

# Fax Agent

## Installation and Setup Guide

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## Overview

Fax Agent enables you to process incoming faxes directly into Perceptive Content by converting them into documents. You can configure Fax Agent to send incoming faxes directly into Perceptive Content and optionally add them to a workflow. You can also send outbound faxes that can include documents and an optional cover page. Fax Agent enables you to manipulate faxed documents in the same manner as any other documents. Using Fax Agent simplifies your business processes, eliminates the need for printing hard copies, and makes scanning faxes into the system obsolete.

Fax Agent requires a Brooktrout TR1034 PCI or TR1034 PCIe fax board. Fax Agent supports an unlimited number of inbound fax lines depending on your board model and the number of channels it supports. Fax Agent supports inbound fax transmission through analog, digital, direct inward dialing (DID), and T-1 lines.

You can send faxes to workflow queues based on the DID number, Caller ID number, or telephone line linked to a channel on the fax board. The workflow queue routing options that are available depend on how your phone lines are configured. After processing your faxes, the system converts them to documents that you can view, print, annotate, and email.

## Secure environment recommendations

The following recommendations are intended to help secure the installation environment and apply to all product installations. These recommendations should be followed as a minimum requirement for all Hyland products. The policies of your organization may have additional or more robust requirements that should also be followed.

Hyland products may have additional recommendations described in the specific documentation for that product. In some cases, the recommendations may change or may only apply when using certain Hyland products together in a solution.

- Use TLS for all HTTP traffic, including private network segments. TLS ciphers have to be maintained to stay current over time.
- Use Secure FTP instead of standard FTP for all FTP traffic.
- End-to-end encryption is recommended for all data in transport, independent of a network segment. Note that some regulatory compliance requirements may require end-to-end encryption.
- Change all default passwords before activation of the production system. This applies to Hyland products as well as third-party products used by Hyland products (such as a database server).
- Authorization rules should be configured and tested before activation of the production system. This applies to Hyland products as well as to file system folders and database user accounts.
- Use database encryption for all sensitive data persisted in the database.
- Use file system encryption for all sensitive data and content persisted on the file system.
- Enable encryption when available as part of a subsystem configuration. For example, since ODBC provides the capability to use strong encryption for data, it is recommended to have that option enabled.

## Side-channel risks

Consider the following to mitigate side-channel risks:

- Ensure the latest application and operating system patches are applied.
- Ensure the latest firmware patches are applied for any hardware on-premises.

## Fax Agent installation preparation

We recommend that you install Fax Agent on a remote, Windows server. When installed remotely, Fax Agent communicates with the Perceptive Content Server computer through TCP/IP. Insert the Brooktrout TR1034 board into an available PCI or PCIe slot on the Windows server, depending on the board.

Consult the installation guide included with your fax board for detailed instructions. Ignore any attempts by Windows to find a driver for your new hardware. If your server uses Windows Server 2003, disable the fax board in the Device Manager, reboot the server computer, and then re-enable the fax board.

If installing Fax Agent locally, you must install and configure a Perceptive Content datasource. For more information, see the [Perceptive Content Database Installation and Setup Guide](#).

## Install Fax Agent

Complete the following procedures to install Fax Agent.

### Download the Fax Agent files

To obtain Perceptive product installation files, contact the Hyland Software Technical Support group. For a list of Technical Support phone numbers, go to [hyland.com/pswtscontact](http://hyland.com/pswtscontact).

### Verify remote Perceptive Content shared directory access

When the installer accesses a remote location it accesses the location in both the current user and SYSTEM context. You must verify both users have access to the shared directory. You can use the **net use** command to create sessions in the current context. You can also create a session in the SYSTEM context by using Microsoft's **PsExec** command to run the **net use** command in the SYSTEM context.

**Note** The **net use** command only adds the session for the current context. **PsExec** allows you to run the command in the SYSTEM context, which then adds the session in the SYSTEM context.

### Run the Fax Agent installation wizard

Complete the following steps to run the Fax Agent installation wizard.

1. Double-click the EXE file you downloaded.
2. On the **Welcome to the Installation Wizard for ImageNow Fax Agent** page, click **Next**.
3. On the **License Agreement** page, review the License Agreement, scroll to the end of the agreement, select **I accept the terms in the license agreement**, and then click **Next**.
4. On the **Custom Setup** page, perform the following sub-steps.
  1. Click **Barcode Processing** and ensure **This feature will be installed on local hard drive** is enabled.

**Important** Fax Agent does not function properly without enabling Barcode Processing, whether or not you use barcodes to index faxes.
  2. In the **Install to** section, accept the default install location or click **Change** and select a different directory.

3. Click **Next**.
5. On the **Destination Folder** page, you may change locations for **ImageNow Fax Agent** and the **ImageNow Fax Agent shared files** using the following substeps.
  1. To change the location for the **ImageNow Fax Agent**, click **Browse**. In the **Change Current Destination Folder** page, browse to the destination folder where you want to install **ImageNow Fax Agent** and then click **OK**.
  2. To change the location for **ImageNow Fax Agent shared files**, click **Browse**. In the **Change Current Destination Folder** page, browse to the destination folder where you want to install the **ImageNow Fax Agent shared files** and then click **OK**.
6. On the **Destination Folder** page, click **Next**.
7. On the **Installation Location** page, complete one of the following steps.
  1. If you are installing Fax Agent on the Perceptive Content Server computer, select **Local installation**.
  2. If you are installing Fax Agent on a different computer in your network, select **Remote installation**.
8. Click **Next**.
9. For **Local installation** perform the following substeps.
  1. On the **Configure Perceptive Content Database** page, configure the Perceptive Content Database settings using the following substeps.
    1. Select the **Database type**.
    2. Specify the **Data Source Name (DSN)**.
    3. Enter the **Username** and **Password** for the **Database credentials**.  
**Note** The username and password fields are populated with a default username and password. If you chose a different username and password during the installation of the database, you must update them here. If the password is encrypted, a warning will appear next to the password field.
    4. Click **Verify** and review the ODBC driver configuration.
  2. On the **Configure Perceptive Content Database** page, click **Next**.
10. For **Remote installation** perform the following substeps.
  1. On the **ImageNow Server Information** page, under **ImageNow Server**, enter the **Server IP** and **Port Number** for the Perceptive Content Server computer.
  2. Under **Additional Configuration**, enter the **Initial instance** name.
  3. Click **Next**.
  4. On the **Token authentication** page, configure the authentication token used for agent token authentication and click **Next**.  
**Note** Selecting **Skip agent authentication token configuration** will leave the agent's authentication.token setting unset.
11. On the **RabbitMQ Configuration** page, configure the settings according to your RabbitMQ instance and click **Next**.
12. In the **Ready to Install the Program** page, click **Install**.
13. In the **Installation Wizard Completed** page, click **Finish**.

## Install Fax Agent unattended

Installing Fax Agent silently is an automatic way to run unattended installations. If you follow the procedures below, you will not install Fax Agent using a standard installation wizard interface. Using this silent installation method, you can do a custom installation or use a combination of default and customized settings.

### Run the unattended installation

1. Set up your argument values to customize the unattended installation. If you do not manually set argument values, then the default values are used during the installation.

**Note** For information on configuring RabbitMQ arguments for unattended installations, see the Perceptive Content Server Installation Guide.

Argument	Description	Default	Example
INSTALLDIR	The default and recommended installation directory is [drive:]\inserver.	[drive:]\inserver	INSTALLDIR=C:\inserver
SHARED_INSTALLDIR	This is the install directory of your common files in an active-active environment.	The value of INSTALLDIR	SHARED_INSTALLDIR=S:\inserver
INF_REMOTED	Specifies whether Fax Agent will be installed on the same machine as Perceptive Content Server.  If set to TRUE, Fax Agent and Perceptive Content Server are installed on different machines.  If set to FALSE, Fax Agent and Perceptive Content Server are installed on the same machine.	FALSE	INF_REMOTED=FALSE
INF_SERVER.IP.ADDRESS	Perceptive Content Server IP address	127.0.0.1	INF_SERVER.IP.ADDRESS=127.0.0.1
INF_SERVER.IP.PORT	Perceptive Content Server port	6000	INF_SERVER.IP.PORT=6000
ODBC.DBMS	Sets the database management system for Perceptive Content. This value should be set to either SQLServer or Oracle.	SQLServer	ODBC.DBMS=Oracle
ODBC.DSN	The ODBC name.	Perceptive Content	ODBC.DSN=\"Perceptive Content\"
ODBC.USER.ID	The ODBC username.	inuser	ODBC.USER.ID=inuser

ODBC.USER.PASSWORD	The ODBC password.		ODBC.USER.PASSWORD=so mepassword
AUTH.TOKEN	Specifies the authentication token used when establishing an agent session.	REMOTE agent installation requires you to set either AUTH.TOKEN, AUTH.TOKEN.ENCRYPTED or SKIP_AGENT_TOKEN_AUTH_VALIDATION.	AUTH.TOKEN="eyJhbGciOiJSUzI1NiIsIm... aRjXefXOFGrZ A"
AUTH.TOKEN.ENCRYPTED	Specifies an encrypted value of token authentication.		AUTH.TOKEN.ENCRYPTED="01d54d4b1a9f8952a5beaa587846eaffda"
SKIP_AGENT_TOKEN_AUTH_VALIDATION			SKIP_AGENT_TOKEN_AUTH_VALIDATION=1

2. Enter the following command in a **Command Prompt** window.

```
FaxAgentSetup.exe /s /V "<argument list>"
```

The following example shows the command with a defined argument list.

```
FaxAgentSetup.exe /s /V"/qb INSTALLDIR=\"C:\inserver\" INF_REMOTED=FALSE  
INF_SERVER.IP.ADDRESS=127.0.0.1 INF_SERVER.IP.PORT=6000"
```

3. Verify your installation.

## Install the Fax Agent license

The following steps explain how to install your license. When you purchase Fax Agent, you receive a license file. Before authenticating the license, you must install the Perceptive Content Server and at least one Perceptive Content Client. Only a user with privileges to manage licenses can complete this task.

1. Copy the license file provided by your Perceptive Software representative to a temporary folder where you can access it with a Perceptive Content Client.
2. On the **Start** menu, point to **All Programs**, point to **Perceptive Content**, and click **Perceptive Content**.
3. In the **Perceptive Content** login dialog box, click **License Manager**.
4. In the **License Management** dialog box, select **Upload licenses** and click **OK**.
5. Browse to the license file from its temporary directory, click **Open**, and then click **OK**.
6. In the **License Generation - Server Information** dialog box, perform the following substeps.
  1. In the **User ID and Password** boxes, type your user name and password.
  2. In the **Server Name or IP Address** box, type the Perceptive Content Server computer host name or IP address.
  3. In the **Port Number** box, type the port number of the Perceptive Content Server computer host.
  4. Click **OK**.
7. In the **License Upload** dialog box, verify that the status of the license is **SUCCESS** and click **Close**.



**Note** For an explanation of why the license upload succeeded or failed, click **Details**.

## Install the Brooktrout drivers

Complete the following steps to install the Brooktrout drivers.

1. On the computer where the fax board and Fax Agent service are installed, open a **Command Prompt** window.
2. Navigate to the `\brooktrout\driver\install` directory within the Fax Agent installation directory.
3. Optional. If upgrading from a Fax Agent version prior to 7.1.3, uninstall the existing driver and reinstall the driver laid down by the installer.
4. Complete one of the following substeps.
  - If you are updating a previous install of the fax board drivers, enter **install -r** to remove the previous installation. When the removal is finished, restart your computer, open a **Command Prompt** window, navigate to the installation directory, and then enter **install**.
  - If you have not previously installed the fax board drivers, enter **install**.
5. For the maximum number of PCI/cPCI hardware modules, press **ENTER**.
6. For the physical buffer size, press **ENTER**.
7. For the application buffer size, press **ENTER**.
8. For the machine ID, press **ENTER**.
9. To perform an initial reset, press **ENTER**.
10. To enable history, press **ENTER**.
11. For configure advanced parameters, press **ENTER**.
12. To start the driver only with devices present, press **ENTER**.
13. For the Boston PCI adjustment, press **ENTER**. The system automatically installs the Plug and Play driver.
14. If the system detects new hardware on your system, it displays the **Found New Hardware Wizard**.
15. Complete the process to install the correct drivers, as defined in the [Complete driver installation](#) section. If no new hardware is detected, continue to the [Change Device Manager settings](#) section.


## Complete driver installation

Complete the following steps to finish the driver installation.

1. In the **Welcome** page, to prevent Windows from searching for software, click **No, not this time** and click **Next**.
2. To install software for the Brooktrout TRxStream Board, click **Install from a list or specific location (Advanced)** and click **Next**.
3. To choose your search and installation options, click **Search for the best driver in these locations**.
4. Click **Include this location in the search** and click **Browse**.
5. Locate the `\brooktrout\driver\pnp` folder in your Fax Agent installation directory and click **Next**.
6. Click **Finish** to close the wizard.

## Change Device Manager settings

Complete the following steps to change the Device Manager settings and update your system drivers. Note that this process detects new hardware.

1. To change the settings in the **Device Manager**, right-click **My Computer** on the **Windows Desktop**, select **Properties**.
2. Click the **Hardware** tab.
3. Click **Device Manager**.
4. Click the **Computer** icon and click **Scan for hardware changes** .
5. Select **Other Devices** and select the PCI device that matches your board.
6. Click the **Driver** tab and click **Update Driver**.
7. In the **Hardware Update** wizard, select **Search** and in **Location**, navigate to the **\\brooktrout\\driver\\pnnp** folder within the Fax Agent installation directory.
8. Select the **trxstream.inf** file, and then click **Install**.

After this installation, the fax board appears as a **Computer Telephony** device called the **Brooktrout TRxStream Board**.

## Create and modify driver configuration files

The Brooktrout Configuration Tool creates the necessary CFG files in the installation directories, so it is essential to run the Configuration Tool before you attempt to modify your configuration files or use Fax Agent for the first time. Complete the following steps to set up your configuration files.

**Note** You may encounter errors if Fax Agent is running while configuration changes are made or applied. Verify that Fax Agent is not running before starting the Brooktrout Configuration Tool to ensure that your configuration settings are applied correctly.

1. Navigate to the **\\brooktrout\\bin** folder within the Fax Agent installation directory and start the **Brooktrout Configuration Tool** by double-clicking **configtool.exe**.
2. In the **Welcome** page, click **Advanced Mode** and click **Yes**.
3. In **Advanced Mode**, in the left pane, expand **Brooktrout** and select **BTCall Parameters (All boards)**.
4. In the right pane, verify the settings for **Country Telephony Parameter File** and **Country**.
5. In **Advanced Mode**, in the left pane, expand **Call Control Parameters** and select **Module 0x#**.
6. In the right pane, click a **Port** tab and verify the settings based on information provided by your telephony provider.
7. In **Advanced Mode**, from the top menu, click **Options**.
8. In **Preferences**, verify the settings and click **OK**.
9. In **Advanced Mode**, click **Save** and click **Apply**.

## Troubleshoot Boston Host Service

Boston Host Service may not start due to various reasons. The following list provides possible common causes for failure and suggested solutions. For more information, see the Dialogic website.

- **Driver not installed or started.** To view driver status details, run the **btver** utility, located in the `[drive:]\brooktrout\bin\` directory. To uninstall and reinstall the Brooktrout drivers, see the [Install the Brooktrout drivers](#) section.
- **No board in server.** To view the boards the driver detects, run the **modinfo** utility, located in the `[drive:]\brooktrout\bin\` directory. If the driver does not detect the board, you may need to re-seat the board, use a different slot, or use a different module number.
- **Correct btcall.cfg and/or firmware files not being used or found.** See the [Create and modify driver configuration files](#) section, and ensure that the preferences reference the correct location for firmware (`\brooktrout\bin`) and CFG files (`\brooktrout\config`).

**Note** You will need to uninstall the existing fax board drivers before proceeding.

## Reinstall the configuration drivers

At this point, you need to download the Brooktrout Fax Diagnostic Tool for your environment and reinstall the configuration files. You must first uninstall the Brooktrout drivers.

1. Open a **Command Prompt** window, navigate to the `\brooktrout\driver\install` directory within the Fax Agent installation directory and enter **install -r**.
2. Restart the computer.
3. Access the Dialogic website.
4. Download the **Dialogic Brooktrout Fax Diagnostic Tool for Windows for SDK 6.7.3 (fdtool)**.

**Note** The fdtool version must match your version of Perceptive Content drivers.

5. In the Diagnostic Tool **config** directory, copy the **btcall.cfg** and **callctrl.cfg** files.
6. In the Fax Agent installation directory, locate the `\brooktrout\config` folder.
7. Paste the **btcall.cfg** and **callctrl.cfg** files into the directory and overwrite the existing files.
8. Complete the steps in the [Create and modify driver configuration files](#) section.

## Modify Fax Agent service initialization settings

Complete the following steps to change the initialization settings for the Fax Agent service.

1. On the computer on which Fax Agent is installed, navigate to the **inserverFax.ini** file within the Perceptive Content shared etc directory `$(IMAGENOWDIR6)\etc`, and open the file with a text editor.
2. In the **[General]** section, complete the following substeps.
  1. Verify that **faximp.directory** is set to the `\fax` folder in the Fax Agent installation directory, unless you want to specify different holding directories for your incoming faxes.
  2. Set **supplied.channels** to the same number of channels supported by your fax board model.
  3. Set **enabled.channels** to the number (in hexadecimal) of inbound channels you are using.

### Notes

- The numbers you provide for the inbound channels must be in hexadecimal. For more information on determining the correct hexadecimal number, see [Appendix C](#).
- You cannot use the same channels for both inbound and outbound faxing. You must decide on the number of inbound channels needed and specify it here. For more information, see details on configuring **[Outbound]** settings later in this section.

4. If you do not want the received fax images deleted after they are processed into the system set **source.objects.delete** to **FALSE**.
  5. If you purchased the barcode add-on module, and you want Fax Agent to recognize barcodes to index documents, set **use.capture** to **FALSE**. When **use.capture** is set to **TRUE**, you direct Fax Agent to use the settings in the **[Capture]** section instead of the settings in the **[Queue]**, **[Serial Number]**, **[Key Mapping]**, and **[Barcode]** sections.
3. If you do not want Fax Agent to recognize barcodes to index documents, in the **[Capture]** section, configure the following settings for capture profiles for faxes.
    1. Modify **capture.priorities.mode** to use the priority you want. For example, **capture.priorities.mode=PCG** sets the priority of the modes as they appear.
      - P = Phone.capture.profile (Fax sender's phone number assigned to a capture profile).
      - C = Channel.capture.profile (Receiving channel assigned to a capture profile).
      - G = General.capture.profile (A capture profile used for all channels).
      - D = DID.capture.profile (Direct Inward Dial (DID) assigned to a capture profile).
    2. For each of the properties **general.capture.profile**, **phone.capture.profile**, **DID.capture.profile**, and **channel.xx.profile**, list the appropriate capture profile.
 

**Note** You create capture profiles in Management Console under Capture. Settings and availability for Caller ID, DID, and channels for capture profiles depend on your phone line configuration, features, and your fax board model.
    3. If you want to treat each page of a fax as a unique document, change **multi.doc.mode** to **TRUE**.
  4. If you purchased the barcode add-on module, and you want Fax Agent to recognize barcodes to index faxes, configure the following settings.
    1. In the **[Queue]** section, configure the following settings if you want to send faxes to a workflow queue.
      1. Set **route.to.queue.enabled** to **TRUE**.
      2. Modify **queue.priorities.mode** to use the priority you want. For example, **queue.priorities.mode=PCG** sets the priority of the modes as they appear.
        - P = Phone.to.queue (Fax sender's phone number assigned to queue).
        - C = Channel.xx.TO (Receiving channel assigned to a queue).
        - G = General.output.queue = Fax Start (A queue used for all channels).
        - D = DID.to.queue (Fax sender's DID assigned to a queue).
      3. For each of the properties **general.output.queue**, **phone.to.queue**, **DID.to.queue**, and **channel.xx.to**, specify the appropriate queue.
 

**Note** You create queues in the Management Console under Workflow. Settings and availability for Caller ID, DID, and channels for routing documents depend on your phone line configuration, features, and your fax board model.
    2. In the **[Serial Number]** section, specify the type of unique ID you want Fax Agent to assign to each fax.

3. In the **[Key Mapping]** section, configure the following settings to assign fax values to document keys (DockKeys) that override your fax header values.
5. Set **Drawer** to use any existing drawer.
6. Modify any of the remaining document key settings to use any of the options described in the **inserverFax.ini** file to fit your needs.
  - In the **[Barcode]** section, set **trigger.on.barcode** to **TRUE**. Enabling this option lets you fax into Perceptive Content a group of pages with or without barcodes and sort the pages by either the individual barcode value or barcode failed in combination with a unique\_ID. Specify the barcodes you want Fax Agent to detect by entering **0** to ignore a barcode or **1** to recognize a barcode.
7. In the **[Logging]** section, specify the level of logging between **0** (no logging) and **6** (logging with the most information). Use minimal logging unless you are debugging an issue.
8. If you installed Fax Agent on a different computer than Perceptive Content Server or you did not use the Windows installer, in the **[Remote]** section, change the following settings.
  1. Set **remoted** to **TRUE**.
  2. For **server.ip.address**, specify the IP address of the Perceptive Content Server.
  3. For **server.ip.port**, specify the port number of the Perceptive Content Server.

**Note** Consult Product Support before you change values for properties **heartbeat.interval**, **socket.login.timeout**, **socket.default.timeout**, **force.server.validation**, or **reconnect.interval**.
9. If you want to enable outbound faxes, in the **[Outbound]** section, set **outbound.fax.enabled** to **TRUE** and change the following settings.
  1. Specify one or more **outbound.enabled.channels** to dedicate to outbound faxes. These channels only process outbound faxes. For example, if you have an eight-channel board, you may want to set up two channels for outbound faxes, leaving six for inbound faxes. If you are sending more outbound faxes than your specified outbound enabled channels, the faxes are simply queued at the outbound channel and processed as the channel becomes available.
 

**Note** The numbers you provide for the outbound channels must be in hexadecimal. For more information on determining the correct hexadecimal number, see Appendix C.
  2. Set **outbound.fax.retries** to the number of times you want to retry sending the outbound fax before identifying the fax as a failed attempt.
  3. Set **outbound.fax.smtp.server.url** to the URL of your email server. Fax Agent uses the SMTP protocol and SMTPS protocol to send outgoing emails.
  4. Set **outbound.fax.smtp.validate.certificates** to **TRUE** if using SMTPS or have set the **outbound.fax.smtp.use.starttls** setting to **TRUE**.
  5. Set **outbound.fax.smtp.use.starttls** to **TRUE** if using STARTTLS on the SMTP server.
  6. Set **outbound.fax.smtp.username** to a valid username if your SMTP server has basic authentication enabled.
  7. Set **outbound.fax.smtp.password** to a valid password if your SMTP server has basic authentication enabled.
  8. Set **outbound.fax.coverpage.enabled** to **TRUE** if you have a cover page to send with the transmission or **FALSE** if not.
  9. For **outbound.fax.coverpage**, type the name of a TIF image file you want to use as a cover page for all outbound faxes if you enable the cover page. This fax must reside on the file system

on the Fax Agent server, for example, in the Fax Agent installation directory you would type **\\fax\_Cover.tif**.

10. Supply offsets as x, y coordinates to set the location of text (using Arial 12 point font) placed on the cover page for the attention, page count, and comments section through **outbound.fax.coverpage.attention.offset**, **outbound.fax.coverpage.pagecount.offset**, and **outbound.fax.coverpage.comments.offset**.
11. Set **outbound.fax.prefix.number** with any prefix you need to set before dialing out.
10. If you installed Fax Agent behind a firewall or on a different subnetwork than Perceptive Content Server, under **[Message Queuing]**, change the following settings.
  1. Set **mq.agent.ip.address.override** to **TRUE**.
  2. Set **mq.agent.ip.address.override** to the appropriate IP address for Fax Agent to connect to Message Queuing Agent.
11. Save and close the file, then restart the Fax Agent service using **Windows Computer Management** by completing the following substeps.
  1. On the Windows Desktop, right-click the **My Computer** shortcut and select **Manage**.
  2. In the **Computer Management** dialog box, click **Services and Applications**.
  3. Click **Services**.
  4. In the right pane, locate and select the service titled **Fax Agent**.
  5. In the upper left-hand corner of the right pane, click **Start**.

## Set up Fax Agent to fax out while running remotely

If you install Fax Agent remotely, you must configure the [Fax Out] settings in the inow.ini file. If you do not configure this option, the Send to Fax option in Fax Agent is dimmed and unavailable. Complete the following steps to configure Fax Agent to fax out while running remotely.

1. On the Perceptive Content Server computer, navigate to the Perceptive Content shared etc directory **\$(IMAGENOWDIR6)\etc** folder and open the **inow.ini** file in a text editor.
2. Under **[Fax Out]**, set **fax.out.integration** to **TRUE**.
3. Save and close the file and restart the Perceptive Content Server using **Windows Computer Management** by completing the following substeps.
  1. On the Windows Desktop, right-click the **My Computer** shortcut and select **Manage**.
  2. In the **Computer Management** dialog box, click **Services and Applications**.
  3. Click **Services**.
  4. In the right pane, locate and select the service titled **Perceptive Content Server**.
  5. In the upper left-hand corner of the right pane, click **Restart**.

## Verify the installation

Verify that your installation is working correctly by sending some test faxes to Fax Agent and ensuring the faxes appear in the Explorer or workflow queue. You must restart the Fax Agent service if you configured options in the inserverFax.ini file and restart the Perceptive Content Server computer if you configured options in the inow.ini file.

## Fax Agent configuration

### Configure agent token authentication

Configure Fax Agent to use token based agent authentication by completing the following steps.

**Note** Only configure agent token authentication if the Fax Agent is installed remotely.

1. On the Perceptive Content Server machine, generate an authentication token for Fax Agent by running the following command.

```
intool --cmd create-authentication-token --lictype Fax Agent --file FaxAgent.txt
```

2. On the Fax Agent machine, navigate to the **etc** directory in the Fax Agent installation directory.
3. Using a text editor, open the **inserverFax.ini** file.
4. In the **[Remote]** section, set the **authentication.token** setting to the contents of the **FaxAgent.txt**, as shown in the following example.

```
authentication.token=[authentication token]
```

5. Save and close the **inserverFax.ini** file.

## Appendix A: About Fax Agent log files

A number of log files and logging levels can assist you in troubleshooting Fax Agent. Perceptive Content writes the log files for Fax Agent to Perceptive Content local log directory

**\$(IMAGENOWLOCALDIR6)\log**. Reference the following log files when debugging issues:

- **inserverFax\_<instance name>\_<date>.log** is created by Fax Agent. This log is controlled by **inserverFax.ini**.
- **fax.agent\_<instance name>\_<date>.log** is created by Perceptive Content for each Fax Agent connecting with it. This log is controlled by **inserver.ini**.
- **fax.agent\_<heartbeat>\_<instance name>\_<date>.log**
- **fax.agent\_upload\_<instance name>\_<date>.log**
- **fax.agent\_<r\_0\_<instance name>\_<date>.log**
- **InowBfvDebug\_<date>.log** tracks the Brooktrout API. This log is controlled by **inserverFax.ini**.
- Perceptive Content Server creates user logs for each user.

When Fax Agent encounters failed faxes from the fax outbound and channel## directories, these files are often orphaned. When a fax that is sent either outbound or inbound is not successful, the failed fax nodes are moved to the \fax\failed directory within the Fax Agent installation directory. This occurs so that the inserverFax service does not require a restart. Using the failed directory also prevents the failed fax nodes from being brought into the system.

## Appendix B: Server Configuration Files

This section outlines settings you configure in INI files associated with Fax Agent installation and setup. They are listed in alphabetical order for quick reference.

## inow.ini

If you install Fax Agent remotely, you must configure the [Fax Out] settings in the inow.ini file. If you do not configure this option, the Send to Fax option in Fax Agent will be dimmed and unavailable.

Group	Setting	Options	Description
[Fax Out]	fax.out.integration	TRUE FALSE	Specifies whether outbound faxing is enabled.  TRUE = Outbound faxing is enabled. FALSE = Outbound faxing is disabled. The default is FALSE.

## inserverFax.ini

The following table provides definitions and setting options for the inserverFax.ini configuration file. The table displays the INI settings under group headings in brackets, for example, [General], in the order the groups appear in the INI file. Each setting offers two or more options, which the table defines below along with a description of each setting and its options. Unless otherwise noted, the default setting is blank.

If you do not use barcodes to index documents, use the [Capture] settings to define queue and fax information that was previously defined in the [Queue], [Serial Number], and [Key Mapping] sections.

Group	Setting	Options	Description
[General]	faximp.directory	Valid directory location	Specifies the holding directory for the received image file and creates subdirectories for each enabled channel.  Example: C:\inserverfax
	supplied.channels	Any integer greater than 0	Specifies the number of channels supported by the fax board.  The default is 1.



Group	Setting	Options	Description
	enabled.channels	integers	<p>Specifies the channels dedicated to inbound faxing. This setting uses an integer that enables or disables the channels for the specified fax board's channels; every bit in this integer represents one channel.</p> <p>1 = enable 0 = disable</p> <p>Examples:</p> <p>0000000C means enable channel 2 and 3. 00000003 means enable channel 0 and 1. FFFFFFFF means enable all channels. 0000000F means enable channels 0, 1, 2, and 3d. 3FFFFFFFFF means 46 channels (Two TR1034 boards). 7FFFFFFF means 23 channels. 00 means no channel enabled. 000F means 4 channels (leading 0's can be omitted) The default is 00 (no enabled channels).</p> <p><b>Notes</b></p> <ul style="list-style-type: none"> <li>You cannot use the same channels specified in outbound.enabled.channels.</li> <li>The value you provide for the inbound channels must be in hexadecimal. For more information on determining the correct hexadecimal number, see Appendix C.</li> </ul>
	poll.interval	Any integer greater than 0	<p>Specifies how often, in seconds, Fax Agent searches the directory.</p> <p>The default is 1.</p> <p><b>Note</b> Do not change this value without first consulting Perceptive Software Product Support.</p>

Group	Setting	Options	Description
	source.objects.delete	TRUE FALSE	Specifies whether Fax Agent deletes the fax images from the temporary directory after they are processed by the system.  TRUE = Delete the temporary files. FALSE = Retain the temporary files.  The default is TRUE.  <b>Note</b> Do not change this value without first consulting Perceptive Software Product Support.
	use.capture	TRUE FALSE	Specifies whether to use Fax Agent capture profiles. If set to TRUE, Fax Agent uses the settings in the Capture section and ignores the settings in the Queue, Key Mapping, and Barcode sections.  The default is FALSE.
[Capture]	capture.priorities.mode	PCG DCG PG CG DG	Specifies the order of priority for capture profiles.  P = Fax sender's phone number determines capture profile.  C = Channel determines capture profile.  D = Direct Inward Dial (DID) determines capture profile.  G = The general.capture.profile setting determines the capture profile.
	general.capture.profile	Any valid capture profile name	Specifies the default capture profile to use when you specify TRUE for use.capture.
	phone.capture.profile	<FaxSenderPhone>: Profilename1^ Profilename2^	Specifies the capture profile for the fax sender's phone number. You can have multiple strings up to 1024 characters.  For example: 9135551111:Triage Profile^9135552121:ER Profile
	did.capture.profile	<FaxSenderDID>: Profilename1^	Specifies the capture profile for the specified fax sender's DID. You can have multiple strings up to total length of 1024 characters.  For example: 9135551111:Triage Profile^9135552121:ER Profile
	channel.<nn>.profile	Any valid profile name	Specifies capture profiles for the different receiving channels, where <nn> is the two-digit channel. Use an integer from 0 to 10.  <b>Note</b> You must start with Channel.00.profile.

Group	Setting	Options	Description
	multi.doc.mode	TRUE FALSE	<p>Specifies whether Fax Agent captures a batch of faxed documents as one document or many documents.</p> <p>TRUE = Fax Agent creates a unique document from each fax page.</p> <p>FALSE = Fax Agent creates one document from the entire fax.</p> <p>The default is FALSE.</p>
[Queue]	route.to.queue.enabled	TRUE FALSE	<p>Specifies whether Fax Agent routes faxed documents to a workflow queue.</p> <p>TRUE = Fax Agent routes documents to a queue.</p> <p>FALSE = Fax Agent does not route documents to a queue.</p> <p>The default is FALSE.</p>
	queue.priorities.mode	PCG DCG PG CG DG	<p>Specifies the order of priority for routing faxes to queues.</p> <p>P = Fax sender's phone number determines queue.</p> <p>C = Channel determines queue.</p> <p>D = Direct Inward Dial (DID) determines queue.</p> <p>G = The general.output.queue setting determines the queue.</p>
	general.output.queue	Any valid queue name	Specifies the default queue to use when you specify TRUE for route.to.queue.enabled.
	phone.to.queue	<FaxSenderPhone>: Queuename1^	<p>Specifies the queue for the fax sender's phone number. You can have multiple strings up to 1024 characters.</p> <p>For example: 9135551111:Triage Queue^9135552121:ER Queue</p>
	did.to.queue	<FaxSenderDID>:Q ueuename1^	<p>Specifies the queue for the specified fax sender's DID. You can have multiple strings up to total length of 1024 characters.</p> <p>For example: 9135551111:Triage Queue^9135552121:ER Queue</p>
	channel.<nn>.to	Any valid queue name	<p>Specifies destination queues for the different receiving channels, where &lt;nn&gt; is the two-digit channel. Use an integer from 1 to 10.</p> <p><b>Note</b> You must start with Channel.00.to.</p>

Group	Setting	Options	Description
[Serial Number]	serial.number.format	;%08d ;%8d ;<> :[]	Specifies the type of serial number Fax Agent uses to assign a unique ID to each fax.  ;%08d = 8 bits and retain the leading zero. ;%8d = 8 bits or less and omit the leading zero. ;<> = variable section :[] = fixed section
	serial.number.startvalue	Any single-digit positive integer	Specifies the start value of the serial number.
[Key Mapping]	drawer folder tab f3 f4 f5	<text> DEFAULT faxsender.phone# faxsender.DID <text> UNIQUEID DATE/TIME UNDEFINED SERIALNUMBER BARCODE	Specifies the document key Fax Agent uses for the drawer.  <text> = A literal string of text up to 15 characters. DEFAULT = the default drawer specified in Perceptive Content. The default drawer is DEFAULT. Specifies the index key Fax Agent uses for the folder, tab, and fields 3 through 5. faxsender.phone# = fax sender's phone number. faxsender.DID = Fax sender's DID. <text> = A literal string of text up to 15 characters. UNIQUEID = An ID generated by Perceptive Content. DATE/TIME = The date and time Perceptive Content stores the fax. UNDEFINED = Key mapping is not used. SERIALNUMBER = Fax Agent generates one serial number for each fax, based on serial.number.format section. BARCODE = The instance of the barcode is used as the folder key. For example, the fifth barcode found is BARCODE5.

Group	Setting	Options	Description
	doc.type	Valid doc type DEFAULT	Specifies the document key Fax Agent uses for the doc type.  <text> = A valid doc type.  DEFAULT = The default doc type identified in Perceptive Content.  The default document type is DEFAULT.
	multi.doc.mode	TRUE FALSE	Specifies whether each page of the fax is a unique document in the systemmag.  TRUE = Each page of the fax is a unique document (depending on key setup).  FALSE = The entire fax is a single document (depending on key setup).  The default is FALSE.
[Barcode]	trigger.on.barcode	TRUE FALSE	Specifies whether to use the same index keys for all pages after a unique barcode. This setting overrides multi.doc.mode.  TRUE = Ignore the multi.doc.mode value and divide each fax session into small batches separated by barcodes.  FALSE = Use the multi.doc.mode value for key mapping.  The default is FALSE.
	bar_c39	1 0	Specifies which barcode type Fax Agent recognizes.  1 = Fax Agent recognizes the barcode.  0 = Fax Agent ignores the barcode.
	bar_2of5		
	bar_c128		
	bar_cb		
	bar_upc_a		
	bar_ean		
	bar_93		
	bar_upc_e		
	bar_ean_suppl		

Group	Setting	Options	Description
[Logging]	debug.level.file	0 through 6	<p>Specifies the level Fax Agent uses to log errors for troubleshooting.</p> <p>Typically, you want to set minimal logging unless you are debugging an issue. If you increase the logging, verify that you set the logging level back down after you finish debugging. Failure to do so can greatly affect performance and hard disk space.</p> <p>0 = Logging is off.</p> <p>1 through 6 = Logging is on. The higher the number, the more verbose logging. For example, 1 offers minimal logging, whereas 6 offers logging that contains the most information.</p> <p>The default is 0.</p>
	socket.level.file	0 through 6	<p>Specifies whether to log communication between Perceptive Content Server and Fax Agent.</p> <p>0 = Logging is off.</p> <p>1 through 6 = Logging is on. The higher the number, the more verbose the logging. For example, 1 offers minimal logging, whereas 6 offers logging that contains the most information.</p> <p>The default is 0.</p>
	brooktrout.debug.output	TRUE FALSE	<p>Specifies whether Fax Agent logs errors for troubleshooting Brooktrout.</p> <p>TRUE = Logging is on.</p> <p>FALSE = Logging is off.</p> <p>The default is FALSE.</p>
	outbound.success.log.level	0 through 6	<p>Specifies whether Fax Agent logs fax success errors for outbound faxes separately instead of as a fixed logging level.</p> <p>0 = Logging is off.</p> <p>1 through 6 = Logging is on. The higher the number, the more verbose the logging. For example, 1 offers minimal logging, whereas 6 offers logging that contains the most information.</p> <p>The default is 3.</p>

Group	Setting	Options	Description
	outbound.failure.log.level	0 through 6	<p>Specifies whether Fax Agent logs fax failure errors for outbound faxes separately instead of as a fixed logging level.</p> <p>0 = Logging is off.</p> <p>1 through 6 = Logging is on. The higher the number, the more verbose the logging. For example, 1 offers minimal logging, whereas 6 offers logging that contains the most information.</p> <p>The default is 0.</p>
[Remote]	remoted	TRUE FALSE	<p>Specifies whether you installed Fax Agent on a different computer than Perceptive Content Server.</p> <p>TRUE = Fax Agent and Perceptive Content Server are installed on different machines.</p> <p>FALSE = Fax Agent and Perceptive Content Server are on the same machine.</p> <p>The default is FALSE.</p>
	heartbeat.interval	Any positive integer	<p>Specifies how often, in seconds, Fax Agent verifies its connection to Perceptive Content Server.</p> <p><b>Note</b> Do not change this value without first consulting Perceptive Software Product Support.</p>
	socket.login.timeout	Any positive integer	<p>Specifies how many seconds Fax Agent waits for successful login before terminating the connection.</p> <p>The default is 60.</p> <p><b>Note</b> Do not change this value without first consulting Perceptive Software Product Support.</p>
	socket.default.timeout	Any positive integer	<p>Specifies how many seconds Fax Agent waits before quitting its attempt to upload faxes to the Perceptive Content Server</p> <p>The default is 60.</p> <p><b>Note</b> Do not change this value without first consulting Perceptive Software Product Support.</p>
	server.ip.address	IP_address	Specifies the IP address of the Perceptive Content Server.
	server.ip.port	Any existing port number	<p>If remoted is enabled, this setting specifies the port number of the Perceptive Content Server.</p> <p>The default is 0.</p>

Group	Setting	Options	Description
	force.server.validation	1 0	<p>Specifies whether Fax Agent forces the server to validate the user ID and password.</p> <p>1 = Fax Agent forces the server to validate user ID and password.</p> <p>0 = Fax Agent does not force the server to validate user ID and password.</p> <p>The default is 0.</p> <p><b>Note</b> Do not change this value without first consulting Perceptive Software Product Support.</p>
	reconnect.interval	Any positive integer	<p>Specifies how many seconds Fax Agent will continue to try to reconnect to Perceptive Content Server after a lost connection.</p> <p>The default is 120 seconds.</p> <p><b>Note</b> Do not change this value without first consulting Perceptive Software Product Support.</p>
	authentication.token	Any valid token.	Specifies the authentication token to use for authentication with Perceptive Content Server.
[Outbound]	outbound.fax.smtp.server.url	The URL of the SMTP server	<p>Specifies the URL of the SMTP server.</p> <p>Examples</p> <p>outbound.fax.smtp.server.url=smtp://&lt;hostname&gt;:&lt;port&gt; when communicating over SMTP.</p> <p>outbound.fax.smtp.server.url=smtps://&lt;hostname&gt;:&lt;port&gt; when communicating over SMTPS.</p>
	outbound.fax.smtp.validate.certificates	TRUE FALSE	<p>Specifies whether Fax Agent should validate certificates used during secure communication with the SMTP server.</p> <p>TRUE = Enable certificate validation.</p> <p>FALSE = Disable certificate validation.</p>
	outbound.fax.smtp.use.starttls	TRUE FALSE	<p>Specifies whether Fax Agent should use STARTTLS when communicating with the SMTP server.</p> <p>TRUE = Enable STARTTLS</p> <p>FALSE = Disable STARTTLS.</p>
	outbound.fax.smtp.username	A valid username	Specifies the username to use when authenticating with the SMTP server if basic authentication has been enabled on the SMTP server.
	outbound.fax.smtp.password	A valid password	Specifies the password to use when authenticating with the SMTP server if basic authentication has been enabled on the SMTP server.



Group	Setting	Options	Description
	outbound.fax.enabled	TRUE FALSE	Specifies whether outbound faxing is enabled. TRUE = Outbound faxing is enabled FALSE = Outbound faxing is disabled The default is FALSE.
	outbound.enabled.channels	integers	Specifies the channels you dedicate to outbound faxing. This setting uses an integer that enables or disables the specified fax board's channels, every bit in this integer represents one channel.  1 = enable 0 = disable Examples: 0000000C means enable channel 2 and 3. 00000003 means enable channel 0 and 1. FFFFFFFF means enable all channels. 0000000F means enable channels 0, 1, 2, and 3d. 3FFFFFFFFF means 46 channels (Two TR1034 boards). 7FFFFFFF means 23 channels. 00 means no channel enabled. 000F means 4 channels (leading 0's can be omitted) The default is 00 (no enabled channels). <b>Notes</b> <ul style="list-style-type: none"> <li>You cannot use the same channels specified in outbound.enabled.channels.</li> <li>The value you provide for the outbound channels must be in hexadecimal. For more information on determining the correct hexadecimal number, see Appendix C.</li> </ul>
	outbound.fax.retries	Any positive integer	Specifies the number of unsuccessful attempts of sending a fax before Fax Agent identifies the fax as failed.  The default is 0.
	outbound.fax.mailserver	SMTP server name	Specifies the IP address or DNS name of the email server.  <b>Note</b> This setting has been deprecated and is replaced by outbound.fax.smtp.server.url.

Group	Setting	Options	Description
	outbound.fax.mailserver.port	SMTP server port number	Specifies the email server port. The default is 25. <b>Note</b> This setting has been deprecated and is replaced by outbound.fax.smtp.server.url.
	outbound.fax.coverpage.enabled	TRUE FALSE	Specifies whether Fax Agent includes a TIF file as a cover page for faxes. TRUE = Fax Agent uses a TIFF file. FALSE = Fax Agent does not use a TIFF file.
	outbound.fax.coverpage	\$(IMAGENOWDIR6) \\etc\\filename.tif	Specifies the path and filename of the TIFF file Fax Agent uses as a cover page, if outbound.fax.coverpage.enabled is set to TRUE. <b>Note</b> The TIFF file must reside on the file system used for Fax Agent.
	outbound.fax.coverpage.attention.offset	x,y	Specifies the location in x and y coordinates on the cover page for the attention text added by the user once fax out is initiated. The default is 0,0.
	outbound.fax.coverpage.pagecount.offset	x,y	Specifies the location in x and y coordinates on the cover page for the page count text. The default is 0,0.
	outbound.fax.coverpage.comments.offset	x,y	Specifies the location in x and y coordinates on the cover page for the comments text added by the user once fax out is initiated. The default is 0,0.
	outbound.fax.prefix.number	Any positive integer	Specifies the prefix number Fax Agent uses before dialing the fax number. For example, use 9 to dial 9 to access an outside line.
[Message Queuing]	mq.agent.ip.enable.override	TRUE FALSE	Specifies whether the agent uses the IP address in the mq.agent.ip.address.override setting of this same configuration file to connect to Message Queuing Agent. If FALSE, the agent uses the settings in inow.ini. For example, use these settings when the agent is behind a firewall or on a different subnetwork than Perceptive Content Server. The default is FALSE.

Group	Setting	Options	Description
	mq.agent.ip.address.override	Any valid and explicit IP address	Specifies the IP address to use when the mq.agent.ip.enable.override setting is set to TRUE. If mq.agent.ip.enable.override is set to TRUE and no override address is provided for this setting, Perceptive Content Server generates an exception error. The default is empty.

## Appendix C: Find the values for enabled channels

This appendix explains how to find the values for `enabled.channels` and `outbound.enabled.channels`. These settings determine the channel layout for inbound and outbound channels for the Fax Agent service (whether channels are enabled or disabled) and equate to binary numbers that are expressed in hexadecimal.

### About binary to hexadecimal conversion

Some models of fax boards can support up to 46 channels, with two boards supporting 23 channels each, and so the process of finding the correct hexadecimal number can be complex. Here is a simple example of how to turn inbound channels on and off for an eight channel fax board. For an eight channel board, the channel layout equates to an eight-digit binary number, with channel 1 represented by the rightmost digit. Therefore, enabling channel 8 equates to 1000,0000 as a binary value. The equivalent hexadecimal number for 1000,0000 is 80. Thus, you would set `enabled.channels` to 80.

Likewise, if you wanted to enable channels 7 and 8 as outbound (binary 1100,0000 or hex C0), you would set `outbound.enabled.channels` to C0.

A 23 channel fax board requires 23 binary digits (channels 0 through 22). If you wanted to enable channels 15 through 22 as outbound channels, this would equate to 111,1111,1000,0000,0000,0000 as a binary value, which corresponds to hex 7F8000. So to enable outbound channels 15 through 22, set `outbound.enabled.channels` to 7F8000.

### Use Windows Calculator to find the hexadecimal value

Complete the following steps to find the values for `inbound.enabled.channels` and `outbound.enabled.channels`.

1. On the **Windows Start** menu, point to **Accessories** and click **Windows Calculator**.
2. If you are using Windows XP or earlier, on the **View** menu, select **Scientific**. If you are using Windows Vista or later, on the **View** menu, select **Programmer**.
3. Select the **Bin** option.
4. Enter the binary number you want to convert.
5. Select the **Hex** option. Use the following conversion chart as a reference.

Dec	Hex	Bin	Dec	Hex	Bin
0	0	0000	8	8	1000
1	1	0001	9	9	1001

2	2	0010
3	3	0011
4	4	0100
5	5	0101
6	6	0110
7	7	0111

10	A	1010
11	B	1011
12	C	1100
13	D	1101
14	E	1110
15	F	1111