlet or ISAPI based interface.

22.2.2. PrintAnywhere Status Server

The PrintAnywhere Status Server is responsible for managing all incoming and in-process print requests. All print jobs received via email, the web or from mobile apps are first received by the Status Server. The Status Server is responsible for delivering requests to available Processing Servers and managing the jobs while they are being processed. Status Servers may be clustered to provide greater redundancy in a multi-server environment.
22.2.3. PrintAnywhere Processing Server

The PrintAnywhere Processing Server is responsible for converting a document received by the server into a printer usable format. The Processing Server integrates with applications installed on the server and the PrinterOn PrintWhere Driver to render documents. Multiple Processing Servers may be installed as part of a PrintAnywhere "cluster" to increase capacity and redundancy.

22.3. PrinterOn PrintWhere Driver Server Edition

The PrinterOn PrintWhere driver is installed as part of the Processing Server. It is a key component of the overall printing process and is integrated into the Processing Server as part of a PrintAnywhere deployment. The PrintWhere Driver is managed by the Processing Server using an internal API system. The Processing Server encapsulates communication between PrintAnywhere and the PrintWhere driver using a subcomponent of PrintAnywhere named the PrintWhere Bridge (PWCBridge.exe).

22.4. Print Delivery Gateway

The Print Delivery Gateway Software serves as a protocol gateway to PrinterOn Enterprise printers allowing jobs to be submitted using a number of different methods, native iOS, IPP, Google Cloud Print including Window’s print protocols. It acts as a bridge that supports multiple print workflows allowing IT Administrators to streamline the deployment, management and administration of Enterprise printers while simultaneously retaining the native printing experience unique to each platform.

The PDG Software allows the print users to submit jobs from a number of well-adopted print workflows to the PrinterOn managed Enterprise printers.

- IPP and Native iOS (iOS, iPhone, iPad)
  o Powered by PDG iOS Connector
- Google Cloud Print (Smartphones, Tablets, NetBooks, Chrome Browser etc…)
  o Powered by PDG GCP Connector
- Standard Windows Printer Queues (Print Servers Integration)
  o Powered by PDG PQMS Connector

22.5. Print Delivery Station

Print Delivery Station’s (PDS) role is to provide a bridge between the PrinterOn delivery infrastructure and the physical printer or print queue. PDS communication is based on the IPP specification and provides extensions to the protocol for advanced functionality such as encryption. The simplest description of PDS is an IPP print server that supports various connection protocols to printers or print queues.

- IPP is based on HTTP and uses custom HTTP headers for metadata delivery and a structured binary body to deliver print data.
- PDS implements an IPP listener to receive print jobs from PrintWhere.
- Print jobs received by PDS can be delivered to their destination automatically or manually based on the PrinterOn configuration.
- The process of receiving jobs and delivering them to their destination remains the same regardless of whether PDS is configured to hold for user input prior to delivering to their destination.

22.6. Print Delivery Hub

For Enterprise deployments delivering print jobs to printers installed in disparate networks, delivery of print jobs from a PrinterOn Enterprise Server or the PrinterOn PrintWhere universal driver directly to the PDSs may not be possible. In other cases, leveraging a simple and rapid deployment of print devices, such as Ricoh HotSpot printers, will benefit from the centralized installation of PDH. In this arrangement, print jobs are delivered to the PDH setup and the PDS servers communicate with PDH to detect and download the print jobs.

In such a scenario, the PDH service must be accessible over the network to the PDS servers. The PDH service can be installed in a central network operating center. Access to the PDH will be configured such that the PrintAnywhere Server, desktop PrintWhere clients and PDS deployments can access the PDH server. This configuration generally minimizes network changes, as the PDH is the only service requiring incoming network traffic access.
23. Adding Printers for Hybrid Deployments

If you wish to add more devices or additional print management queues, you can do this based on license availability.

From the homepage of the PrinterOn web administration you can confirm how many printer listings are currently added and the total available.

When your license is created default printer listings will be created in the PrinterOn Directory. Most default settings should apply, but it is recommended that you confirm settings.

Log in to the PrinterOn web administration at www.printeron.com/administrators

- Navigate to the Printers tab
- Click “Add a Printer to your PrintSpot” (Note: if this option is not displayed, please review the licenses information)
23.1. Printer Identification and Driver Settings

Click on the Required Settings link beneath the printer listing. Confirm the following details on this page:

Print driver

- Verify that your device supports this print driver. Choose an alternate driver if the one pre-selected is not supported. If your specific printer model is not available, please choose an appropriate universal driver from your manufacturer. When sending to a managed pull queue, ensure all devices within the pull group support the driver.

Model

- This should reflect the printer model when it's an individual device.

Descriptive Printer Label

- This should reflect a user-friendly description of where and what physical printer this listing represents.

PrinterOn Name

- This is a unique value that identifies each printer within your PrinterOn administration and also across all PrinterOn sites and services. The value used here will be used to make up the email address of the printer when enabling email printing. PrinterOn recommends utilizing your internal naming convention when available.

23.2. Secure Release and Print Management Integration Settings

Click on the Optional Settings link beneath the printer listing. Confirm the following details on this page:

1. Privacy Release Codes
   a. If utilizing release codes for secure release, enable all check boxes and set to Required. Release codes are supported by some 3rd party integrations. Please contact PrinterOn Support for details.

2. Releasing print jobs should match the expected behavior
   a. If jobs are to be held for secure release through a PrinterOn agent, ensure Using a PrinterOn Solution or HotSpot Printer is chosen.

3. If your Mobile Print Server will need to support double byte characters, ensure this is set to UTF-8 and you have selected Override Encoding Specification.
23.3. User Input Settings

Click on the Optional Settings link beneath the printer listing. Confirm the following details on this page:

1. User Identifier
   a. If authentication will be enabled, ensure this is set to Required
2. Duplexing
3. Paper sizes

NOTE: The duplex option selected as default here will be applied to all email print jobs. This is the only submission method that does not provide an option to change this setting.

23.4. Print Delivery Station Settings

This is a vital configuration item that directs job data to your instance of Print Delivery Station. This value must reflect the location of your PDS software, and best practice is to include a port number.

For deployments utilizing just a PDS, select the Allow users to print directly to Print Delivery Station and Print Directly to PDS Only. This ensures your job data remains within your network.

Scroll back to the top of this page and click the Payment & Authorization tab.

1. Confirm the following details on this page:
   a. Requires Authentication to Print
      i. If authentication will be enabled, ensure this check box is enabled. It will ensure that users are prompted for credentials when scanning the QR code via the PrinterOn mobile apps.

NOTE: If supporting PrintWhere submissions, this DNS name or IP address must be accessible by the users submitting print jobs. If it is not these print jobs will fail. If you have a concern opening access from users to this server, consider deploying a Print Delivery Hub (PDH).
23.5. Printer Location Settings

Set your printer’s GPS co-ordinates by clicking **Set Address** from the right hand Options below the ‘Printers’ menu.

NOTE: Each printer listing within the PrinterOn directory can have unique addresses and GPS co-ordinates set. This is managed via the Set Address option.
23.6. Update Service URL

The Service URL shown within the Site Summary box on the homepage of PrinterOn’s web administration is an important factor in supporting API submissions. This includes mobile apps, native iOS, IPP, Google Cloud Print and any custom submission applications you may have created based on PrinterOn APIs.

1. Log in to the PrinterOn web administration at www.printeron.com/administrators
2. Navigate to the Service Details tab
3. Scroll to the bottom of the page and enter the IP or DNS address for the server hosting your PrinterOn software
   a. Ensure you enter /cps after the address
4. Save changes

NOTE: If you’re working in a multi-server environment, this value should reflect the address users

23.7. Configuring MAC Address Information for Samsung Printers

When integrating with Samsung embedded agents or software, it is necessary to configure the MAC address of the printer.

1. Log in to the PrinterOn web administration at www.printeron.com/administrators
2. Navigate to the Printers tab
3. Select your printer and then select Required Settings
4. Scroll to the External ID field
5. Enter the MAC address of the printer
6. Save changes

The Descriptive Label is used as the printer name to be presented to the user in PrintSpot Print Portals. This should be used to assist in identifying the printer and/or its physical location to the end-user. (eg. "Color Business Center Printer").

External ID
01-23-45-67-89-ab
24. Additional Notes and Howto Information

24.1. Resetting the Configuration Manager Password

In some cases, it might be necessary to reset your Configuration Manager administrator password. To ensure the process is secure, you must have your SiteAuth available that is unique information and provided as part of your server installation.

The SiteAuth is part of the server license file. If you have misplaced your license file you can retrieve it by logging on to the PrinterOn Administrator Website and requesting a new file under the Software section of the website.

To reset your password:

- Browse [https://ipaddress:8057](https://ipaddress:8057) (eg. [https://127.0.0.1:8057](https://127.0.0.1:8057))
- Click “Forgot Password?”
- Enter your Site Auth when prompted
- Click Reset Password

Your password is now reset to default. Note: You will need to provide the SiteAuth again to set your password.
24.2. How to Configure Microsoft Office Permissions

Some users have reported errors printing to some Microsoft Office files when deploying PrinterOn Server along with Microsoft Office. The issue is caused by a change in Windows permissions. The change impacts automation to some installations of Windows Server 2012 and Server 2008.

Please Note: PrinterOn is working toward a solution that will remove the need to perform these manual steps in an upcoming service release.

Resolution – Modify the DCOM configuration for Office applications

1. From the command prompt type “mmc -32”
2. Expand Component Services select DCOM Config
3. Perform the following step for each of the following entries
   - NOTE: the version information below is correct, even if a later version is installed.
   - NOTE: not all options will be available for all installations.
   a. Microsoft Word 97 -2003 Document
   b. Microsoft Excel 97 -2003 Document
   c. Microsoft PowerPoint 97 -2003 Document
   d. Microsoft PowerPoint Slide
   e. Microsoft Visio 97 -2003 Document (if installed)
4. Right-click and select Properties
5. Select the Identity tab
6. Select “This User”
7. NOTE: Enter the same dedicated Local Administrator user, created to run the PrinterOn Services
8. Click Apply
9. Restart the Processing Server service.
24.3. Reconfigure Server for Newly Installed Applications

The application settings allow you to review and manage the applications available to the server. During the installation process, the PrintAnywhere Server can scan your server to determine which applications have been installed and whether they can be used by the server to process print jobs.

If you have installed applications, such as LibreOffice or Microsoft Office, after installing the PrinterOn Server, you must update refresh the server application configuration to use the newly installed applications.

To set the refresh the application settings:

- Select **Components** in the Configuration Manager
- Next to PrintAnywhere Server select **Configure**
- Select the **Applications** tab
- Scroll to the bottom of the page
- Under Select **Auto Configure Settings** to update the configuration.
- Select **Home** then **Services**
- Restart the **PrintAnywhere** Service
24.4. Configuring Region Specific TXT Encoding

NOTE: These options only apply if you have Word or LibreOffice installed.

If users of your service regularly print simple text files to your server, depending on your location, you may be able to improve the output of the TXT files with some additional configuration.

- By default the PrinterOn Server will process TXT files with a simple ASCII encoding.
- The server will attempt to determine the encoding of the TXT files submitted to select the best encoding automatically, such as UTF-8, ASCII or UTF-16

In some cases the encoding of a TXT file cannot be determined automatically. The PrinterOn Server provides the option to set a default encoding, if the automatic process cannot determine the encoding.

This option should generally be used if:

- Users regularly print TXT files
- Users submit TXT files other than ASCII or UTF-8, such as Korean or Japanese
- The type of TXT file submitted is consistent across users.

NOTE: Setting the default encoding to a value such as Korean or Chinese, will allow jobs to be processed when received in that encoding, but it may other encodings may generate unexpected output.

To set the Default Encoding:

- Select **Components** in the Configuration Manager
- Next to PrintAnywhere Server select **Configure**
- Select the **Formats** tab
- Under Format Options change the Default Text File Encoding to the desired value
- Select **Home** then **Services**
- Restart the **PrintAnywhere** Service
24.5. Disable Strict SSL Verification for CPS

In some cases, certain networks do not allow communication to the PrinterOn Directory, due to services such as Man in the Middle proxies. In those cases, there may be a need to disable SSL verification. There is no configuration option to apply this setting in the user interface. Follow the steps below:

- Browse to folder: C:\Program Files\PrinterOn Corporation\Apache Tomcat\Conf
- Open CPS_Config.xml
- Locate the following XML:
  - <enableSSLVerify>true</enableSSLVerify>
- Modify the value to
  - <enableSSLVerify>false</enableSSLVerify>
- Restart Tomcat

24.6. How to Enable LDAP/AD for PrintWhere

Log in to your PrinterOn account.

Select the Printer Icon and choose the printer you’d like to enable authentication for.

Select the Payment & Authorization tab. In the “Authorizing Users” section, select Redirect to authorize user, track pages or bill customer and User Authorize URL.

Enter the pathname of the server which hosts the PrinterOn CPS Admin application. It will be similar to servername-or-ipaddress/cps/aaaLogin.jsp. E.g., 192.168.1.20/cps/aaaLogin.jsp.

Save your settings and test the driver.
24.7. How to enable PrintAnywhere to receive print jobs from CPS residing on an alternate server

This section will outline the changes necessary to Apache Tomcat in order to accept print requests delivered from CPS when CPS is on a different server.

1. From the server hosting PrinterOn, stop the CPS Apache Tomcat service
2. Navigate to C:\Program Files (x86)\PrinterOn Corporation\Apache Tomcat\Conf
3. Edit the server.xml file in Notepad
4. Locate this section:
   `<Context path="/PasServlet">
   <Valve className="org.apache.catalina.valves.RemoteAddrValve"
   allow="127.0.0.1" />
   </Context>

5. Change the "allow=" value to reflect the IP address of the server hosting CPS
   a. For example: allow="172.16.39.52" OR allow="172.16.39.52"
   b. If enabling email printing, or you have multiple CPS servers, you can enter multiple IPs by separating with a pipe character (|). For example: allow="127.0.0.1|172.16.39.52"

6. Save changes to server.xml
7. Start the Apache Tomcat service
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