



# **Stratus Imaging Workflow and Reporting**

## **Archive Synchronization Configuration Guide**

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# Document and release information

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## Products

Stratus Imaging Reporting  
Stratus Imaging Workflow

## Regulatory information



Manufactured for Change Healthcare Canada Company  
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## Support information

For technical support or any service related to Stratus Imaging Workflow and Reporting, call the toll-free number for your region listed at <https://enterpriseimaging-support.optum.com>.

Standard support includes software troubleshooting, software updates covered under your active Support and Maintenance Agreement, and assistance with issue triage and escalation. Software and hardware coverage levels and response expectations are defined in your Support and Maintenance Agreement.

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For any serious incident that has occurred in relation to Stratus Imaging Workflow and Reporting, a report should be made to Enterprise Imaging Support and to the relevant authority of the specific region where you or the user are located.

## Reader comments

Comments or suggestions regarding this publication are welcome. Call the toll-free number for your region listed at <https://enterpriseimaging-support.optum.com>.

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# About this guide

The content in this guide is republished from *Archive Synchronization Configuration Guide* (Version 2.0, Effective date: May 10, 2026) available on the Learning Center for Stratus Imaging Workflow and Stratus Imaging Reporting at <https://help.pacs.stratus.optum.com>.

## Purpose



This document provides instructions to set up the end-to-end setup of Gateways, Archive Destinations, Auto Archive, and IOCM.

## Audience

This document is intended for PACS administrators.

## Important product icons

The following important icons are used:

Icon	Label
	Manufacturer
	Consult instructions for use

## About the screenshots

The names and any personal and medical information in the screenshots do not belong to real individuals. Any similarity or likeness to actual individuals is purely coincidental and not intentional.

The screenshots do not reflect release-specific details.

# Overview

Archive Synchronization ensures that external long-term archives (VNA or external PACS archives) stay aligned with the authoritative data held in the platform. When studies, images, or patient metadata change after archival, the platform automatically communicates those changes downstream, so archives reflect the correct clinical and legal record.

The feature relies on two standards:

- IOCM (Imaging Object Change Management) — Used for DICOM image- and study-level changes such as deletions, splits, and merges. The platform sends Rejection Notes (DCM 113001) so the archive suppresses or reconciles obsolete data.
- HL7 ADT Messages — Used for patient and demographic updates. ADT A08 is sent for standard demographic changes; ADT A40 is sent when identifiers such as MRN change.

Configuration is organized into three steps:

- Create a Gateway — a logical representation of a deployed Gateway instance
- Create a Destination — the external archive system the Gateway will push images to
- Link the physical Gateway device to the platform using the Service Account key

Component	Where it lives	What it controls
Gateway	Group > Gateway Management > Gateways tab	Represents the physical Gateway device. Each Gateway has its own Pub/Sub channel. Multiple Gateways can exist per Facility Group.
Destination	Group > Gateway Management > Destinations tab	The external archive or VNA. Auto Archive, Support IOCM, status trigger, facilities scope, and retry settings are all configured here.
Jobs	Group > Gateway Management > Jobs tab	View of all archive, DICOM, IOCM, and KOS jobs — their type, status, timestamps, and failure reasons.

# Before You Begin

Confirm all of the following before starting the configuration:

- You are logged in as a Facility Group Admin for the Facility Group.
- The physical Gateway software is installed and running on the on-premises workstation or server.
- You have the IP address, port, and DICOM AE titles for the external archive (VNA or PACS archive).
- The Result Endpoint URL and Result Endpoint Secure Key have been provided by the technical/implementation team.
- You know which exam status (Pending, Inflight, or Completed) should trigger automatic archiving to each destination.
- You know which facilities within the Facility Group each archive destination should serve.

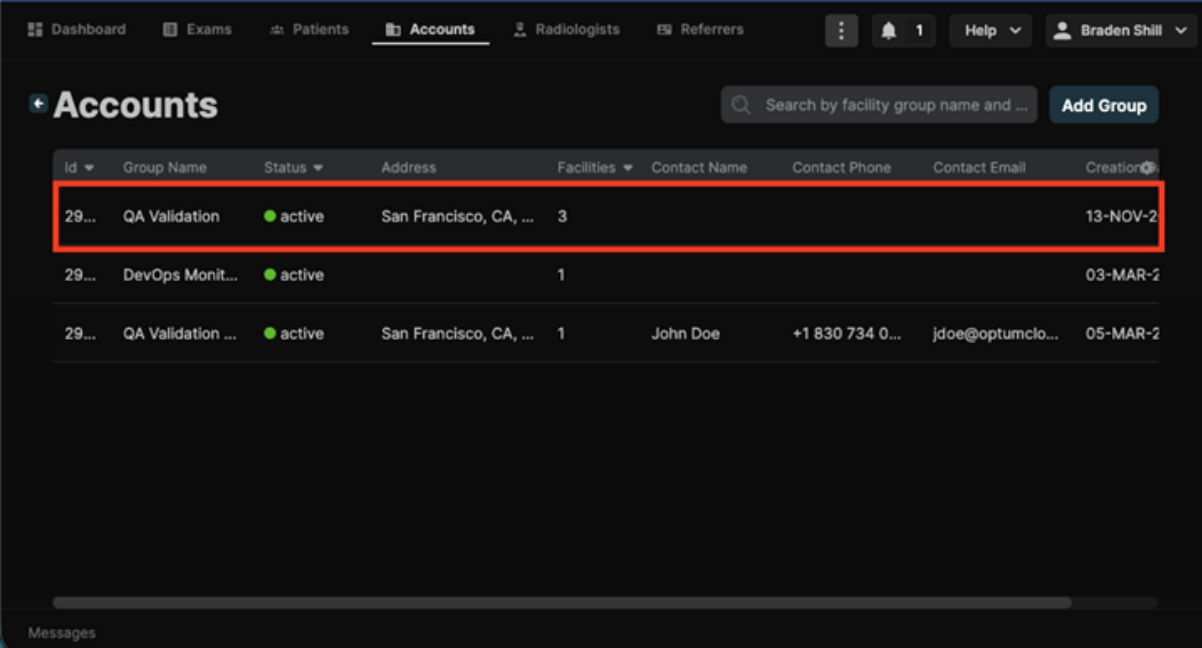
# Step 1: Create a Gateway

A Gateway must be created in the platform before any destinations can be configured. Creating a Gateway automatically provisions the required Google Cloud resources (Pub/Sub topic, Service Account, and IAM role bindings). The Service Account JSON key generated here is used in Section 4 to link the physical Gateway device to the platform.

## Navigate to Gateway Management

### 1. Open your Facility Group

Log in to the platform and navigate to your Account. Select the Facility Group you are configuring.

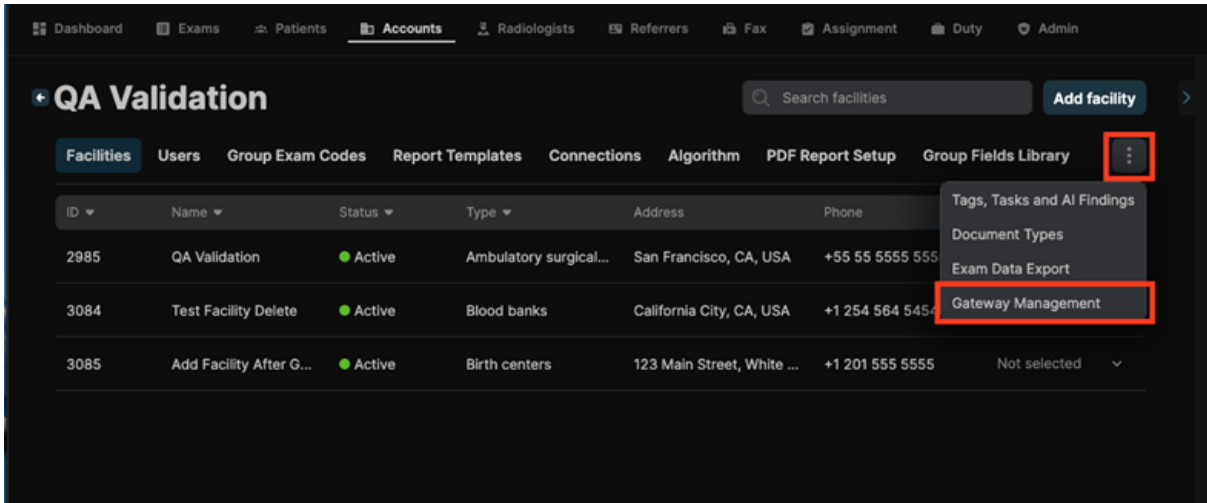


The screenshot shows a web application interface for managing accounts. At the top, there is a navigation bar with tabs for Dashboard, Exams, Patients, Accounts (selected), Radiologists, and Referrers. On the right, there are notification and user profile icons. Below the navigation bar, the main content area is titled 'Accounts' and includes a search bar and an 'Add Group' button. A table lists several facility groups with columns for Id, Group Name, Status, Address, Facilities, Contact Name, Contact Phone, Contact Email, and Creation date. The first row of the table is highlighted with a red border.

Id	Group Name	Status	Address	Facilities	Contact Name	Contact Phone	Contact Email	Creation
29...	QA Validation	active	San Francisco, CA, ...	3				13-NOV-2
29...	DevOps Monit...	active		1				03-MAR-2
29...	QA Validation ...	active	San Francisco, CA, ...	1	John Doe	+1 830 734 0...	jdoe@optumclo...	05-MAR-2

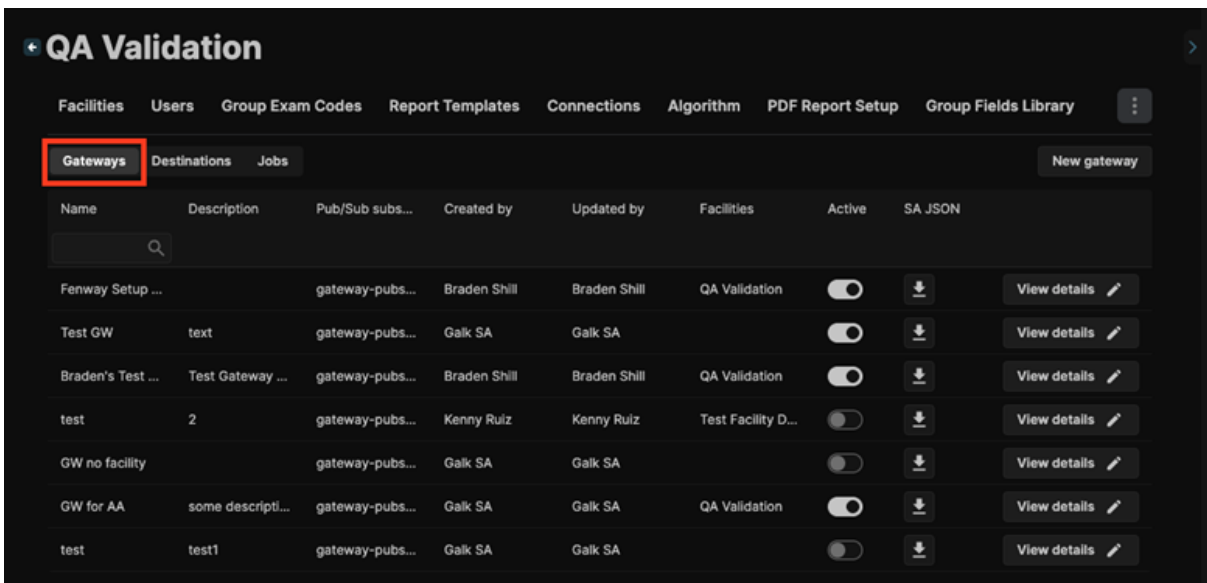
### 2. Open Gateway Management

In the Facility Group navigation, click Gateway Management. The Gateway Management section opens with three sub-tabs: Gateways, Destinations, and Jobs.



### 3. Select the Gateways tab

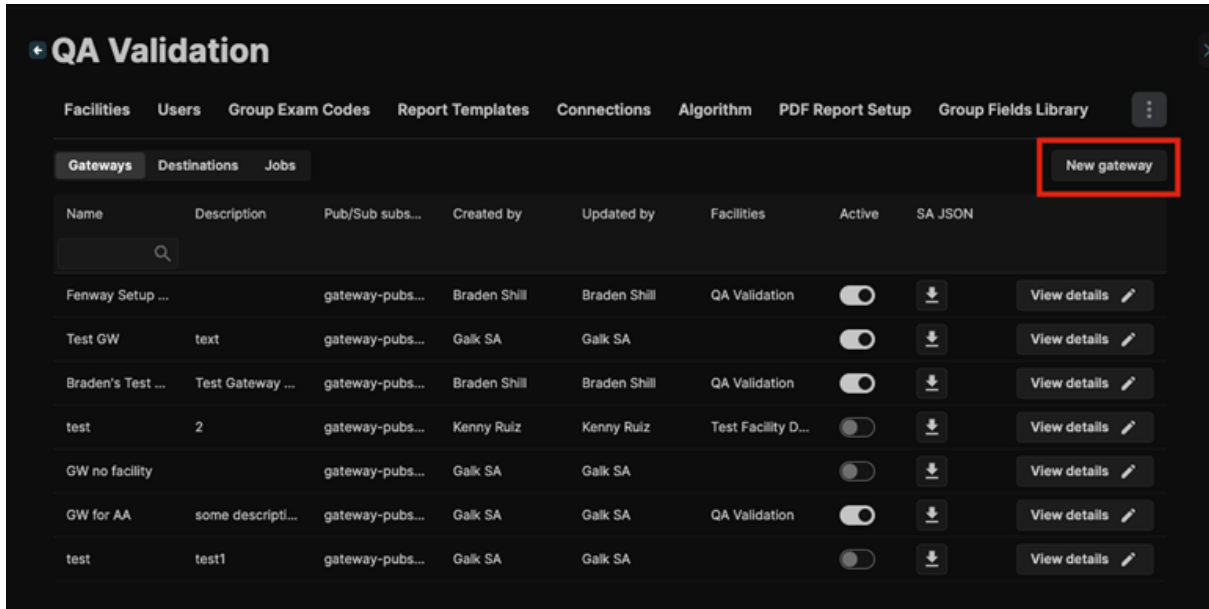
Click the Gateways sub-tab. This lists all Gateways configured for the Facility Group.



## Create a New Gateway

### 1. Click New Gateway

The Gateway modal opens.



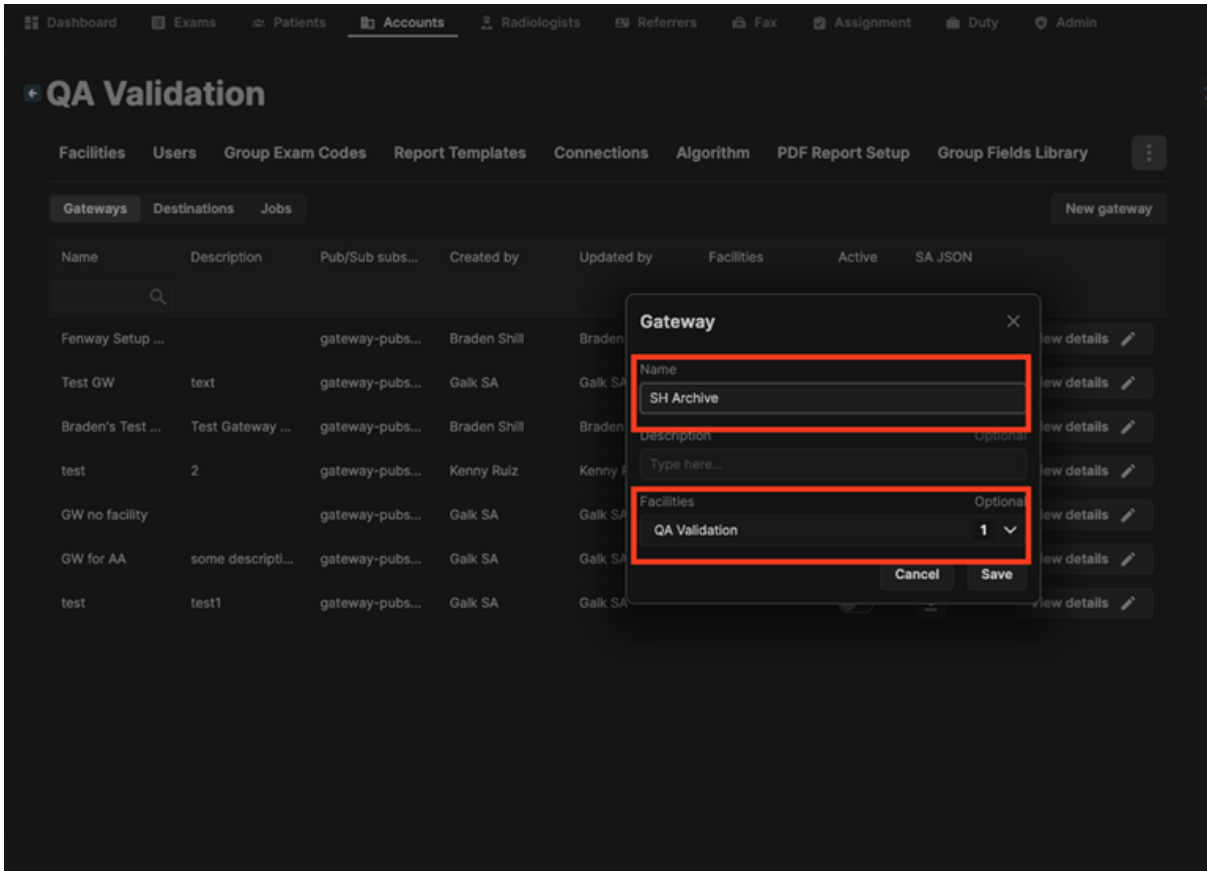
## 2. Complete the Gateway fields

Field	Required	Description
Name	Yes	A descriptive name for this Gateway. Used to identify the Gateway in the Destinations list and Jobs tab.
Description	No	Optional free-text description.
Facilities	No (Optional)	Scope the Gateway to specific facilities within the Facility Group. If left blank, the Gateway is available to all facilities. Note: Destinations can only select facilities that are already connected to their selected Gateway.

## 3. Click Save

The platform provisions the Gateway. A Service Account and Pub/Sub topic are created automatically in the background. The Gateway appears in the Gateways table.

Note: Creating a Gateway provisions GCP resources automatically. If provisioning fails, the system rolls back cleanly — no partial resources are left behind. If the Gateway does not appear in the table after saving, contact your platform administrator.



## Download the Service Account JSON Key

After the Gateway is created, you need to download the Service Account (SA) JSON key. This key is used in Section 4 to authenticate the physical Gateway device with the platform.

### 1. Locate the Gateway in the table















In the Gateways sub-tab, find the Gateway you just created.

### 2. Click the SA JSON download icon

In the SA JSON column, click the download icon. The JSON key file is downloaded to your workstation. Store it securely — it is required to complete the Gateway device configuration in Section 4.

Important: The SA JSON key grants access to platform resources. Treat it like a password. Do not share it or store it in unsecured locations.

The screenshot shows the 'QA Validation' interface. At the top, there are navigation tabs: Facilities, Users, Group Exam Codes, Report Templates, Connections, Algorithm, and PDF Report Setup. Below these is a sub-menu with 'Gateways' (highlighted with a red box), 'Destinations', and 'Jobs'. A 'New gateway' button is on the right. The main area contains a table with the following columns: Name, Description, Pub/Sub subs..., Created by, Updated by, Facilities, Active, SA JSON, and a 'View details' button with an edit icon. The first row of the table has a red box around the download icon in the 'SA JSON' column.

Name	Description	Pub/Sub subs...	Created by	Updated by	Facilities	Active	SA JSON	
Fenway Setu...		gateway-pub...	Braden Shill	Braden Shill	QA Validation	<input checked="" type="checkbox"/>		<a href="#">View details</a> 
Test GW	text	gateway-pub...	Galk SA	Galk SA		<input checked="" type="checkbox"/>		<a href="#">View details</a> 
Braden's Test...	Test Gateway...	gateway-pub...	Braden Shill	Braden Shill	QA Validation	<input checked="" type="checkbox"/>		<a href="#">View details</a> 
test	2	gateway-pub...	Kenny Ruiz	Kenny Ruiz	Test Facility ...	<input type="checkbox"/>		<a href="#">View details</a> 
GW no facility		gateway-pub...	Galk SA	Galk SA		<input type="checkbox"/>		<a href="#">View details</a> 
GW for AA	some descrip...	gateway-pub...	Galk SA	Galk SA	QA Validation	<input checked="" type="checkbox"/>		<a href="#">View details</a> 
test	test1	gateway-pub...	Galk SA	Galk SA		<input type="checkbox"/>		<a href="#">View details</a> 

# Step 2: Create an Archive Destination

A Destination represents the external archive system (VNA or PACS archive) that the Gateway will push images to. Auto Archive, IOCM, and retry settings are all configured at the destination level.

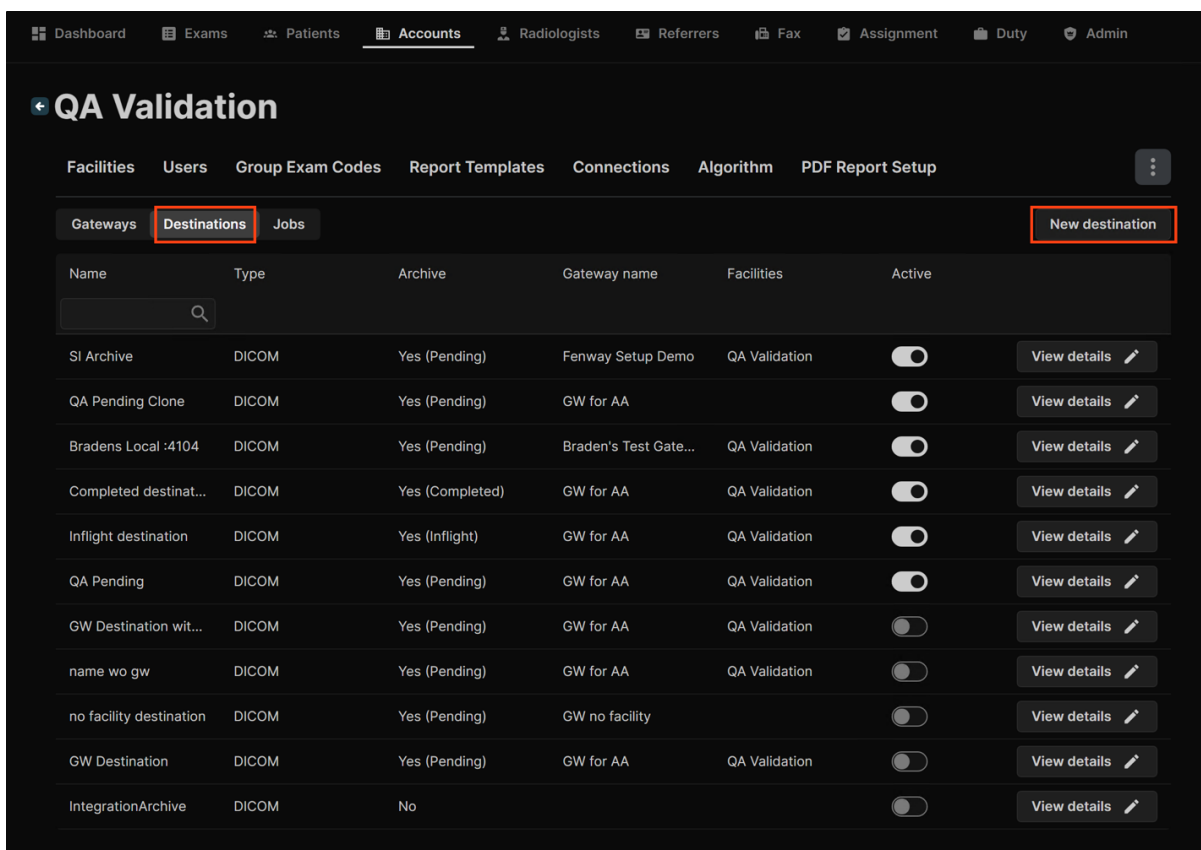
## Navigate to the Destinations Tab

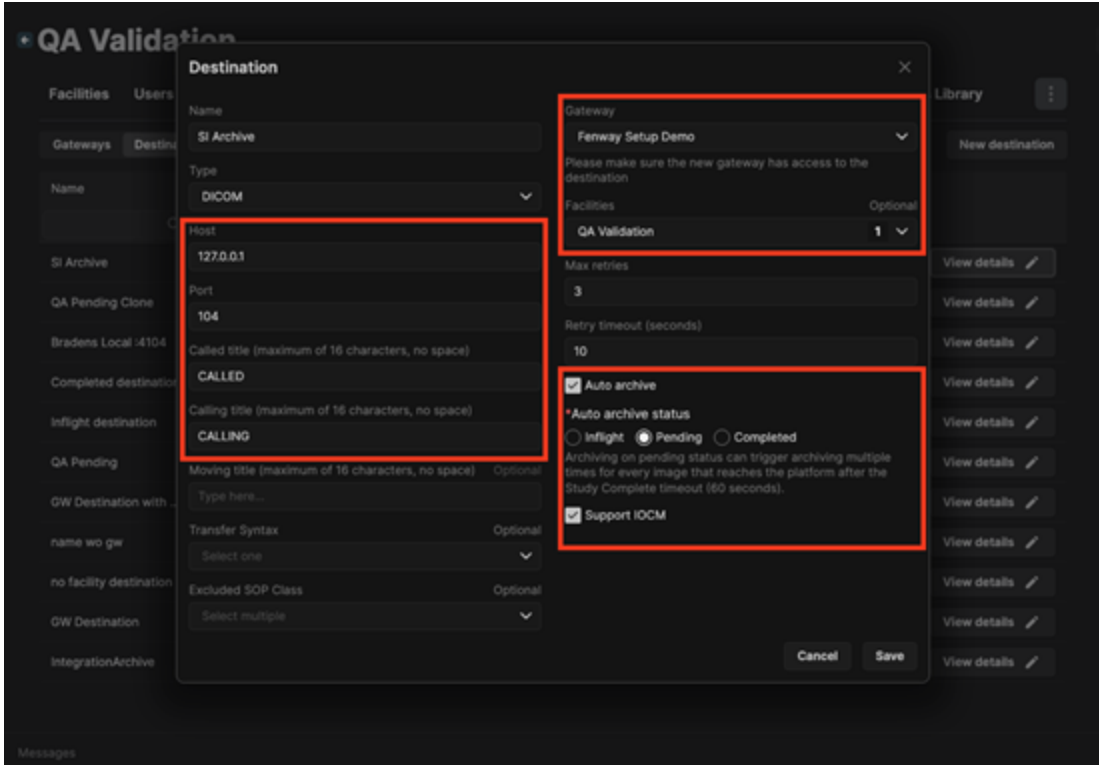
### 1. From Gateway Management, click the Destinations tab

The Destinations table lists all configured destinations for the Facility Group.

### 2. Click New Destination

The Destination modal opens.





## Complete the Destination Fields

Fill in the fields as described below. Fields marked Required must be completed before saving.

Field	Required	Default	Description
Name	Yes	—	A descriptive label for this destination. Displayed in the Destinations table and Jobs tab.
Type	Yes	—	The DICOM service type for this destination (e.g., DICOM SCP).
Host	Yes	—	The IP address or hostname of the external archive as seen from the Gateway's network. Example: if the Gateway is at 192.168.0.12 and the VNA is at 192.168.0.31, enter 192.168.0.31.
Port	Yes	—	The DICOM port on the external archive.

Field	Required	Default	Description
Called title (AE Title)	Yes	—	The Called AE Title of the external archive. Maximum 16 characters, no spaces.
Calling title (AE Title)	Yes	—	The Calling AE Title the Gateway will use when connecting. Maximum 16 characters, no spaces.
Moving title	No	—	Optional. Used when the destination acts as a C-MOVE target. Maximum 16 characters, no spaces.
Gateway	Yes	—	Select the Gateway that will route jobs to this destination. Only Gateways in the same Facility Group are shown.
Facilities	No	All	Scope which facilities can use this destination for auto-archiving. Only facilities already linked to the selected Gateway can be chosen. Leave blank to apply to all facilities.
Max retries	Yes	3	Number of retry attempts for failed archive jobs. Must be 0 or greater.
Retry timeout (seconds)	Yes	10	Delay in seconds between retry attempts. Must be greater than 0.
Transfer syntax	No	—	Optional. Specifies the DICOM transfer syntax for image transmission.
Excluded SOP Class	No	—	Optional. SOP classes to exclude from archiving to this destination.

## Configure Auto Archive

Auto Archive controls whether the platform automatically pushes studies to this destination when they reach a configured exam status.

### 1. Enable Auto Archive

Check the Auto archive checkbox in the destination modal.

## 2. Select the trigger status

Choose one status from the radio buttons:

- Inflight — Archive triggers when the exam enters Inflight status (e.g., when images are received and the study is actively being worked).
- Pending — Archive triggers when the exam reaches Pending status.
- Completed — Archive triggers when the radiologist signs the report and the exam is marked Completed.

**Note:** Only one status can be selected per destination. If you need to archive at different statuses for different sites, create separate destinations. Each destination archives only on the first time the exam reaches the configured status — repeat transitions (e.g., Completed → Inflight → Completed) do not create new archive jobs.

### Important — Recommended Auto Archive Status: Completed

When Auto Archive is configured to trigger at Pending or Inflight, an order lock is applied for the duration of the archive job. While the lock is active, the following actions are blocked for all users on that exam:

- DICOM send
- Exam sharing
- Reporting and dictation
- Metadata changes

Users who attempt any of these actions while an archive job is running will see the message: “Archiving in progress — edits are not permitted until the archive job is complete.”

The lock releases automatically when the archive job succeeds or fails. The duration of the lock depends on the study image count and available Gateway bandwidth and may last several minutes for large studies or constrained networks.

**Note:** Images that arrive or are added after an archive job completes are handled automatically — the system will push any new images to the archive once the initial job finishes. Images will not be missed.

**Recommendation:** Set Auto Archive to trigger at Completed. When archiving is triggered at Completed status, the lock activates only after the study has been reported and signed — meaning radiologists and technologists complete their workflows without interruption. Pending and Inflight configurations are supported but may impact reporting workflows on large studies or constrained networks.

## Configure Support IOCM

The Support IOCM checkbox marks this destination as IOCM-capable. When enabled, the platform will send IOCM Rejection Notes to this destination whenever images or studies are changed (deleted, split, merged) after the study has been successfully archived here.

### 1. Enable Support IOCM

Check the Support IOCM checkbox if the external archive supports receiving DICOM KOS (Key Object Selection) objects.

**Note:** IOCM messages are only generated when the archive state for this destination is confirmed as Archived. If the exam has not yet been archived, or if the archive attempt failed, IOCM messages are suppressed. Do not enable Support IOCM unless the archive system is confirmed to support KOS/IOCM.

## Configure Allow Prefetch

Check the Allow prefetch checkbox to allow this destination to be used as a prefetch source. This enables the platform to query and retrieve prior studies from this archive.

## Save the Destination

### 1. Review all fields

Confirm Host, Port, AE Titles, Gateway assignment, Facilities scope, and Auto Archive settings are correct.

### 2. Click Save

The destination is created. It appears in the Destinations table with Archive, Gateway, Facilities, and Active columns visible.

## Destinations Table Reference

The Destinations table displays the following columns for each configured destination:

<b>Column</b>	<b>Description</b>
Name	The destination name as configured.
Type	The DICOM service type.
Archive	Displays 'Yes (Pending)', 'Yes (Inflight)', or 'Yes (Completed)' when Auto Archive is ON, or 'No' when off.
Gateway name	The Gateway associated with this destination.
Facilities	Comma-separated list of facilities in scope. Hover to see the full list if truncated.
Active	Inline toggle. Inactive destinations do not receive archive jobs or IOCM messages.

# Step 3: Link the Physical Gateway Device

After creating the Gateway in PACS and downloading the SA JSON key, the physical Gateway device must be configured to communicate with the platform. This step is performed in the Gateway's local administration interface.

## Gather Required Information

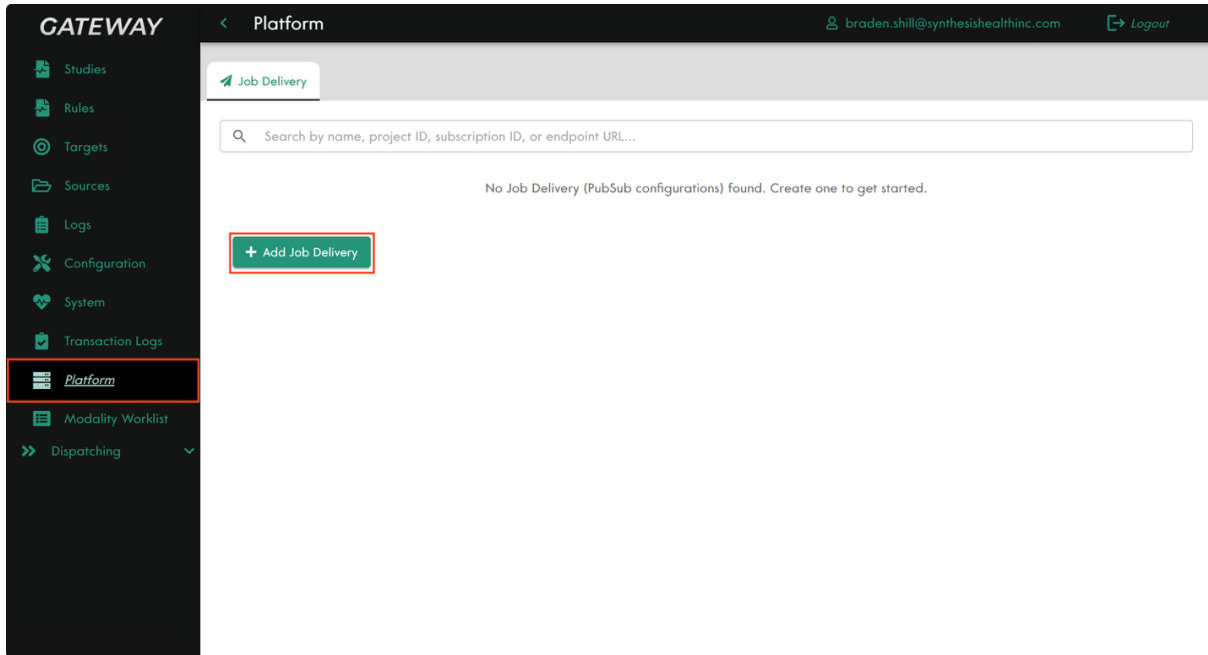
Before logging in to the Gateway, collect the following from the PACS:

Item	Where to find it in PACS
SA JSON key file	Gateway Management > Gateways tab > SA JSON column (download icon)
GCP Project ID	Account > Connections
Pub/Sub Subscription ID	Gateway Management > Gateways tab > Pub/Sub subscription column
Result Endpoint URL	Provided by the technical team at implementation
Result Endpoint Secure Key	Provided by the technical team at implementation

## Configure Job Delivery on the Gateway

### 1. Log in to the Gateway administration interface

Access the Gateway's local web interface. Navigate to the Platform tab.



## 2. Click Add Job Delivery

The Job Delivery configuration form opens.

## 3. Complete the form

Field	Value
Name	A descriptive name for this job delivery configuration.
Project ID	The GCP Project ID from PACS (Account > Connections).
Subscription ID	The Pub/Sub subscription key from the Gateways table in PACS.
Result Endpoint URL	Provided by the Technical team.
Result Endpoint Secure Key	Provided by the Technical team.
Service Account File (JSON)	Copy and paste the full contents of the downloaded SA JSON key file.

## 4. Enable the Active flag

Check the Active checkbox to activate this job delivery configuration.

## 5. Save

The Gateway device is now linked to PACS and will begin processing archive jobs from the Pub/Sub topic.

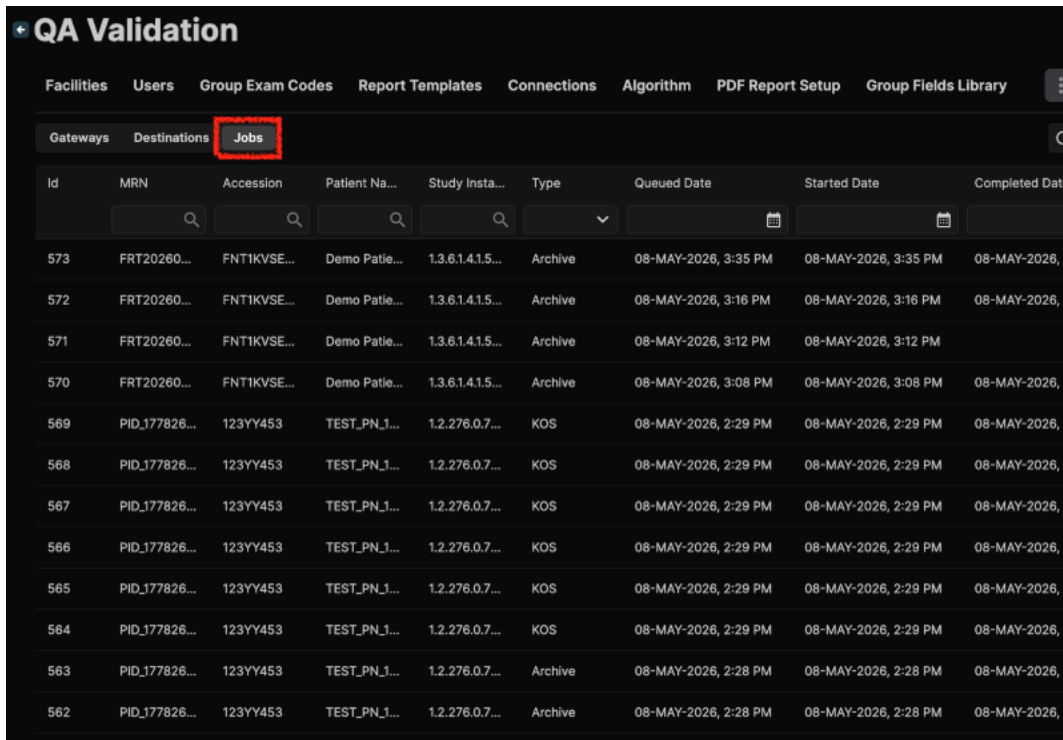
The screenshot shows the 'GATEWAY' application interface. On the left is a dark sidebar with a menu containing: Studies, Rules, Targets, Sources, Logs, Configuration, System, Transaction Logs, Platform (highlighted), Modality Worklist, and Dispatching. The main content area is titled 'Platform' and shows a modal window for 'Add New PubSub Configuration'. The modal has a title bar with a back arrow and the user 'braden.shill@synthesishealthinc.com' with a 'Logout' link. The form fields are: 'Name' (text input), 'Project ID' (text input), 'Subscription ID' (text input), 'Result Endpoint URL' (text input), 'Result Endpoint Secret Key' (text input), and 'Service Account File (JSON) \*\*' (large text area). Below the text area is a note: 'Enter JSON format for service account file (required)'. At the bottom left of the modal is an 'Active' toggle switch, which is currently turned off.

# Monitoring Archive Jobs

Once the Gateway and Destination are configured, archive jobs can be monitored in real time from the Jobs tab.

## Navigate to the Jobs Tab

From Gateway Management, click the Jobs sub-tab. The Jobs table displays all archive, DICOM, IOCM, and KOS jobs for the Facility Group.



## Jobs Table Columns

Column	Description
MRN	Patient MRN for the exam associated with the job.
Accession	Exam accession number.

Column	Description
Patient Name	Patient name.
Type	Job type: Archive, DICOM, IOCM, or KOS.
Queued Date	Date and time the job was created and queued (format: 21-OCT-2025 6:38 PM).
Started Date	Date and time the Gateway began processing the job.
Completed Date	Date and time the job was completed (success or failure).
Study Instance UID	The DICOM Study Instance UID.
Facility	The facility the exam belongs to.
Destination	The destination the job was routed to.
State	Current job state: Queued, In Progress, Completed, or Failed.
Reason	For failed jobs: the failure reason reported by the Gateway (truncated; hover for full text).

## Filtering and Searching Jobs

- Filter by Type using the Type column to show only Archive, DICOM, IOCM, or KOS jobs.
- Filter by date using the date controls on Queued Date, Started Date, and Completed Date columns. Click the × icon on a date filter to clear it.
- Search by MRN, Accession, Patient Name, Study Instance UID, Facility, or Destination using the column search fields.

## Archive States

The platform tracks an archive state per exam per destination. This state determines whether IOCM messages are generated for subsequent changes:

State	Meaning	IOCM behavior
Archived	Gateway confirmed successful delivery.	IOCM messages are generated for subsequent changes.
Failed	Gateway reported a failure.	IOCM suppressed. Retry the job or investigate the failure reason.
Unknown	No callback received from Gateway within the timeout window.	IOCM suppressed.
Not Archived (no record)	No archive job has been created for this exam + destination.	IOCM suppressed.

## Retrying Failed Jobs

For jobs in a Failed state, a Retry icon is available in the Jobs table. Click the Retry icon (tooltip: 'Retry') to requeue the job. The retry will use the Max retries and Retry timeout values configured on the destination.

# How IOCM Works

IOCM (Imaging Object Change Management) ensures that changes made to studies in PACS — such as image deletion, study splits, study merges, or metadata corrections — are communicated to the external archive so the archive reflects the correct clinical record.

## When IOCM Messages Are Generated

Trigger event	IOCM message sent	Requirement
Image or series deleted	Rejection Note (DICOM 113001) sent to the archive destination.	supportlocm = true on destination; exam archive state = Archived.
Study split	Rejection Note sent for obsolete instances moved out of the study.	Same as above.
Study merged	Rejection Note sent for instances that now belong to a different study.	Same as above.
Images added after archival	Sync message sent so the archive receives the new instances.	Same as above.
Patient/demographic update	HL7 ADT A08 (update) or ADT A40 (merge/MRN change) sent.	Send ADT Message enabled at facility level.

## IOCM Suppression Rules

IOCM messages are NOT generated in the following situations:

- The destination does not have Support IOCM enabled.
- The exam's archive state for this destination is Failed or Unknown.
- The exam has never been archived to this destination (no archive record exists).
- The destination is inactive.

## Multi-Destination IOCM

In environments with multiple destinations, IOCM eligibility is evaluated independently per destination. A change event will generate IOCM messages only to destinations where `supportlocm = true` and the archive state is Archived. Destinations that have not yet archived the exam will not receive IOCM messages for that exam.

# Troubleshooting

Issue	Likely cause	Action
No archive jobs created after exam reaches configured status	Auto Archive is OFF on the destination; destination is inactive; or exam was in that status before the feature was enabled (no retroactive archiving).	Verify Auto Archive is ON and the correct status is selected. Confirm the destination is Active. Note: exams that reached the status before configuration are not retroactively archived.
Archive job created but exam not archived	Gateway is not running or not connected; C-FIND failed and no fallback push occurred; network connectivity issue between Gateway and VNA.	Check the Gateway administration interface for errors. Confirm the VNA host, port, and AE titles are correct. Check the Reason column in the Jobs tab for Gateway-reported failure details.
Jobs table shows 'Failed' state	Gateway reported a permanent failure after max retries exhausted.	Review the Reason column for details. Correct the underlying issue (e.g., AE title mismatch, network issue) then click Retry.
IOCM messages not being sent after an image deletion	Destination does not have Support IOCM enabled; or archive state for the exam on that destination is not Archived.	Verify Support IOCM is enabled on the destination. Check the archive state (if the exam never successfully archived, IOCM is suppressed).
'Unable to launch images' error on Gateway device link	SA JSON key incorrect or expired; Pub/Sub Subscription ID incorrect; Result Endpoint URL or key incorrect.	Re-download the SA JSON key from the Gateways tab. Verify the Subscription ID from the Gateways table Pub/Sub column. Confirm the Result Endpoint values with the Technical support team.
Gateway cannot be deleted	The Gateway has linked destinations, or jobs are in progress.	Remove all destinations linked to the Gateway first, or wait for in-progress jobs to complete.
Destination cannot be saved (Gateway error)	No Gateway selected, or selected Gateway belongs to a different Facility Group.	Select a Gateway from the same Facility Group. If no Gateways exist, create one first (Section 2).