



# Notifications 7.3.0

## Administration Manual v1.0

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## Revision Summary

Software Release	Document Version	Date	Nature of Amendment
7.3	1.0	May 8, 2018	<p>General Availability release.</p> <ul style="list-style-type: none"> <li>Added <a href="#">Metrics</a>.</li> <li>Added <a href="#">Configuring Metrics for Notifications</a>.</li> <li>Added <a href="#">Configuring Communicate Webmail for Notifications</a>.</li> <li>Added <a href="#">Notifications Workflow of a Typed Clinical Event with Multiple Event Types</a>.</li> <li>Updated the diagram in <a href="#">Notifications Workflow of an Event with Multiple Notification Types</a>.</li> <li>Updated diagram and instructions in <a href="#">Enabling Performance Monitoring Using JAMon</a>.</li> </ul>

Refer to [Printable Documents](#) to download printable versions of the documentation.



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## Introduction to the Administration Manual





This manual is aimed at systems administrators who have to configure and maintain the Notifications application as part of the HIE Solution Package.

## About this Manual

This manual describes Notifications and how to configure and maintain addresses, relationships, delivery channels, events, notifications, standard subscriptions, and receiving EMR systems. It is aimed at Systems Administrators who have to manage and configure Notifications. It is assumed that readers:

- Have basic database administration skills.
- Are familiar with the configuration and management of Clinical Portal.

Typographical Conventions. The following typographical conventions are used throughout this manual and in the application's help screens.

Convention	Description
< >	Angle brackets identify variables that you must supply. Do not type the angle brackets.
[ ]	Square brackets represent an optional item. If an item is not marked with square brackets, it is required. Do not type the square brackets.
<code>monospace</code>	Monospace type indicates directory names, path names and file names.
<b>bold</b>	Boldface type indicates button names and menu commands.
	Points out Important information.
	Cautionary advice to take note of something crucial.
	Highlights additional information which may be relevant or noteworthy.
	Highlights a helpful tip.

## About Notifications

Notifications enables healthcare organizations to notify recipients of specified events for patients. For example, when the patient visits the organization or has new results or documents. Recipients can be an internal or external healthcare provider, patient, or patient's guardian.

The recipients control the notification by subscribing to events they wish to be notified about and determining the delivery method for each subscription. The recipient can also decide whether to receive summary notifications instead of individual notifications.

The purpose of providing Notifications to recipients is to keep them informed of the patient's progress and availability of some patient records, thus encouraging the recipients to refer their patients to the organization.

The administrator modifies Clinical Portal users and groups in Clinical Portal. Refer to [Integration with Providers in Clinical Portal](#) for details.

All other administration tasks are carried out in Orion Health™ Platform (Platform).

### Quick Guide

I want to ...

- [Configure a Relationship Type](#)
- [Configure the Delivery Channel](#)
- [Configure the Event Types](#)
- [Configure the Notification](#)
- [Configure the Notification Message](#)
- [Configure Rhapsody to support the new notification](#)

## Clinical Event Models

Notifications includes new clinical event models for Encounter, ImagingReport, LaboratoryObservation, and TranscribeDocument events. These clinical event models are part of the default configuration for Notifications and are distinguished from the old models by `Event 8.7` or `LabEvent 8.7` appended to the event name. The legacy event models come as an attachment that can be manually imported.

Dictionary-Based Event Types	Clinical Event-Based Event Types
Appointment	

Dictionary-Based Event Types	Clinical Event-Based Event Types
Encounter (legacy)	EncounterEvent 8.7
ImagingReport (legacy)	ImagingReport - LabEvent 8.7
LaboratoryObservation (legacy)	LaboratoryObservation - LabEvent 8.7
TranscribeDocument (legacy)	TranscribeDocument - LabEvent 8.7

The Clinical Event Bus enables the health component responsible for storing patient data to publish events and describe the change in data in the form of Clinical Events. Other components connected to the bus can then monitor these event, and remain up-to-date with any change in patient data.

For the most part, the new clinical event models contain the same attributes as their matching legacy event models with only a few instances where legacy fields are not available. Refer to the following sections for field mappings:

- [Mapping from Encounter to EncounterEvent 8.7](#)
- [Mapping from ImagingReport to ImagingReport - LabEvent 8.7](#)
- [Mapping from LaboratoryObservation to LaboratoryObservation - LabEvent 8.7](#)
- [Mapping from TranscribeDocument to TranscribeDocument - LabEvent 8.7](#)

Rather than being mutable dictionary models, the clinical event models are created based on the structure of the underlying clinical event data and contains all fields stored by CDR. During processing, the clinical event models bypass Rhapsody when mapping an HL7 message to an XML event model, removing the need to implement mappings of HL7 messages to XML event model in Rhapsody. For CDR mappings of the HL7 message format to the clinical event model, refer to [Encounter Clinical Event Mapping](#) and [Laboratory Report Event](#) in the *Clinical Data Repository Administration Manual*.

These tables are too wide to print in PDF format. A printable version is available as an Excel spreadsheet. Click [here](#) to download the spreadsheet.

## Mapping from Encounter to EncounterEvent 8.7

Legacy Attribute	Legacy Data Type	Legacy HL7 segments	Current Attribute	Current Data Type	Current HL7 segments
Encounter Type	LOOKUP(encounter_lookup)	MSH-9 Message Type	encounter Type	LOOKUP(EncounterType)	PV1-2 Patient Class
PatientClasses	LOOKUP(patientclass_lookup)	PV1-2 Patient Class	encounter State.code	STRING	<a href="#">ADT State Validation</a>

Legacy Attribute	Legacy Data Type	Legacy HL7 segments	Current Attribute	Current Data Type	Current HL7 segments
Admission DateTime	DATE_TIME	PV1-44 Admit Date/Time	admitDateTime	DATE_TIME	PV1-44 Admit Date/Time
Discharge DateTime	DATE_TIME	PV1-45 Discharge Date/Time	dischargeDateTime	DATE_TIME	PV1-45 Discharge Date/Time
AdmitReason	LOOKUP(adminreason_lookup)	PV2-3 Admit Reason	admitReason	LOOKUP(com.orchestral.health.encounter.api_8_1.domain.AdmitReason)	PV2-3 Admit Reason
Discharge Disposition	LOOKUP(dischargedisposition_lookup)	PV1-36 Discharge Disposition	N/A	N/A	N/A
Location-PointOfCare	STRING	PV1-3 Assigned Patient Location	ward	LOOKUP(com.orchestral.health.encounter.api_8_1.domain.Ward)	PV1-3 Assigned Patient Location

## Mapping from ImagingReport to ImagingReport - LabEvent 8.7

Legacy Attribute	Legacy Data Type	Legacy HL7 segments	Current Attribute	Current Data Type	Current HL7 segments
Originating System	STRING	MSH-3 SendingApplication.UniversalID^SendingApplication.UniversalIDType	authoringApplication	String	MSH-3 SendingApplication.UniversalID only
PatientClasses	patientclasses_lookup	PV1-2 PatientClass	N/A	N/A	N/A
ReportName	STRING	OBR-4 UniversalServiceID	testCode	LaboratoryTest	OBR-4 UniversalServiceID
ReportType	STRING	OBR-4 UniversalServiceID	testCode	LaboratoryTest	OBR-4 UniversalServiceID

Legacy Attribute	Legacy Data Type	Legacy HL7 segments	Current Attribute	Current Data Type	Current HL7 segments
Observation DateTime	DATE_TIME	OBR-7 ObservationDateTime	collection StartDate Time	PartialDate	OBR-7 Observation DateTime
ResultsReported-StatusChangedDateTime	DATE_TIME	OBR-22 Results Rpt/Status Chng - Date/Time	reportedDateTime	PartialDate	OBR-22 Results Rpt/Status Chng - Date/Time
ReportStatus	reportstatus_lookup	OBR-25 Result Status	resultStatus	LaboratoryResultStatus	OBR-25 Result Status
Abnormality Indicator	abnormal_lookup	Picks up the most serious indicator from all OBX-8 AbnormalFlags	Abnormal Interpretation	LaboratoryInterpretation	First of OBX-8 AbnormalFlags
Diagnostics ServiceSectionID	Diagnostic ServSect_lookup	OBR-24 Diagnostic Serv Sect ID	reportType	String	OBR-24 Diagnostic Serv Sect ID
Location-PointOfCare	STRING	PV1-3 Assigned PatientLocation.PointOfCare	N/A	N/A	N/A

## Mapping from LaboratoryObservation to LaboratoryObservation - LabEvent 8.7

Legacy Attribute	Legacy Data Type	Legacy HL7 segments	Current Attribute	Current Data Type	Current HL7 segments
OriginatingSystem	STRING	MSH-3 SendingApplication.UniversalID^SendingApplication.UniversalIDType	authoring Application	String	MSH-3 SendingApplication.UniversalID only
PatientClass	Lookup (patientclass_lookup)	PV1-2 PatientClass	N/A	N/A	N/A

Legacy Attribute	Legacy Data Type	Legacy HL7 segments	Current Attribute	Current Data Type	Current HL7 segments
ReportName	STRING	OBR-4 UniversalServiceID	testCode	Lookup (com.orchestral.health.results.api_8_1.domain.LaboratoryTest)	OBR-4 UniversalServiceID
ReportType	STRING	OBR-4 UniversalServiceID	testCode	Lookup (com.orchestral.health.results.api_8_1.domain.LaboratoryTest)	OBR-4 UniversalServiceID
ObservationDateTime	DATE_TIME	OBR-7 ObservationDateTime	collectionStartDateTime	DATE_TIME	OBR-7 ObservationDateTime
ResultsReported-StatusChangedDateTime	DATE_TIME	OBR-22 Results Rpt/Status Chng - Date/Time	reportedDateTime	DATE_TIME	OBR-22 Results Rpt/Status Chng - Date/Time
ResultStatus	Lookup (reportstatus_lookup)	OBR-25 Result Status	resultStatus	Lookup (com.orchestral.health.results.api_8_1.domain.LaboratoryResultStatus)	OBR-25 Result Status
AbnormalityIndicator	Lookup (abnormal_lookup)	Picks up the most serious indicator from all OBX-8 AbnormalFlags	Abnormal Interpretation	Lookup (com.orchestral.health.results.api_8_1.domain.LaboratoryInterpretation)	First of OBX-8 Abnormal Flags
DiagnosticServiceSectionID	Lookup (DiagnosticServSect_lookup)	OBR-24 Diagnostic Serv Sect ID	service	STRING	OBR-24 Diagnostic Serv Sect ID
Location-PointofCare	STRING	PV1-3 Assigned PatientLocation.PointOfCare	N/A	N/A	
Tests.TestName	Lookup (laboratorytest_lookup)	OBX-3 Observation Identifier	results.testCode	com.orchestral.health.results.api_8_1.domain.LaboratoryTest	OBX-3 Observation Identifier

Legacy Attribute	Legacy Data Type	Legacy HL7 segments	Current Attribute	Current Data Type	Current HL7 segments
Tests.TestValue	Composite	OBX-5 Observation Value (more complicated processing, see Rhapsody mapping)	results.valueDataType results.value	String String	OBX-2 ValueType OBX-5 Observation Value
Tests.AbnormalFlag	Lookup (abnormal_lookup)	OBX-8 Abnormal Flags (each flag mapped to one Tests.AbnormalFlag)	results.principalInterpretation	Lookup (com.orchestral.health.results.api_8_1.domain.LaboratoryInterpretation)	First abnormal flag from OBX-8 Abnormal Flags

## Mapping from TranscribeDocument to TranscribeDocument - LabEvent 8.7

Legacy Attribute	Legacy Data Type	Legacy HL7 segments	Current Attribute	Current Data Type	Current HL7 segments
OriginatingSystem	STRING	MSH-3 SendingApplication.UniversalID^SendingApplication.UniversalIDType	authoringApplication	STRING	MSH-3 SendingApplication.UniversalID only
PatientClass	LOOKUP(patientclass_lookup)	PV1-2 PatientClass	N/A	N/A	N/A
ReportName	STRING	OBR-4 UniversalServiceID	testCode	LOOKUP(com.orchestral.health.results.api_8_1.domain.LaboratoryTest)	OBR-4 UniversalServiceID
ReportType	STRING	OBR-4 UniversalServiceID	testCode	LOOKUP(com.orchestral.health.results.api_8_1.domain.LaboratoryTest)	OBR-4 UniversalServiceID
ObservationDateTime	DATE_TIME	OBR-7 ObservationDateTime	collectionStartTime	DATE_TIME	OBR-7 ObservationDateTime



Legacy Attribute	Legacy Data Type	Legacy HL7 segments	Current Attribute	Current Data Type	Current HL7 segments
Results Reported-StatusChangedDateTime	DATE_TIME	OBR-22 Results Rpt/Status Chng - Date/Time	reportedDateTime	DATE_TIME	OBR-22 Results Rpt/Status Chng - Date/Time
ReportStatus	LOOKUP(reportstatus_lookup)	OBR-25 Result Status	resultStatus	LOOKUP(com.orchestral.health.results.api_8_1.domain.LaboratoryResultStatus)	OBR-25 Result Status
DiagnosticServiceSectionID	LOOKUP(DiagnosticServiceSection_lookup)	OBR-24 Diagnostic Serv Sect ID	reportType	STRING	OBR-24 Diagnostic Serv Sect ID
Location - PointOfCare	STRING	PV1-3 Assigned PatientLocation.PointOfCare	N/A	N/A	N/A

## Notifications Workflow Process

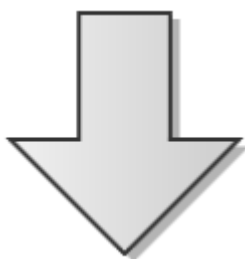
This section provides an overview of the Notifications workflow.

### The following workflow applies to Notifications with Clinical Event support:

1. A health component stores or changes a patient's data and publishes a clinical event describing the current status of this patient's data.
2. Notifications listens to all clinical events. If there is an Event Type configured for Clinical Event that was sent (refer to [Configuring Event Types](#) for details), the processing continues. Otherwise, the Clinical Event is ignored and processing of the Clinical Event stops here.
3. The Clinical Event is consecutively converted to all Event Types that are configured for it, and these Event Types are processed individually.

**The following workflow applies to Notifications without Clinical Event support (assumes patient-centric notifications):**

1. Notifications receives a trigger message from Rhapsody.
2. Notifications attempts to match the trigger message against the [Event Types](#) (based on their underlying Dictionary model) configured in Orion Health Platform. If there is no matching Event Type, processing stops here.
3. When an Event Type (based on its Dictionary model) matches the triggered message, the data is deserialized.



**The following workflow is common to Notifications with or without Clinical Event support:**

1. The patient referenced in the message is checked. The patient is looked up in the Identity Service and the patient summary in the message is updated accordingly. If the patient is not found using Identity Service, processing stops here.

This may be tested by using the **Identity Search** screens in Platform. You must search for both namespace and ID.

2. The message is matched against rules of all [Notifications](#) based on that particular Event Type.
3. The list of recipients of the notification is built from these sources:
  - The Relationship store is searched for people who have a relationship with the patient such as providers.
  - Additional recipients are extracted from the message using [Message Content Resolvers](#).
4. The list of matched recipients is pushed through the identity service to determine whether the system actually knows about the providers.
5. These recipients are pushed through Portal's privacy rules (entity privacy).

6. The subscription details of the recipients in the list are retrieved. Recipients without relevant subscriptions are ruled out at this point.
7. If there are any recipients left, Notifications generates a final notification message for each recipient using the delivery channel the recipient is subscribed to. The message is then passed to the delivery channel.
8. The delivery channel delivers the message. If the message is successfully delivered through the primary channel, only then it is sent to the secondary channels.

There are two types of delivery channels:

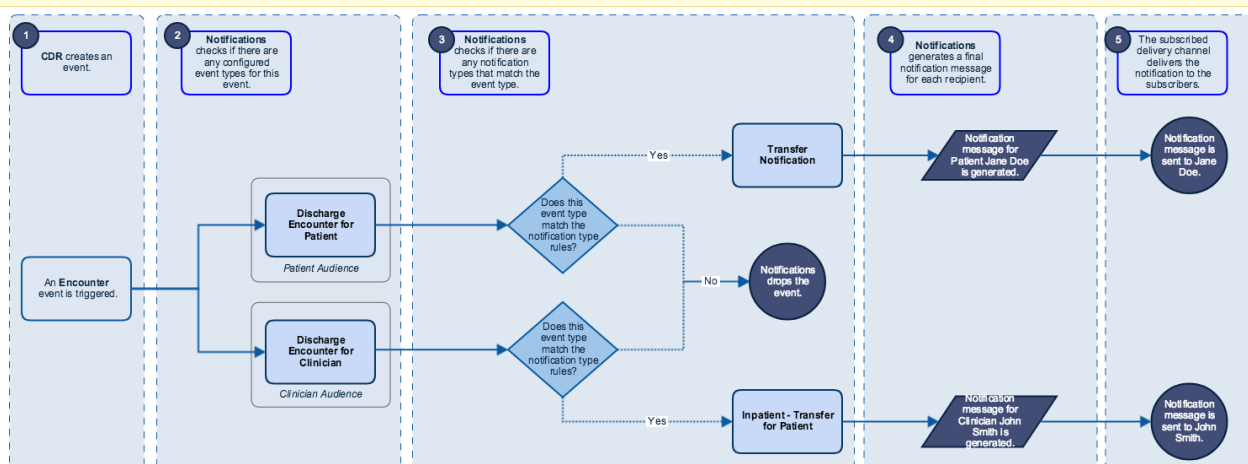
- Hard-wired such as an [SMTP channel](#)
- Those relying on Rhapsody to deliver the message

## Notifications Workflow of a Typed Clinical Event with Multiple Event Types

Notifications allows a recipient to subscribe to notifications within Clinical Portal. Depending on how the rules are configured, Notifications can send more than one notification message to different recipients.

The following diagram illustrates a sample typed clinical event and how notification messages are sent out to different recipients.

This diagram does not apply to XML-based events.



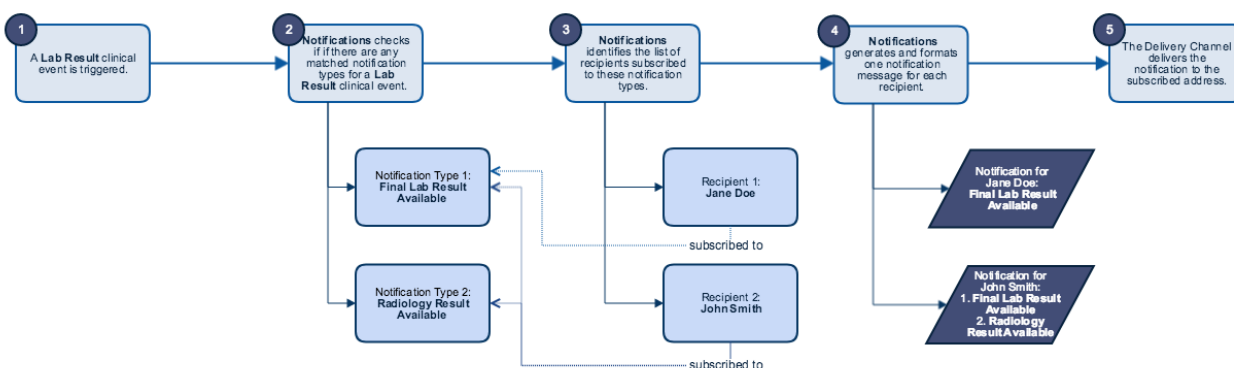
Workflow State	Description
1	An <i>Encounter</i> event is triggered.
2	<p>Notifications checks if there are any notification event types configured for the <i>Encounter</i> event.</p> <p>In this example, the following event types are configured for <i>Encounter</i> event:</p> <ul style="list-style-type: none"> <li>• <i>Discharge Encounter for Patient</i> - This event type is configured for the <i>Patient</i> audience.</li> <li>• <i>Discharge Encounter for Clinician</i> - This event type is configured for the <i>Clinician</i> audience.</li> </ul> <p>Audiences groups event types for different sets of users such as clinicians, patients, and administrators. Refer to <a href="#">Configuring Audiences</a> for details.</p>
3	<p>Notifications checks if there are any notification types that match the event type. Notifications evaluates the rules against <i>Discharge Encounter for Patient</i> and <i>Discharge Encounter for Clinician</i> event types to resolve the notification types that match the event.</p> <ul style="list-style-type: none"> <li>• <i>Transfer Notification</i> - Notifications matches the notification rules for <i>Transfer Notification</i> notification type.</li> <li>• <i>Inpatient Transfer for Patient</i> - Notifications matches the notification rules for <i>Inpatient Transfer for Patient</i> notification type.</li> </ul> <p>For a notification to be triggered, all criteria in the notification rules must be met. It is therefore important that the notification rule must contain complete and specific conditions so correct notifications are triggered as events occur. Refer to <a href="#">Configuring Notifications</a> for details.</p>
4	<p>Notifications identifies the recipients who are subscribed to these notification types. Notifications then generates the notification message for each recipient.</p> <p>In this example, there are two subscribers identified to receive these event types:</p> <ul style="list-style-type: none"> <li>• Recipient 1: Notification message for Patient <i>Jane Doe</i> is generated.</li> <li>• Recipient 2: Notification message for Clinician <i>John Smith</i> is generated.</li> </ul> <p>Notification messages vary depending on how the message formats are configured using the Template Processor. Refer to <a href="#">Template Processor Format Examples</a> for details.</p>

Workflow State	Description
5	<p>The subscribed delivery channel delivers the notification messages to the recipients.</p> <ul style="list-style-type: none"> <li>Recipient 1: Notification message is sent to Patient <i>Jane Doe</i>.</li> <li>Recipient 2: Notification message is sent to Clinician <i>John Smith</i>.</li> </ul>

## Notifications Workflow of an Event with Multiple Notification Types

Notifications allows a recipient to subscribe to notifications within Clinical Portal. Depending on how the rules are configured, a clinical event can trigger multiple notification types. Each recipient receives one notification message, containing details of one or more notification types.

The following diagram illustrates a sample clinical event which matches multiple notification types:



Workflow State	Description
1	A <i>Lab Result</i> clinical event is triggered.
2	<p>Notifications checks if there are any notification types configured for the <i>Lab Result</i> clinical event. Notifications evaluates the notification rules against <i>Lab Result</i> to resolve the notification types that match the event.</p> <p>In this example, the <i>Lab Result</i> clinical event matches the following notification types:</p> <ul style="list-style-type: none"> <li><i>Final Lab Result Available</i></li> <li><i>Radiology Result Available</i></li> </ul>

Workflow State	Description
	<p>The notification rules configured for each notification determine when the notification should trigger. A notification rule is made up of one or more rule sets, and rule sets are made up of one or more rule conditions. Refer to <a href="#">Configuring Notifications</a> for details.</p>
3	<p>Notifications identifies the list of recipients subscribed to these event types. In this example, there are two subscribers identified to receive these event types:</p> <ul style="list-style-type: none"> <li>Recipient 1: <i>Jane Doe</i> is subscribed to <i>Final Lab Result Available</i> notification type.</li> <li>Recipient 2: <i>John Smith</i> is subscribed to <i>Final Lab Result Available</i> and <i>Radiology Result Available</i> notification types.</li> </ul>
4	<p>Notifications retrieves the subscription details and then generates the notification message for each recipient. In this example, the following notifications are generated for the following recipients based on the notification rules configured:</p> <ul style="list-style-type: none"> <li>Recipient 1: A notification is generated for <i>Jane Doe</i> containing the <i>Final Lab Result Available</i> notification.</li> <li>Recipient 2: A notification is generated for <i>John Smith</i> containing the <i>Final Lab Result Available</i> and <i>Radiology Result Available</i> notifications.</li> </ul> <p><i>Jane Doe</i> who is subscribed only to <i>Final Lab Event Result Available</i> receives one notification message containing information about the <i>Final Lab Result Available</i> notification type. <i>John Smith</i> who is subscribed to both <i>Final Lab Result Available</i> and <i>Radiology Result Available</i> receives one notification message containing information about the two notification types. When Notifications generates the notification message, it will generate the message based on the user's subscription and the detailed message configuration of the event.</p> <p>Refer to <a href="#">Configuring Event Types</a> for details.</p> <ul style="list-style-type: none"> <li>For a notification to be generated, all criteria in the notification rule must be met. It is therefore important that the notification rule must contain complete and specific conditions so correct notifications are triggered as events occur.</li> <li>Notification messages vary depending on how the message formats are configured using the Template Processor. Refer to <a href="#">Template Processor Format Examples</a> for details.</li> </ul>

Workflow State	Description
5	<p>The selected delivery channel delivers the notifications to the recipients.</p> <p>The administrator can configure the delivery channels that Notifications supports. Refer to <a href="#">Configuring Notification Delivery Channels</a> for details.</p> <p>The notification message has the following types:</p> <ul style="list-style-type: none"> <li>• A secure message usually contains all the relevant patient information of the notification, and must be delivered by a secure method. When sending notifications through a secure delivery channel, the message will contain all data available in the original event. Refer to <a href="#">Secure Message</a> for details.</li> <li>• A non-secure message does not contain any patient information and is delivered by a non-secure method. Refer to <a href="#">Non-Secure Message</a> for details.</li> </ul>

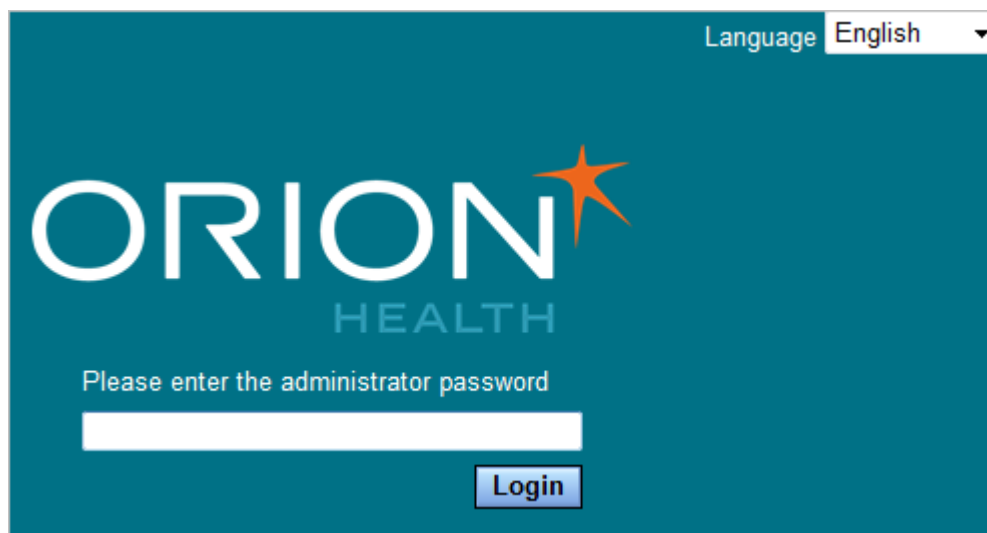
## Accessing Orion Health Platform

Administering and configuring Notifications is carried out in Orion Health Platform.

1. Enter the URL, `http://<server>:<port>/conductor`, in your browser.

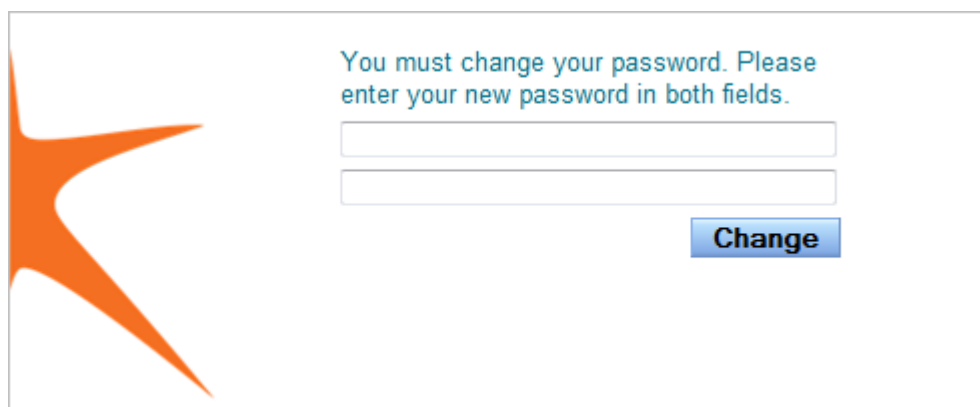
You can look up the port number in the `<HIE_HOME>/data/configuration/environment.properties` file, `tomcat.port.http` property. Notifications is installed as a component of Orion Health™ Health Information Exchange (HIE).

2. If you are logging on for the first time, select the **Login** button to set a password.



The screenshot shows the Orion Health login interface. At the top right, there is a 'Language' dropdown menu set to 'English'. The main header features the 'ORION HEALTH' logo. Below the logo, the text 'Please enter the administrator password' is displayed above a white input field. A blue 'Login' button is positioned below the input field.

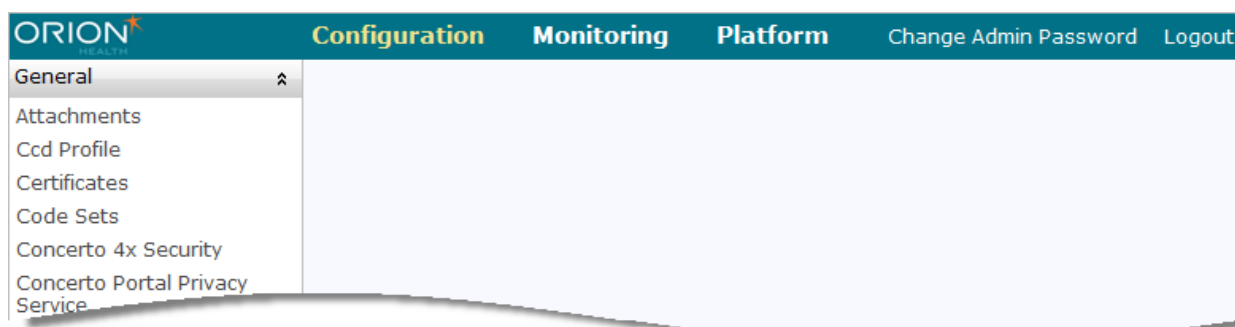
3. Enter your new password twice, then select the **Change** button.



The screenshot shows the Orion Health password change interface. On the left is a large orange star logo. The main text reads: 'You must change your password. Please enter your new password in both fields.' Below this text are two white input fields for the new password. A blue 'Change' button is located at the bottom right of the form.

The following screen is displayed:





4. The Orion Health Platform **Configuration**, **Monitoring**, and **Platform** menus are then available for use.

## Integration with Providers in Clinical Portal

Notifications can integrate with providers in Clinical Portal by loading provider information from Clinical Portal through the Identity service.

The integration with providers in Clinical Portal includes the following:

- Configuring Group Attributes with External Identifiers
- Updating User Details


### Configuring Group Attributes with External Identifiers





All providers addressing the information that Notifications uses are stored in Clinical Portal Group Attributes. When Notifications retrieves a provider from Clinical Portal through the Identity Service, these external identifier attributes can be retrieved as well. Refer to [Creating or Deleting a Delivery Channel](#) for details.

### Updating User Details

An administrator can update Notifications details for any user in Clinical Portal, including any external identifier that has been configured.

### Adding an External Identifier in Clinical Portal

1. Log in to Clinical Portal as an administrator.
2. Navigate to **Concerto > Configuration** and select the **Identity** tab to check whether an identifier has been added.  
A list of available external identifiers is displayed.
3. To add an external identifier, enter the name of the external identifier at the bottom of the panel and select the **Add** icon .

General	Security	CCOW	Mail	LDAP	Message Drivers	Logout Dialog	Disclaimers	Identity	About
<b>External Identifier Types</b>									
<b>Name</b>		<b>Display Name</b>							
 Enterprise ID		Enterprise ID							
 HealthPort ID		HealthPort ID							
 SSO ID		SSO ID							
 <input type="text"/>									

## Adding an External Identifier to the Notifications User Details

1. From Clinical Portal, navigate to **Concerto > Users**.
2. Select the user whose details you want to update. The **User External Identifiers** panel is at the bottom of the **User Details** screen.
3. Select the external identifier type from the drop-down list.
4. Enter the user ID number to update the user details to include an external identifier.

**User External Identifiers**

External Identifier Type	Value
<div>+</div> <div>HealthPort ID ▼</div>	<input type="text"/>

## Configuration

Refer to the following sections to configure Notifications:

- [Adding Users to Notifications Group](#)
- [Configuring Document Exchange](#)
- [Configuring Event Types](#)
- [Configuring Notification Delivery Channels](#)
- [Configuring Notification Messages](#)
- [Configuring Notifications](#)
- [Configuring Relationship Types](#)
- [Default Subscription Configurations](#)
- [Configuring a Message Content Resolver](#)
- [Configuring the Clinical Portal User Identity Source](#)
- [Configuring Messaging](#)
- [Configure Web Services](#)
- [Configuring Integration Views](#)
- [Configuring the My Subscriptions and User Subscription Entry Points](#)
- [Configuring Audiences](#)
- [Exporting and Importing Configuration Files](#)
- [Configuring Metrics for Notifications](#)
- [Configuring Communicate Webmail for Notifications](#)

## Adding Users to Notifications Group

When installing the HIE system components, the **Clinicians** and **Notifications** groups are added. This step involves adding existing users to these groups so they can access the notifications and subscriptions functionality.

1. From Clinical Portal, navigate to **Concerto > Users**. The **Concerto User Search** screen is displayed, as shown in the following screenshot:

**Concerto User Search**

User ID:  Member of:

Full Name: First Name(s)  Last Name  E-mail:

Show Deleted Users: ☒ No ☐ Yes

**Search** Add | Reset  Enter a new favorite search +

	User ID	Full Name	E-mail	Description
	NwHIN-external-user			This user represents a user accessing the system through the NwHIN external services.
	admin	Administrator, Concerto		Initial login for the Concerto administrator.
	clinician	Clinician, Example		An example Clinician user in Concerto.
	rdec	Clerical, RDE		RDE Clerical USER
	rded	Dr, rded	<a href="mailto:jacques.beukes@orionhealth.com">jacques.beukes@orionhealth.com</a>	RDE Doctor user
	rden	Nurse, RDE		RDE Nurse User
	services			System user used for auditing web services and public services.
	webservice			

[Printer Friendly Version](#)

This screen displays the users that are set up during the installation of the core system components. By default, this list includes the administrator only.

2. Select the first user you want to add to the HIE Groups. The **User Details** screen is displayed, as shown in the following screenshot:

**admin Concerto Administrator** 15:14 26-7

### User Details

Username: **admin**

Authentication: ☐ Use external (Windows NT/LDAP) password ☒ Use Clinical Portal password

Password Policy: **Default Policy** ☐ Force password change on next login [Reset Password](#)

Inactivity Logout:

User Type: **Normal** **Shared**

Account Policy: **Default Policy** [Configure](#)

Language: English

Start Screen:

[Update Preferences](#) [Discard Changes](#)

#### Role Memberships

Roles user performs:

Roles user does not perform:

Administrators

RDE Clerical

RDE Doctor

RDE Nurse

#### Group Memberships

Member of:

Not a member of:

Administrators

Users

Records Administrators

Allergies & Alerts

Clinician Homebase

#### Users

Description:  Initial login for the Concerto administrator.

E-mail:

Full Name:  First Name(s)  Last Name

#### User External Identifiers

External Identifier Type:

Value:

[Update Preferences](#) [Discard Changes](#)

- From the **Group Memberships** panel, select **Notifications** In the **Not a member of** column.
- Select the **Left Arrow** icon . The Notifications group is listed in the **Member Of** column.
- Select the **Update Preferences** button.
- Repeat these steps until users are added to the **Notifications** groups.

## Configuring Document Exchange

Document Exchange enables the transfer of documents to Electronic Medical Records (EMRs).

Complete the following tasks to enable document exchange:

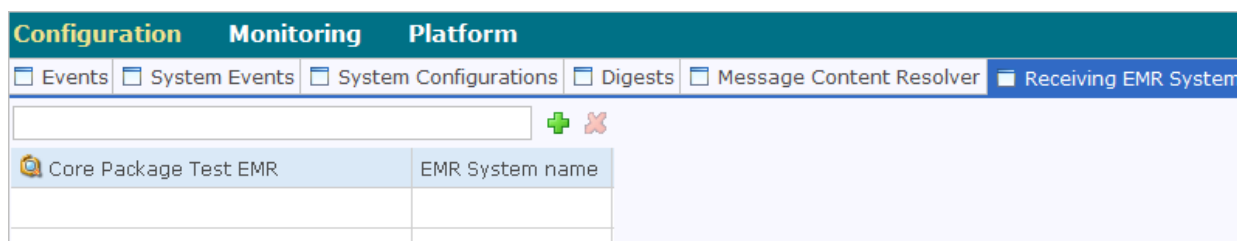
- [Configure Document Types](#)
- [Configure Automated Document Exchange](#)
- [Configure Manual Document Exchange](#)

## Configuring EMR Systems

Notifications allows a health care provider to specify an Electronic Medical Record (EMR), where Notifications and event details are sent to. The administrator can configure multiple EMR systems and the document types it support.

To configure an EMR system with a unique Id (OID), name, and the document types it supports, do the following:

1. From Orion Health Platform, navigate to **Configuration > Notifications** and select **Notifications (Advanced)** from the left panel.
2. Select the **Receiving EMR System** tab to display the EMR systems panel, as shown in the following screenshot:




3. Complete configuring the EMR systems, as described in the following:
  - o [Adding and Deleting EMR Systems](#)
  - o [Modifying EMR Systems](#)

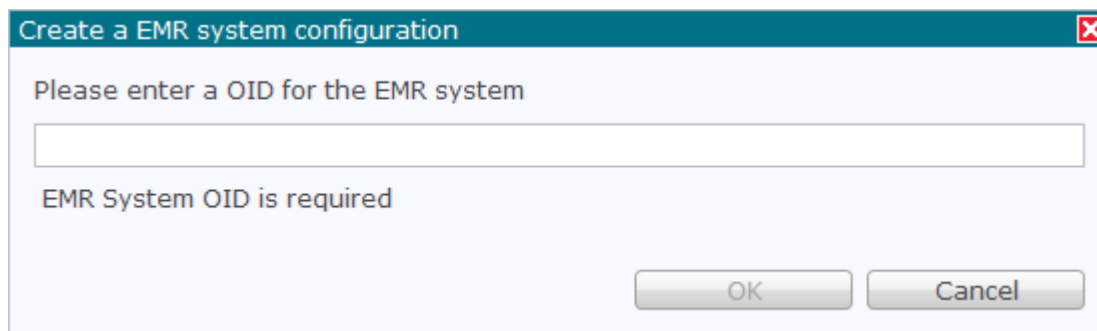
Altering EMR configuration details (other than Display Names) almost always requires matching alterations to the Rhapsody configuration. Refer to [EMR Integration with Rhapsody](#) for details.

### Adding and Deleting EMR Systems

Notifications allows a health care provider to specify an EMR where Notifications and Event Details are sent to.

#### Adding an EMR System

1. From Orion Health Platform, navigate to **Configuration > Notifications (Advanced)**.
2. Select the **Add** icon  and select **New EMR System name** from the drop-down list. This opens a **Create an EMR system configuration** dialog box.



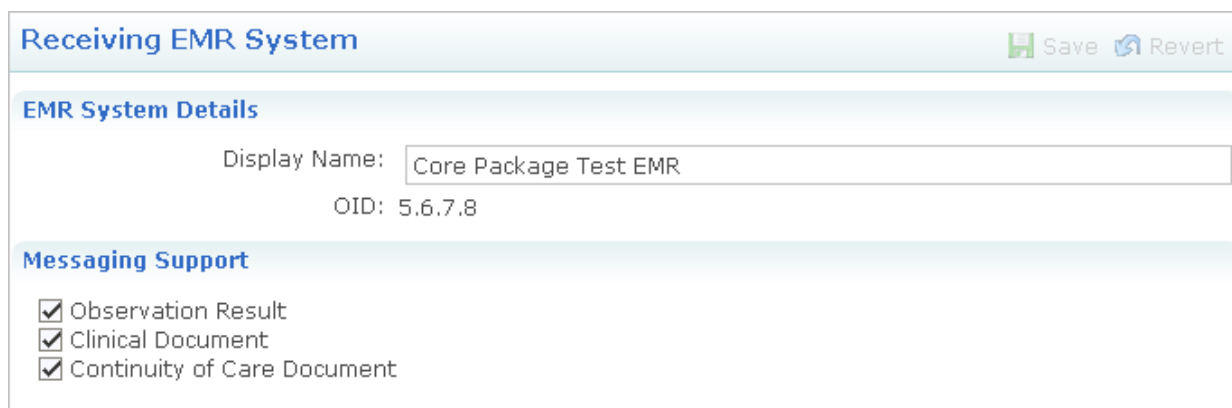
**Create a EMR system configuration**

Please enter a OID for the EMR system

EMR System OID is required

OK Cancel

- Enter a unique Id (OID) for the new EMR system, and select the **OK** button to add the EMR system.  
This displays the **EMR System Details** panel.



**Receiving EMR System** Save Revert

**EMR System Details**

Display Name:

OID: 5.6.7.8

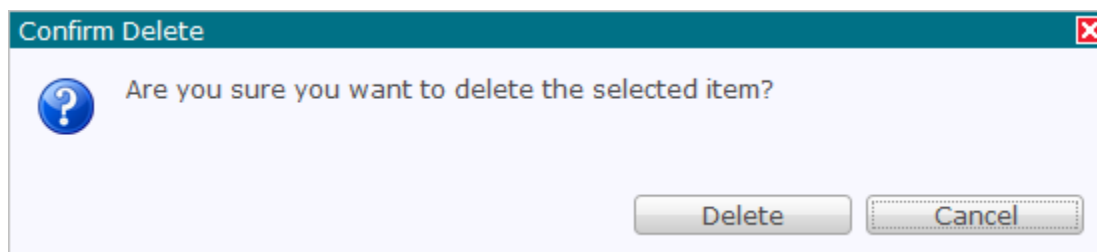
**Messaging Support**

- ☒ Observation Result
- ☒ Clinical Document
- ☒ Continuity of Care Document


- Enter the name of the EMR in the **Display Name** field.
- Select the document types the EMR system supports by selecting the checkbox in the **Messaging Support** list. Refer to [Configuring Document Types](#) for details.
- Select the **Save** button to save the EMR System details.

### Deleting an EMR System

- Select the EMR system and select the **Delete** icon . This opens the **Confirm Delete** dialog box.



**Confirm Delete**

 Are you sure you want to delete the selected item?

Delete Cancel

- Select the **Delete** button to delete the EMR system.



## Modifying EMR Systems

Notifications allows a health care provider to specify an EMR where Notifications and Event Details are sent to.

1. From Orion Health Platform, navigate to **Configuration > Notifications (Advanced)**. This displays the **Receiving EMR System** tab with EMR systems listed in the left pane, as shown in the following screenshot:

Configuration   Monitoring   Platform	
<input type="checkbox"/> Events <input type="checkbox"/> System Events <input type="checkbox"/> System Configurations <input type="checkbox"/> Digests <input type="checkbox"/> Message Content Resolver <input checked="" type="checkbox"/> Receiving EMR System	
Core Package Test EMR	EMR System name

2. Select the name of the EMR system to display details of the EMR system in the right pane, as shown in the following screenshot:

**Receiving EMR System** Save Revert

**EMR System Details**

Display Name:

OID: 5.6.7.8

**Messaging Support**

☒ Observation Result  
☒ Clinical Document  
☒ Continuity of Care Document

This screen has two sections:

- **EMR System Details** - This allows you to update the **Display Name** field to rename the EMR System.
  - **Messaging Support** - This allows you to select the document types the EMR system supports.
3. Select the **Save** button to save the changes to the EMR system.

## Configuring Document Types

From the **Notifications (Advanced)** page, you can configure Document Types and the Document Generator in the **Document Types** tab.

Document Types and Document Generator are necessary when exchanging documents from Notifications to the Electronic Medical Record (EMR) system. Document Types are

supported by the receiving EMR system. When a Notification is triggered, Document Types are validated in the [Notifications Rhapsody Routes](#) and handled accordingly by the route configuration.


Complete the following tasks to configure document types and enable document exchange:

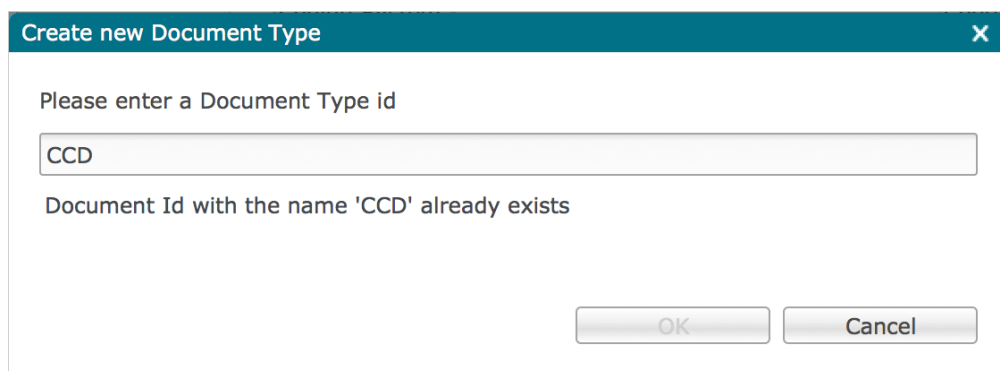
1. [Adding Document Types](#)
2. [Adding Document Generators](#)
3. [Associating Document Types to EMRs](#)

## Adding Document Types

Document Types help you define the available documents. Notifications supports Observation Result (ORU) and Continuity of Care (CCD) document types. Adding format code configuration is a part of adding Document Types. A format code determines the document type.

### Adding Document Types

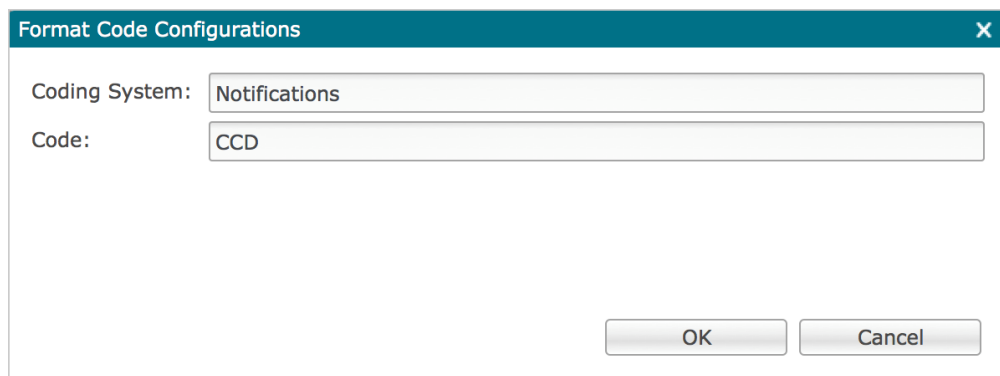
1. From Orion Health Platform, navigate to **Configuration > Notifications**.
2. Select **Notifications (Advanced)** from the left panel.
3. Select the **Document Types** tab.
4. Select the **Add** icon .
5. Select **New Document Type** from the list.
6. Enter a unique document type ID in the **Document Type ID** field.




7. Enter a unique document type name in the **Document Type Name** field. For example, enter *Continuity of Care Document*.
8. Select the **OK** button.

### Adding Format Code Configuration


1. Select the **Add** button from the **Format Code Configurations** section.

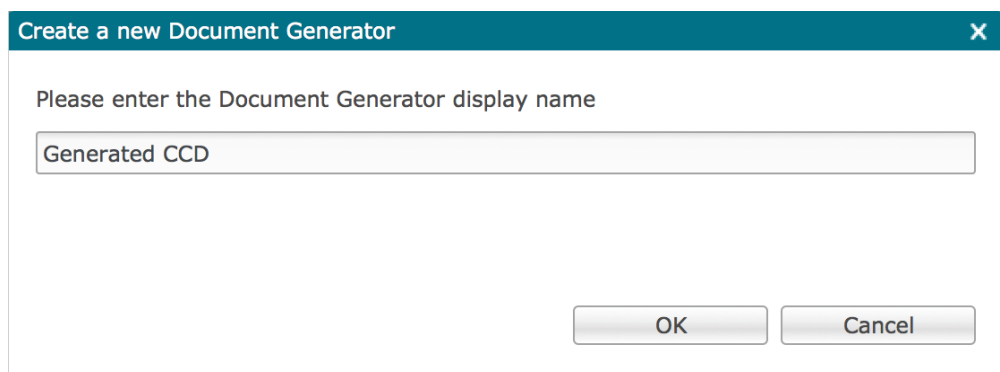


The dialog box is titled "Format Code Configurations" with a close button (X) in the top right corner. It contains two text input fields: "Coding System:" with the value "Notifications" and "Code:" with the value "CCD". At the bottom right, there are two buttons: "OK" and "Cancel".


2. Enter the name for the coding system and code in the **Format Code Configurations** dialog box. For example, enter `Notifications` and `CCD`.
3. Select the **OK** button.
4. Select the **Save** icon .

## Adding Document Generators

1. From Orion Health Platform, navigate to **Configuration > Notifications** and select **Notifications (Advanced)** from the left panel.
2. Select the **Document Types** tab. The **Document Type** panel is displayed.
3. Select the **Add** icon  and select **New Document Generator**.
4. Enter the document generator name in the **Create a new Document Generator** dialog box. For example, enter `Generated CCD`.




The dialog box is titled "Create a new Document Generator" with a close button (X) in the top right corner. It contains a text input field with the placeholder text "Please enter the Document Generator display name" and the value "Generated CCD". At the bottom right, there are two buttons: "OK" and "Cancel".

5. Select the **OK** button.
6. Enter a unique document generator repository name in the **Document Generator Repository Name** field.  
This name must match the name of an existing document generator repository name.  
For example, `CCD Generator Document Repository`.
7. Select the **Save** icon .

Do not generate documents one after the other using the Document Generator because the time taken to generate multiple documents may delay the corresponding Notifications.

## Associating Document Types to EMRs

To receive the documents, select the document types and the Electronic Medical Record (EMR) system where you want to receive the documents.

1. From Orion Health Platform, navigate to **Notifications > Notifications (Advanced) > Receiving EMR System** and select an appropriate **EMR System name**.
2. Select the checkbox next to the **Document Type** you have created for the receiving EMR system.
3. Select the **Save** icon .

## Configuring Automated Document Exchange

Automated Document Exchange enables the transfer of documents to Electronic Medical Records (EMRs).

To set up the Automated Document Exchange feature, you need to do the following:

- [Set up the Prerequisite Features](#).
- [Configure Rhapsody Routes for Automated Document Exchange](#).
- [Configure Notifications to Exchange Documents](#).
- [Select the Send Associated Document To My EMR Option](#).
- [Check if the Automated Document Exchange is Working Correctly](#).

## Setting up the Prerequisite Features

For the automated document exchange to work, you must set up other Orion Health HIE features.

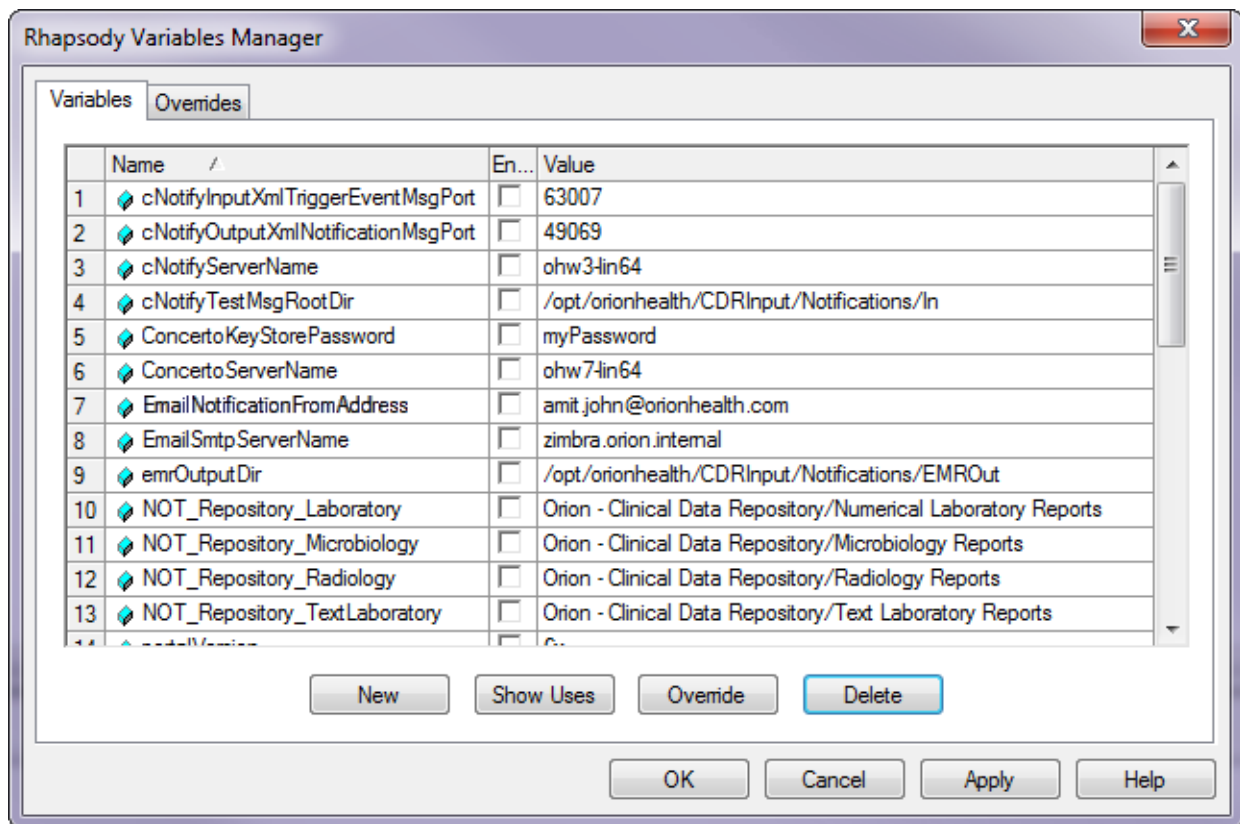
If you have not done so, you must set up CCDs. Refer to [Generating and Sending CCDs](#) in the *HIE Administration Manual* for details.

You must also have configured some notifications. Refer to [Configuring Notifications](#) for details.

## Configuring Rhapsody Routes for Automated Document Exchange

1. From the administration workstation, launch the Rhapsody IDE application. The initial screen is displayed.

2. Navigate to **View > Rhapsody Variables Manager** to display the **Rhapsody Variables Manager** screen.



3. Configure the variables as shown in the following table:

Name	Value
ConcertoKeyStorePassword	myPassword
ConcertoServerName	For example, ohw7-lin64
ConcertoServerName_Portal7	For example, ohw14-lin64
EmailNotificationFromAddress	For example, john.doe@orionhealth.com
EmailSmtplibServerName	For example, zimbra.orion.internal
NOT_Repository_Laboratory	Orion - Clinical Data Repository/Numerical Laboratory Reports
NOT_Repository_Microbiology	Orion - Clinical Data Repository/Microbiology Reports
NOT_Repository_Radiology	Orion - Clinical Data Repository/Radiology Reports

Name	Value
NOT_Repository_TextLaboratory	Orion - Clinical Data Repository/Text Laboratory Reports
NOT_ConcertoServerName_Portal7	For example, <HostName>:<Port>/node1.
NOT_emrOutputDir	For example, /opt/orionhealth/CDRInput/Notifications/EmrOutput
NOT_TestMsgRootDir	For example, /opt/orionhealth/CDRInput/Notifications/TriggerMessageInput
NOT_CDROriginalMessageOutboundPort	For example, 63069.
NOT_ConcertoKeyStorePassword	For example, myPassword.
NOT_ConcertoServerName	
NOT_DirectDocumentEmailBody	Please find your document attached.
NOT_DirectDocumentEmailSubject	Document attached.
NOT_DirectEmailNotificationFromAddress	For example, direct@vld.com.
NOT_DirectEmailSmtplibServerName	For example, zimbra.orion.internal.
NOT_DirectEmailSmtplibServerPassword	
NOT_DirectEmailSmtplibServerUserName	
NOT_EmailNotificationFromAddress	For example, <name>.<surname>@orionhealth.com.
NOT_EmailSmtplibServerName	For example, zimbra.orion.internal.
NOT_InputXmlTriggerEventMsgPort	For example, 63007.
NOT_messageProcessingId	For example, P.
NOT_OutputXmlNotificationMsgAsyncPort	For example, 63009.
NOT_OutputXmlNotificationMsgPort	For example, 63008.
NOT_portalVersion	For example, 7.
NOT_receivingFacilityNamespaceId	For example, any.
NOT_receivingFacilityUniversalId	

Name	Value
NOT_receivingFacilityUniversalIdType	
NOT_RhapsodyEventEmailFromAddress	For example, rhapsody@orionhealth.com.
NOT_RhapsodyEventEmailToAddress	For example, rhapsody@orionhealth.com.
NOT_sendingApplicationNamespaceId	For example, Rhapsody.
NOT_sendingApplicationUniversalId	
NOT_sendingApplicationUniversalIdType	
NOT_sendingFacilityNamespaceId	
NOT_sendingFacilityUniversalId	
NOT_sendingFacilityUniversalIdType	
NOT_ServerName	
Portal Version	6x 7

4. Select the **OK** button.
5. To enable the UserMessaging service in Orion Health Platform, navigate to **Configuration > Web Services**. Select the **usermessagingservice** and set **Enabled** to `true`.
6. Start the **Notification** and **Site Specific - Notifications** components.

Refer to [Notifications Rhapsody Routes](#) for additional details.

When using **Send to EMR** feature, you will need to configure it. Refer to [Configuring the Send to EMR Function](#) and [Customizing the Send to EMR Function](#) for details.

## Configuring Notifications to Exchange Documents

This task is required to configure Notifications to exchange documents.

Electronic Medical Records (EMRs) can only exchange its supported types of documents. These are configured when you are adding an EMR. Refer to [Adding Electronic Medical Records](#) for details.

You can check which document types an EMR is set up to receive in Orion Health Platform by navigating to **Configuration > Notifications > Notifications (Advanced) > Receiving EMR System** tab.

Configure a notification type by following the instructions in [Configuring Notifications](#). In the **Document to Exchange** field, specify the types of document to be exchanged.

## Selecting the Send Associated Document To My EMR Option

For the Automated Document Exchange to work, the clinician must select the **Send Associated Document to my EMR** option for the relevant notifications.


1. Log in to Clinical Portal as the clinician, and navigate to **Notifications > My Subscriptions** to display the **Subscriptions** screen.

**Subscriptions for patients I have a relationship with**

<input checked="" type="checkbox"/> Notification	Delivery Options
<input checked="" type="checkbox"/> Clinic Appointment Completed	Custom <a href="#">Change</a>
<input checked="" type="checkbox"/> Inpatient Admission	<input checked="" type="checkbox"/> Notify By Concerto User Messaging <input type="checkbox"/> Notify By Direct <input type="checkbox"/> Notify By Email <input checked="" type="checkbox"/> Notify in Daily Summary Email <input type="checkbox"/> Notify in Daily Summary Concerto User Messaging <input checked="" type="checkbox"/> Send associated document to My EMR <input type="button" value="OK"/> <input type="button" value="Use Defaults"/>
<input checked="" type="checkbox"/> Inpatient Discharge	Custom <a href="#">Change</a>
<input checked="" type="checkbox"/> Patient is admitted to ER	Custom <a href="#">Change</a>
<input checked="" type="checkbox"/> Patient is discharged from ER	Custom <a href="#">Change</a>
<input checked="" type="checkbox"/> A new document (imaging report) is available	Custom <a href="#">Change</a>
<input checked="" type="checkbox"/> Final Radiology Report is available	Custom <a href="#">Change</a>
<input checked="" type="checkbox"/> Final Laboratory Result is available	Custom <a href="#">Change</a>
<input checked="" type="checkbox"/> Final Microbiology Result available	Custom <a href="#">Change</a>
<input checked="" type="checkbox"/> Interim Microbiology Result available	Custom <a href="#">Change</a>
<input checked="" type="checkbox"/> A new document is available	Custom <a href="#">Change</a>

2. Select the **Change** link on the specific notification you want to update and select the **Send associated document to My EMR** checkbox.



This option is available only for notifications configured to support Automated Document Exchange. These notifications display the  icon.

3. Select the **Save** button.

## Checking if Automated Document Exchange is Working Correctly

To check whether the HIE feature is working correctly, Orion Health recommends you to complete the following steps:

- Specify how you want to receive patient updates; refer to [Subscribing to Notifications](#) for details. Select the **Send any associated document to My EMR** and **Send any associated document to Direct** options in the **By Default** section.
- Specify the patient updates you want to receive; refer to [Subscribing to Notifications](#) for details. Select at least one information type.
- Ensure an update of the selected type is generated, and check if is sent to the specified Electronic Medical Record (EMR) or secure channel, for example **Direct**.

## Configuring Manual Document Exchange

Complete the following to configure manual document exchange:

- [Configuring EMR Systems](#)

## Configuring the Send to EMR Function

This section describes how to set up the system to send results to Electronic Medical Records (EMRs).

To set up Send to EMR for Results:

1. Complete the following steps, referring to the *HIE Administration Manual*:
  - a. [Configure EMRs for Results](#).
  - b. [Create Adhoc Database Pointing to Results](#).
  - c. [Create Document Repositories for Results](#).
  - d. [Configure Document Repositories for Results](#).
2. When the prerequisite steps are completed, merge the `SendToEMR.c6x.xml` merge file. Refer to [Download, Edit and Merge SendToEMR.c6x.xml File](#) for details.
3. Orion Health strongly recommends you to make sure the **Send to EMR** functionality is working correctly. Refer to [Check Results are being Sent](#) in the *HIE Administration Manual* for details.

In addition to these configuration tasks, you can also customize the **Send to EMR** feature. Refer to [Customizing the Send to EMR Function](#) for details.

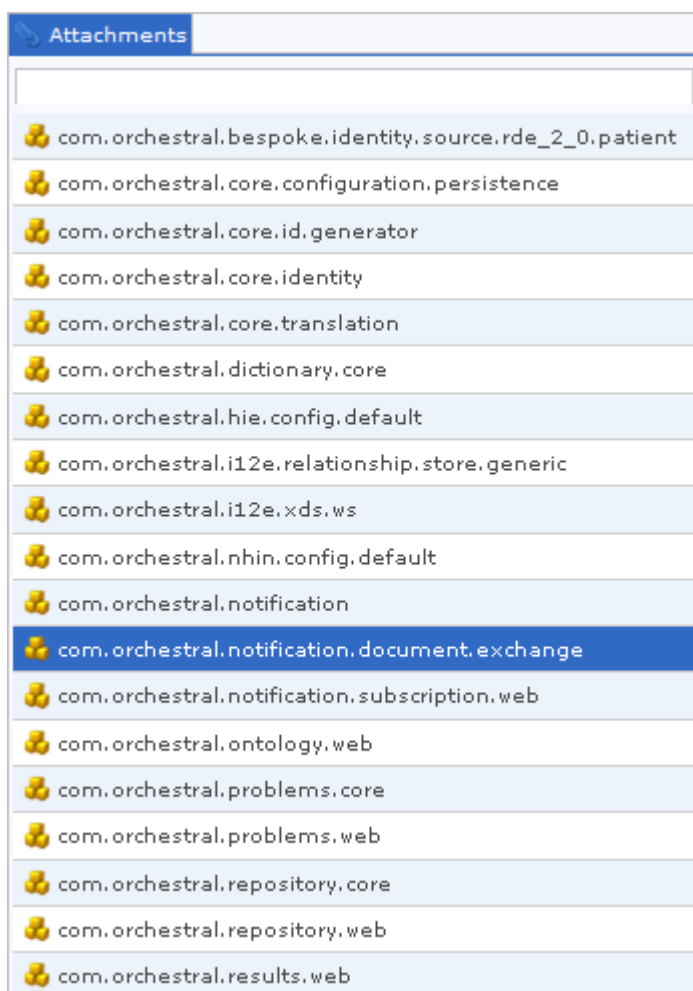
## Enabling the SendToEMR Function in Clinical Portal

This task enables the **Send to EMR** function in Clinical Portal by downloading, editing and merging the `SendtoEMR.c6x.xml` file.

To download, edit, and merge the `SendtoEMR.c6x.xml` file:

1. Download the file:


- a. From Orion Health Platform, navigate to **Attachments** to display the **Attachments** tab.







- b. Select the `com.orchestral.notification.document.exchange` module to display the **Module** panel for this module on the right:


Module

Attachments Details

Module Name: com.orchestral.notification.document.exchange  
Module Version: 6.5.0  
Number of Attachments: 2  
 [Download All Attachments](#)

Attachment

 Concerto Portal Merge Files (text/portal-merge)  
 Send To EMR  
 Concerto Portal Merge Files (text/portal-merge)  
 Send To Direct

 [Download Selected](#)

c. In the **Attachment** panel, select the **Send To EMR** attachment under Concerto Portal Merge Files (text/portal-merge).

d. Select the **Download Selected** link to download and save the file.

2. Edit the file:

a. Open the `SendToEmr.c6x.xml` file in a text editor, for example Notepad.

b. Edit the file by specifying your system information as described in the following table:

Existing String	Enter This Information:
ENTER APPLICATION NAME HERE	This refers to the name of the application that contains your document repository.
ENTER DOCUMENT REPOSITORY NAME HERE	This refers to the name of your document repository.

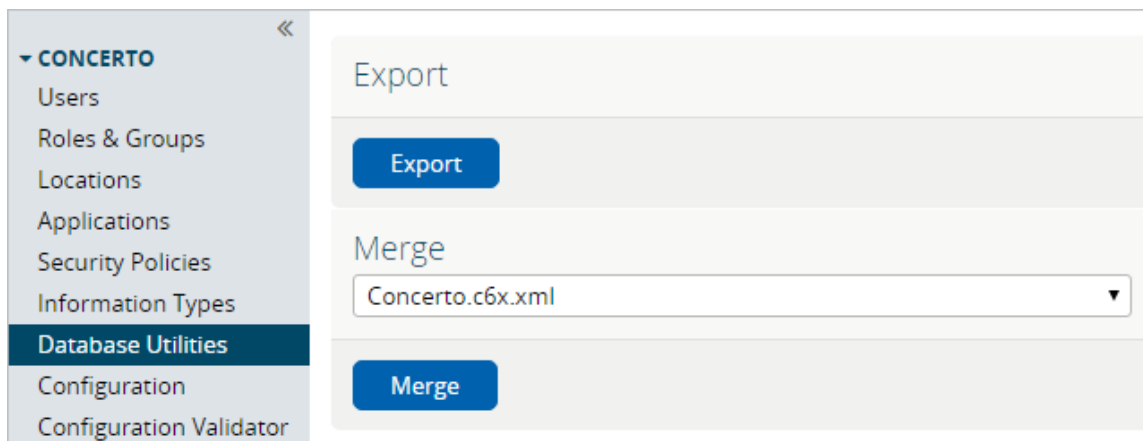
c. Save the updated file.

3. Transfer the file from your desktop to the `merge` subdirectory on the Clinical Portal Application Server, for example `../<PortalInstallationDirectory>/merge`.

4. Merge the file:

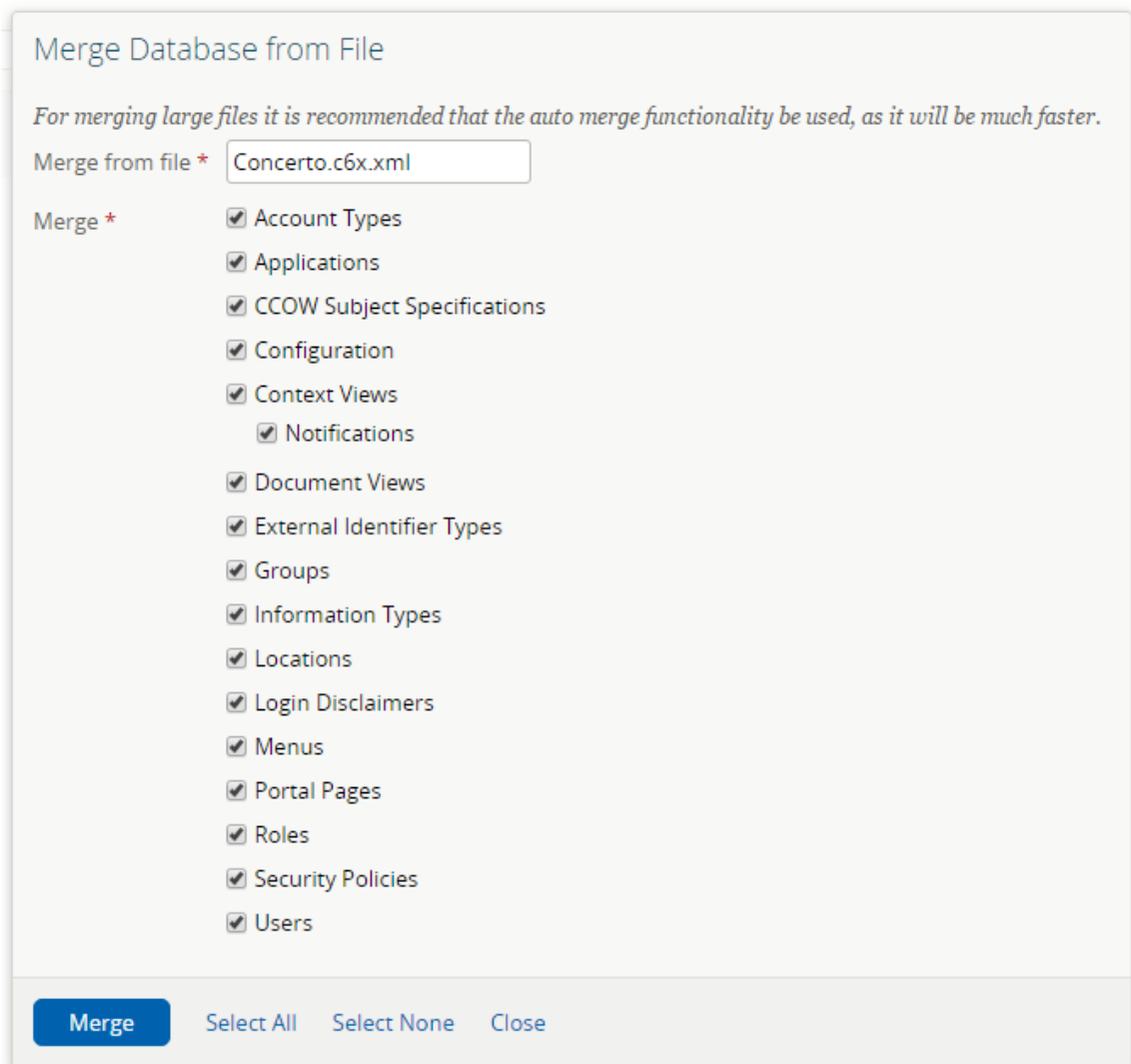
a. In Clinical Portal, navigate to **Concerto > Database Utilities**.

b. In the **Merge** drop-down list, select the `.xml` file that you want to merge.



The screenshot shows the Orion Health administration interface. On the left, a sidebar menu is visible with the following items: CONCERTO, Users, Roles & Groups, Locations, Applications, Security Policies, Information Types, Database Utilities (highlighted), Configuration, and Configuration Validator. On the right, the 'Export' section is active, showing an 'Export' button. Below it, the 'Merge' section is visible, featuring a dropdown menu with 'Concerto.c6x.xml' selected and a 'Merge' button.

- c. Select the **Merge** button.  
The **Merge Database From File** dialog box is displayed.



The screenshot shows the 'Merge Database from File' dialog box. At the top, it says 'Merge Database from File'. Below this, a note reads: 'For merging large files it is recommended that the auto merge functionality be used, as it will be much faster.' The 'Merge from file \*' field contains 'Concerto.c6x.xml'. Under the 'Merge \*' section, there is a list of items with checkboxes, all of which are checked: Account Types, Applications, CCOW Subject Specifications, Configuration, Context Views, Notifications, Document Views, External Identifier Types, Groups, Information Types, Locations, Login Disclaimers, Menus, Portal Pages, Roles, Security Policies, and Users. At the bottom, there are four buttons: 'Merge', 'Select All', 'Select None', and 'Close'.

- d. Ensure that all fields are selected.

- e. Select the **Merge** button.

Log off and log in again to refresh the Clinical Portal menus.

## Customizing the Send to EMR Function

You can customize the Send to EMR function by doing the following:


- Disabling the Send to EMR functionality - If you do not want the system to send information to a clinician's Electronic Medical Record (EMR) you can remove that delivery channel and remove the **Send to EMR** button so that it does not appear in Clinical Portal. Refer to [Disabling the Send to EMR Function](#) for details.
- Associating Clinicians with EMRs - To associate clinicians with EMRs, refer to [Associating Clinicians with EMRs](#) for details.
- Adding Electronic Medical Records (EMRs) - To add Electronic Medical Records (EMRs) you want to exchange documents with to the Orion Health HIE system, refer to [Adding Electronic Medical Records](#) for details.
- Sending Results and generated CCDs to EMRs automatically - You can configure the system so that all relevant results and generated CCDs (or 'Patient Snapshots') are automatically sent to a clinician's Electronic Medical Record (EMR). Refer to [Send CCDs, Results, and Documents to EMRs Automatically](#) for details.

### Disabling the Send to EMR Function

This section describes how to remove the **Send to EMR** option within Clinical Portal so clinicians cannot manually send information to their Electronic Medical Record (EMR).

1. Remove the **Send to EMR** button from Clinical Portal:

This step hides the **Send to EMR** button, so it is not available to users when they are viewing CCDs, results, or documents.

- a. From Clinical Portal, navigate to **Concerto > Applications**. The **Applications** screen is displayed.
- b. Select the **Select** icon  to the left of the application that contains the document repositories used by Send to EMR.

If you are using the default repositories, you must select the **Select** icon  to the left of **Orion - Clinical Data Repository**.

The details for the selected application are displayed, an example is shown in the following screenshot:

HIE

General Security Entry Points Searches Document Repositories Windowlets Links

**Application Details**

Description: This application contains entry points etc for HIE pages.

Application Variables:

-----

DocumentRegistryHostName - HIE Conductor host name  
DocumentRegistryPort - HIE Conductor HTTP port  
Minor Patient Identifiers - minor patient identifiers  
NotificationsApplicationName - name of application containing notifications  
NotificationsSendToEmrEntryPointName - name of Send to EMR entry point in application  
Patient Identifier - the patient identifier  
patientNamespace - namespace of patient IDs  
IntegrationDriverPath - The path on the file system of the web service interface

Login Timeout: 300 seconds

Login Script: POST <%=ApplicationVariables.contextPathPrefix%>/login-concerto/login

Logout Script: POST <%=ApplicationVariables.contextPathPrefix%>/login-concerto/logout

Default Help Redirection: No default help redirection is configured

c. Select the **Document Repositories** tab.

General Security Entry Points Searches Document Repositories Windowlets Links

Create a new document repository

**Document Repositories**

Name	Type	Description
CCD Summary Repository	Summary Document Repository	
CDA View	Summary Document Repository	
Document Registry	SQL Document Repository	//You can use the following to handle all other minor patient identifier for query //At the moment it errors out unless you use oid format of patient identifier type //The only difference from the query configured is the following has this addition...

Export OK Cancel Save

d. Select the **Select** icon . For example, CCD Summary Repository

e. Select the **Control Bar** tab.

General Security Image Mappings Control Bar Links

**Display**

Display Control Bar ☒ Display Document Title In Control Bar ☒

**Control Bar Buttons**

Name	Label	Display	Action	Enabled
Download	Download	true	window.location="/concerto/ApplicationRedirector.htm?"	true
Send To Direct	Send To	true	var application = new Application	true
Send To EMR	Send To	true	var application = new Application	true
Print	Print	true	window.location="/concerto/ApplicationRedirector.htm?"	true

OK Cancel Save

- f. In the **Control Bar Buttons** panel, select **False** into the **Display** field for **Send to EMR**.
- g. Select the **OK** button.
- h. If required, repeat these steps for the remaining document repositories.

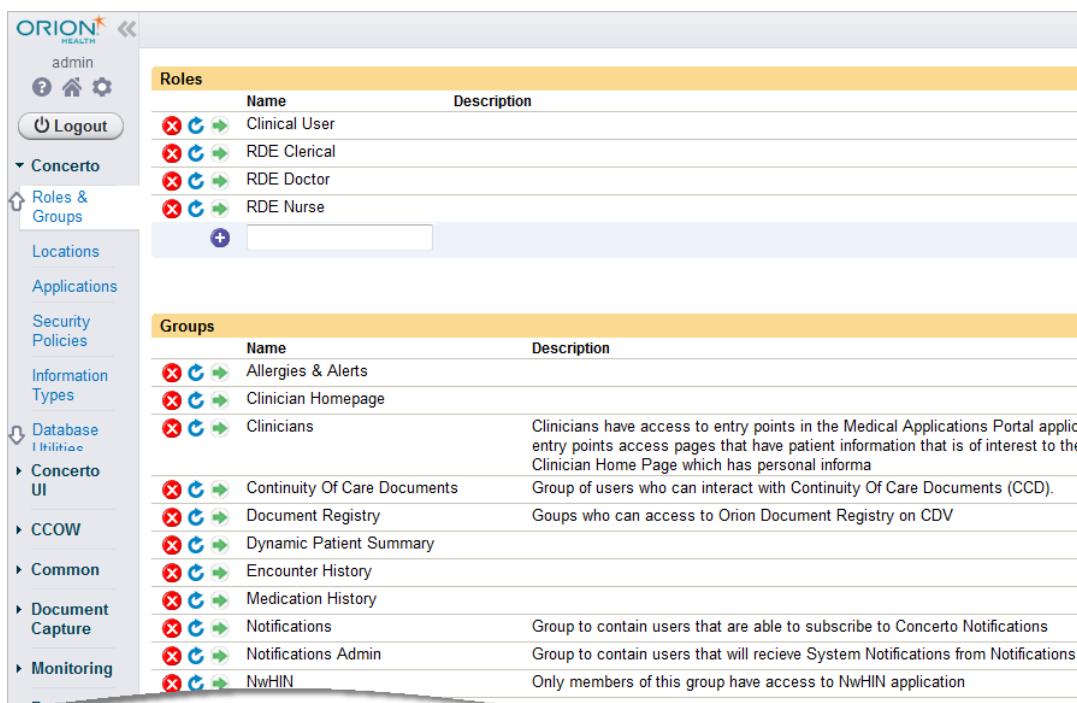
If you are using the default system setup, this includes:

- Microbiology Reports
- Numerical Laboratory Results
- Outstanding Orders
- Radiology Reports
- Textual Laboratory Reports

## 2. Hide the My EMR attribute:

This step disables the **My EMR** field in the subscriptions page, so Clinicians cannot specify an Electronic Medical Record.

- a. From Clinical Portal, navigate to **Concerto > Roles & Groups**.



- b. Select the **Select** icon  to the left of **Notifications**. The **Notifications** screen is displayed:

The screenshot shows the 'Notifications' window with the 'Security' tab selected. It contains two main sections: 'Group Details' and 'Group Attributes'.

**Group Details:**

- Name: Notifications
- Description: Group to contain users that are able to subscribe to Concerto Notifications
- Automatic Membership: ☐
- Synchronize LDAP Membership: ☐
- Inactivity Timeout: [Dropdown menu]

**Group Attributes:**

Name	Display Name	Input Type	Display	User Editable	Encrypt
EMR	My EMR	Text Field	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DirectEmail	DirectEmail	Text Field	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

At the bottom right are buttons for 'OK', 'Cancel', and 'Save'.

- c. In the **Group Attributes** panel, clear the **Display** checkbox for **EMR**.
- d. Select the **OK** button.

3. Check that all Notifications are set not to exchange documents:

- a. From Orion Health Platform, navigate to **Configuration > Notifications > Notifications**. The **Notifications** tab is displayed.

The screenshot shows the 'Configuration' window with the 'Notifications' tab selected. A list of notifications is displayed, each with a description and a corresponding code.

Notification Description	Code
A new document (imaging report) is available	@ImagingReport
A new document is available	@TranscribeDocument
Clinic Appointment Completed	@Appointment
Final Laboratory Result is available	@LaboratoryObservation
Final Microbiology Result available	@LaboratoryObservation
Final Radiology Report is available	@ImagingReport
Inpatient Admission	@Encounter
Inpatient Discharge	@Encounter
Interim Microbiology Result available	@LaboratoryObservation
Patient is admitted to ER	@Encounter
Patient is discharged from ER	@Encounter

- b. Select the first notification in the list. For example, **A new document (imaging report) is available**. The **Notification Details** panel is displayed.



**Notification Details** Save Revert

**Notification Type**

Parent Event Type: ImagingReport

Name: \* A new document (imaging report) is available

Enabled: ☒

Document To Exchange: \* None

**Notification Rules**

ReportStatus is \* Final ✖

[Add Rule Condition](#)

OR:

ReportStatus is \* Correction to results ✖

[Add Rule Condition](#)

[Create OR rule set](#)

c. In the **Document To Exchange** field, select **None** from the drop-down list.

d. Select the **Save** icon .

4. Disable the EMR Delivery Channel to hide the option of sending Documents on the **My Subscriptions** screen.

a. From Orion Health Platform, navigate to **Configuration > Notifications > Delivery Channels**. The **Delivery Channels** tab is displayed.

ORION HEALTH

**Configuration** **Monitoring** **Platform** Change Admin Password Logout

General ▾ **Delivery Channels** ☐ SMTP Configuration

Applications ▾

Data Services ▾

Document Services ▾

Nhin ▾

Notifications ▴

Delivery Channels

Notifications



Notifications (Advanced)

Privacy ▾

	Settings
Primary Channel Settings	Settings
Concerto User Messaging	Delivery Channel
Direct	Delivery Channel
EMR	Delivery Channel
Email	Delivery Channel

b. Select **EMR** to display the details to the right.

## Delivery Channel Details

 Save  Revert

### Configured Settings

Channel Code: EMR

Channel enabled: ☐ off

Name:

Address Label:

Use Attributes: ☒ yes

Address Schema:

Address Property:

Identifier Namespace:

Address Displayed: ☒ yes

Address Editable: ☒ yes

Read Only Explanation:

Text Notifications: ☐ no


Supported Methods: ☒ Detail ☐ Non-detail ☐ Summary

Documents: ☒ yes

Audience:

### Additional Properties

Properties: Key	Value

- c. Clear the **Channel enabled** checkbox.
- d. Select the **Save** icon .

## Associating Clinicians with EMRs

This step is only required if you intend to set up Electronic Medical Record (EMR) features. This is optional.

Clinicians can be associated with an EMR in one of two ways:

If you are...	Refer to ...
An Administrator	<a href="#">Setting an EMR Association by an Administrator</a> for details.
A Clinician	<a href="#">Setting an EMR Association by a Clinician</a> for details.

### Setting an EMR Association by a Clinician

1. From Clinical Portal, navigate to **Notifications > Subscriptions**. The subscriptions screen is displayed.

Direct

direct@lin64-1.com

My EMR

Auckalnd Central

My Email Address

By default

☒ Notify By Concerto User Messaging  
☐ Notify By Direct  
☐ Notify By Email  
☐ Notify in Daily Summary Email  
☐ Notify in Daily Summary Concerto User Messaging  
☐ Send associated document to My EMR

Choose which notifications you want to receive and where to send them. Daily Summary and Email cannot contain patient information so the detail must be sent elsewhere.

All notifications are sent as they happen except the Daily Summary, which is sent during the night.

### Subscriptions for patients I have a relationship with

Notification	Delivery Options
<input checked="" type="checkbox"/> Clinic Appointment Completed	Use default <a href="#">Change</a>
<input checked="" type="checkbox"/> Inpatient Admission	Custom <a href="#">Change</a>
<input checked="" type="checkbox"/> Inpatient Discharge	Use default <a href="#">Change</a>
<input checked="" type="checkbox"/> Patient is admitted to ER	Use default <a href="#">Change</a>
<input checked="" type="checkbox"/> Patient is discharged from ER	Use default <a href="#">Change</a>
<input checked="" type="checkbox"/> A new document (imaging report) is available	Use default <a href="#">Change</a>
<input checked="" type="checkbox"/> Final Radiology Report is available	Use default <a href="#">Change</a>
<input checked="" type="checkbox"/> Final Laboratory Result is available	Use default <a href="#">Change</a>
<input checked="" type="checkbox"/> Final Microbiology Result available	Use default <a href="#">Change</a>
<input checked="" type="checkbox"/> Interim Microbiology Result available	Use default <a href="#">Change</a>
<input checked="" type="checkbox"/> A new document is available	Use default <a href="#">Change</a>

## 2. Complete the following fields:

Field	Description
Direct	<p>Specify the e-mail address that has permission to send secure messages through the Direct system. For example, direct@lin64-1.com.</p> <p>This e-mail address has to be registered on the Direct server.</p>
My EMR	<p>Select the appropriate Electronic Medical Record (EMR). For example, Auckland Central.</p> <p>This list includes all of the Electronic Medical Records (EMRs) that have been set up in your Orion Health HIE system. If the EMR you want to</p>

Field	Description
	select is not listed, contact your system administrator.
	For more information about the other options on this screen, refer to <a href="#">Subscribing to Notifications</a> .

3. Select the **Save** button.

### *Setting an EMR Association by an Administrator*

1. From Clinical Portal, navigate to **Concerto > Users**. The **Users** screen is displayed.
2. Find the user that you want to associate with an EMR:
  - a. Complete one or more of the search fields.
  - b. Select the **Search** button. A list of matching users is displayed.
3. Select the user. The details for that user are displayed:

User Details

clinician

Account Policy

Default Policy

Configure

Authentication

☒ Use Clinical Portal password
 

Reset Password

Password Policy

Default Policy

☒ Force password change on next login

☐ Use external (Windows NT/LDAP) password

Home Page

User Type

☒ Normal
 ☐ Shared

Inactivity Timeout

Role Memberships

Roles user performs

Roles user does not perform

Clinical User  
 RDE Clerical  
 RDE Doctor  
 RDE Nurse

Group Memberships

Member of

Users  
 Clinicians  
 Notifications

Not a member of

Administrators  
 Records Administrators  
 Allergies & Alerts  
 Clinician Homepage  
 Document Registry  
 Dynamic Patient Summary

OK

Cancel

Save

User Attributes

Users

Description

An example Clinician user in Concerto.

E-mail

Full Name

Example Clinician

Notifications

My EMR

DirectEmail

User External Identifiers

External Identifier Type

Value

OK

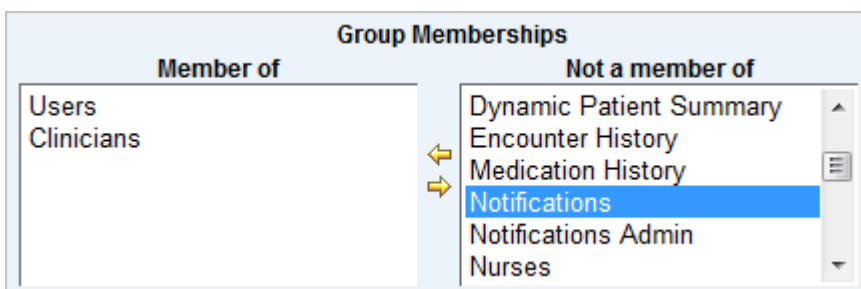
Cancel


Save

4. If the user is not a member of the **Notifications** Group, add the user to that group:

This step is important because the **My EMR** and **Direct Mail** fields, which are required to associate an EMR, are only displayed if the user is a member of the **Notifications** group.

- a. In the **Not a member of** column in the **Group Memberships** section, select **Notifications**:



- b. Select the left arrow .
- c. Select the **OK** button.

5. Complete the following fields:

Field	Description
My EMR	<p>Enter the OID for the relevant EMR.</p> <div style="background-color: #ffffcc; padding: 10px; margin: 10px 0;"> <p>This field is only visible if the user is part of the Notifications group. To find out how to add users to the Notifications group, refer to <a href="#">Adding Users to Notifications Group</a> for details.</p> </div> <div style="background-color: #e0ffe0; padding: 10px; margin: 10px 0;"> <p>You can find a list of EMRs, and their associated OIDs in Orion Health Platform. In Orion Health Platform, select <b>Notifications &gt; Notifications (Advanced)</b>. Then select the <b>Receiving EMR System</b> tab. Select an EMR to display its details (including OID). For more information on how</p> </div>

Field	Description
	receiving EMRs are set up, refer to <a href="#">Configure EMRs for CCDs</a> and <a href="#">Configure EMRs for Results</a> in the <i>HIE Administration Manual</i> for details.
DirectEmail	Specify the email address that has permission to send secure messages through the Direct system.  This email address has to be registered on the Direct server.

6. Select the **OK** button.

### Adding Electronic Medical Records

For the Send function to Electronic Medical Records (EMR) to work, you must add the EMRs that you want to exchange documents with to the Orion Health HIE system.

If you want to enable the Send to EMR functionality for Results (ORU messages) as well as CCDs, you are required to set up at least one additional document repository for those documents. Refer to [Configure EMRs for Results](#) in the *HIE Administration Manual* for details.

To specify the Electronic Medical Record (EMR) systems that you want to be able to receive notifications:

1. Obtain an OID for each EMR in the system:

An Object Identifier (OID) is a unique global identifier. Only registered OIDs can be used. This identifier helps the system to distinguish between multiple Electronic Medical Records (EMRs). Refer to [OID Repository - FAQ](#) for details.

2. Configure each EMR:

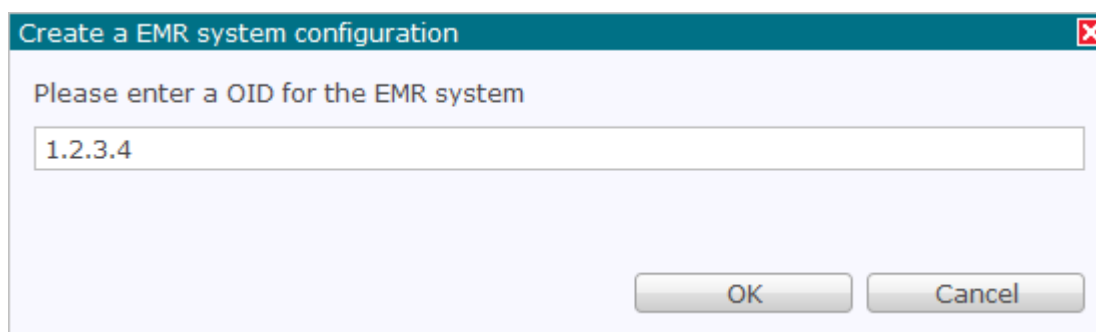
a. From Orion Health Platform, navigate to **Notifications > Notifications (Advanced)**.

There are two versions of Orion Health Platform:

- The first is installed on the Orion Health Platform Application server which was set up as part of setting up the system infrastructure. This version is used to configure and maintain the core system elements.
- The second is installed on the Orion Health HIE Application Server. This version is used to configure and maintain the system elements that are unique to Orion Health HIE including Notifications.

b. Select the **Receiving EMR System** tab.

3. Select the **Add** icon . The **Create a EMR system configuration** dialog is displayed:



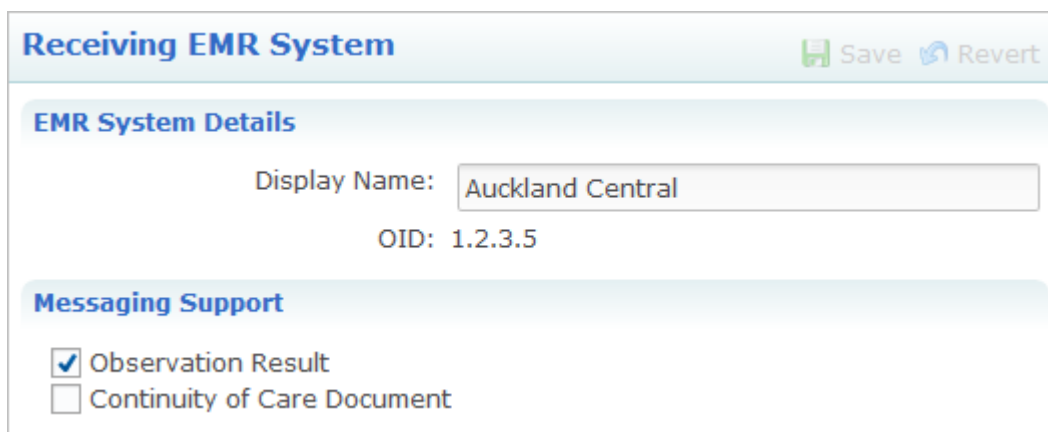
The dialog box has a title bar "Create a EMR system configuration" with a close button. Inside, it says "Please enter a OID for the EMR system". There is a text input field containing "1.2.3.4". At the bottom right are "OK" and "Cancel" buttons.

a. Enter the OID for this EMR system.

When specifying the OID, this value must not be changed once it is set. This is because documents are saved using this OID and if the OID is subsequently changed, future messages will be saved using the new OID.

b. Select the **OK** button. An entry for the Receiving EMR system is created and listed.

c. Select the newly created Receiving EMR system. The details for that system are displayed on the right side of the panel.



The panel is titled "Receiving EMR System" and has "Save" and "Revert" buttons. It contains two sections: "EMR System Details" and "Messaging Support".

**EMR System Details**

Display Name:

OID: 1.2.3.5

**Messaging Support**

☒ Observation Result

☐ Continuity of Care Document

d. Complete the following fields:

Field	Description
Display Name	Enter a name for the Receiving EMR system. For example, Statewide EMR.
OID	This displays the OID that you specified when you created this entry.
HL7 ORU	Select this checkbox if the receiving system supports the HL7 messaging format.
Continuity of Care(CCD)	Select this checkbox if the receiving system supports the CCD messaging format.

e. Select the **Save** icon .

### ***Sending CCDs, Results, and Documents to EMRs Automatically***

You can configure your system so that CCDs, results, and documents are automatically sent to the relevant Electronic Medical Record.

To do this, you must enable the Automated Document Exchange option. Refer to [Configuring Automated Document Exchange](#) for details.

To enable the Automated Document Exchange function, you must set up the following Orion Health HIE features:

- CCD Generation Sending
- Sending Results to EMRs
- Notifications

The Automated Document Exchange feature relies on these functionalities to work.

## Configuring Event Types

Notifications allows a healthcare provider to subscribe to types of notifiable events. The administrator can configure the types of event that Notifications supports, for example, admission, discharge, and Radiology results.

Once the notifications associated with the event types are also configured, a provider can subscribe to any of the notifications within Clinical Portal.

Notifications can also be triggered by Typed Clinical Events, for example, many



applications publish Typed Clinical Events when new clinical information is available for a patient and Notifications can listen to these events.

The administrator can also configure system events in order to keep track of changes made to the configuration of notifications. Only users belonging to the System Audience will receive notifications triggered by system events.

The API bundle that exports a Typed Clinical Event, which Notifications has been configured to listen, must be present on the same platform instance as Notifications.










- Depending on how the rules are configured, a clinical event can trigger multiple notification types. Each recipient receives one notification message, containing details of one or more notification types. Refer to [Notifications Workflow of an Event with Multiple Notification Types](#) for details.
- Depending on how the rules are configured, Notifications can also send more than one notification message to different recipients. Refer to [Notifications Workflow of a Typed Clinical Event with Multiple Event Types](#) for details.


**Configuring Event Types** includes:

- [Adding and Deleting Event Types](#)
- [Modifying Event Types](#) which includes downloading inbound and outbound XML schemas
- [Configuring Event Data Model](#)

## Displaying Event Types

1. From Orion Health Platform, navigate to **Configuration > Notifications (Advanced)**. This displays the **Events** tab with the event types listed in the pane on the left, as shown in the following screenshot:

<input checked="" type="checkbox"/> Events	<input type="checkbox"/> Digests	<input type="checkbox"/> Message Content Resolver	<input type="checkbox"/> Receiver
<input type="text" value="Search..."/>    			
 Appointment	Non-system Event		
 AppointmentEvent	Non-system Event		
 AppointmentReminder	Non-system Event		
 DocumentRegistryEvent	Non-system Event		
 EncounterEvent 8.7	Non-system Event		

2. Enter search characters in the field at the top of the **Notification Events** pane to search for event types. Select the **Clear** icon  beside this field to clear the search.

## Configuring Event Data Model

Notifications allows a healthcare provider to subscribe to types of notifiable events. The administrator can configure the types of event that Notifications supports, including configuring the data model for the triggered message sent to Notifications by an event that occurred.

Data Models based on Typed Clinical Events cannot be modified.

When an event type is created, it contains the following:

- A **patientSummary** attribute which the administrator cannot modify.
- A **documentMetaData** attribute which the administrator cannot modify.
- An **eventContent** attribute where the administrator can edit attributes of **eventContent** and its sub-attributes. The administrator can do the following:
  - Add attributes to **eventContent** or its composite children.
  - Specify whether attributes are repeating or required.
  - Specify the Comparison Type for date attributes.
  - Add or delete values in Lookups.

The administrator cannot modify or delete any other attributes.

**Configuring Event Data Model** includes the following:

- [Adding Attributes](#)
- [Modifying Attributes](#)
- [Downloading Schemas](#)

### Adding Attributes

Notifications allows a healthcare provider to subscribe to types of notifiable events. The administrator can add attributes of the **eventContent** attribute in the event type data model for an event.

You can do the following:

- Add an attribute or composite attribute of the **eventContent** attribute.
- Add an attribute of a composite Child of the **eventContent** attribute.

You cannot delete an attribute.

1. From Orion Health Platform, navigate to **Configuration > Notifications (Advanced)**. This displays the **Events** tab on the left side of the panel, as shown in the following screenshot. Refer to [Configuring Event Types](#) for details.

<input checked="" type="checkbox"/> Events	<input type="checkbox"/> Digests	<input type="checkbox"/> Message Content Resolver	<input type="checkbox"/> Receiving
<div>Search...</div> <div> </div>			
Appointment	Non-system Event		
AppointmentEvent	Non-system Event		
AppointmentReminder	Non-system Event		
DocumentRegistryEvent	Non-system Event		
EncounterEvent 8.7	Non-system Event		
FailedMailDelivery	Non-system Event		
ImagingReport - LabEvent 8.7	Non-system Event		
LaboratoryObservation - LabEvent 8.7	Non-system Event		
NewMailReceived	Non-system Event		
Notification Changed	System Event		
SharedFileEvent	Non-system Event		

2. Select the name of the event type. This displays the event type's details in the right pane, including the event type data model in a tree you can expand, as shown in the following screenshot:

Save Revert

**Event Type**

Name: SharedFileEvent  
Description: New Shared File  
System Event: ☐  
Audience: \* Patient Portal User  
Subject Format:  
Detail Message Format: A file '<%=eventContent.title%>' has been <%if eventContent.action.equals("NewSharedFile")%>SHARED<%elseif eventContent.action.equals("EditSharedFile")%>EDITED<%elseif eventContent.action.equals("DeleteSharedFile")%>DELETED<%end if%> by <%=eventContent.actorId%>

**Activity Stream**

Send this Event to the Activity Stream: false  
Update Type Name:  
Title:  
Summary:  
External Id:  
Parameters: None  
+ Add

**Event Type Data Model**

SharedFileEvent

- patientSummary
- documentMetaData
- otherRecipient (repeating)
- eventContent

**Edit Event Content**

Attribute Name: eventContent  
Attribute Data Type: SharedFileEvent-eventContent  
Required: ☐  
Add Attribute

**Event Type Additions**

Downloads: Download Inbound and Outbound Xml Schemas

3. Select the **eventContent** attribute.
4. Select the **Add Attribute** button to open the **Add New Attribute** dialog box. Specify the Name and Data Type of the new attribute, as shown in the following screenshot:

Add New Attribute

Please fill in the following properties for the new attribute

Attribute Name Code  
Attribute Data Type STRING
















OK Cancel

5. Select the **OK** button to create the attribute and display the **Edit** group of fields for the attribute. Refer to [Modifying Attributes](#) for details.
6. Select the **Save** button to save the attribute.

## Modifying Attributes

Notifications allows a healthcare provider to subscribe to types of notifiable events. The administrator can modify attributes or composite attributes of the **eventContent** attribute, in the event type data for an event.

1. From Orion Health Platform, navigate to **Configuration > Notifications (Advanced)**. This displays the **Events** tab, with the event types in the pane on the left, as shown in the following screenshot. Refer to [Configuring Event Types](#) for details.

<input checked="" type="checkbox"/> Events	<input type="checkbox"/> Digests	<input type="checkbox"/> Message Content Resolver	<input type="checkbox"/> Receiving
<input type="text" value="Search..."/>    			
 Appointment	Non-system Event		
 AppointmentEvent	Non-system Event		
 AppointmentReminder	Non-system Event		
 DocumentRegistryEvent	Non-system Event		
 EncounterEvent 8.7	Non-system Event		
 FailedMailDelivery	Non-system Event		
 ImagingReport - LabEvent 8.7	Non-system Event		
 LaboratoryObservation - LabEvent 8.7	Non-system Event		
 NewMailReceived	Non-system Event		
 Notification Changed	System Event		
 SharedFileEvent	Non-system Event		

2. Select the name of the event type. This displays the details of the event type, as shown in the following screenshot:

Save Revert

### Event Type

Name: SharedFileEvent

Description:

System Event: ☐

Audience:

Subject Format:

Detail Message Format: `A file '<%=eventContent.title%>' has been <%if eventContent.action.equals("NewSharedFile")%>SHARED<%elseif eventContent.action.equals("EditSharedFile")%>EDITED<%elseif eventContent.action.equals("DeleteSharedFile")%>DELETED<%end if%> by <%=eventContent.actorId%>`

### Activity Stream

Send this Event to the Activity Stream:

Update Type Name:

Title:

Summary:

External Id:

Parameters: *None*  
+ Add

#### Event Type Data Model

- SharedFileEvent
  - patientSummary
  - documentMetaData
  - otherRecipient (repeating)
  - eventContent**

#### Edit Event Content

Attribute Name: eventContent

Attribute Data Type: SharedFileEvent-eventContent

Required: ☐

Add Attribute

#### Event Type Additions

Downloads: [Download Inbound and Outbound Xml Schemas](#)

- Expand the **eventContent** attribute and select the attribute you want to edit to display the **Edit** fields of the attribute.

#### Event Type Data Model

- SharedFileEvent
  - patientSummary
  - documentMetaData
  - otherRecipient (repeating)
  - eventContent
    - action
    - title**
    - summary
    - actorNamespace
    - actorId
    - externalId

#### Edit Attribute

Attribute Name:

Attribute Data Type: **STRING**

Repeating: ☐

Required: ☐

Delete Attribute

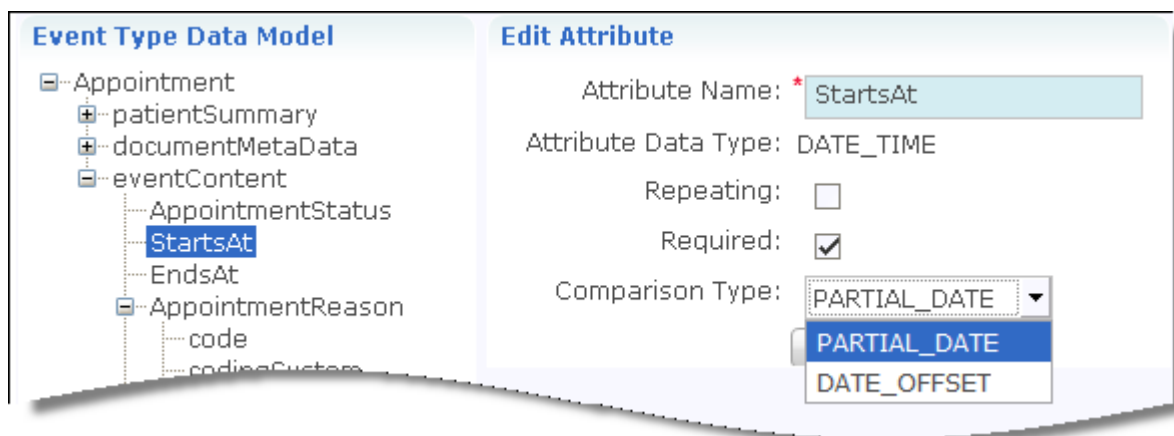
Then you can:

- Select the **Required** checkbox when available.
- Select the **Repeating** checkbox when available.

4. Select the **Save** icon  to save the changes.

### Editing an Attribute with an Attribute Data Type of DATE\_TIME

1. Select the attribute to display the **Edit** fields.
2. Select the appropriate value from the **Comparison Type** drop-down list, to set which type of display is used in the Rule condition for a Notification, as shown in the following screenshot:



The Comparison Type values are described in the following table:

Name	Description
<b>PARTIAL_DATE</b>	Compare the date with a specific date on the notifications screen that is defined in the notifications rules.
<b>DATE_OFFSET</b>	Compare the date with x days before or after a specific date on the notifications screen that is defined in the notifications rules.

3. Select the **Save** icon  to save the changes.

### Adding or Deleting Values for a Lookup Attribute

1. Select the attribute to display the **Edit** fields.
2. Select the **Show Values** link to display the **Edit Lookup values** dialog, as shown in the following screenshot:

**Edit Lookup values**

The following are the values in the terminology service for the 'HL70278' lookup

Code	Coding system	Description
Blocked	HL70278	Blocked
Booked	HL70278	Booked
Cancelled	HL70278	Cancelled
Complete	HL70278	Complete
Dc	HL70278	Discontinued
Deleted	HL70278	Deleted
Noshow	HL70278	No Show
Overbook	HL70278	Overbooked
Pending	HL70278	Pending
Started	HL70278	Started
Waitlist	HL70278	Waiting List

- To delete a value, select the value and then select the **Delete Value** button.
- To add a value, do the following:
  - i. Select the **Add Value** button, as shown in the following screenshot:

**Add Lookup Value**

Please enter the details for the new lookup value

Code   
 Coding system   
 Description

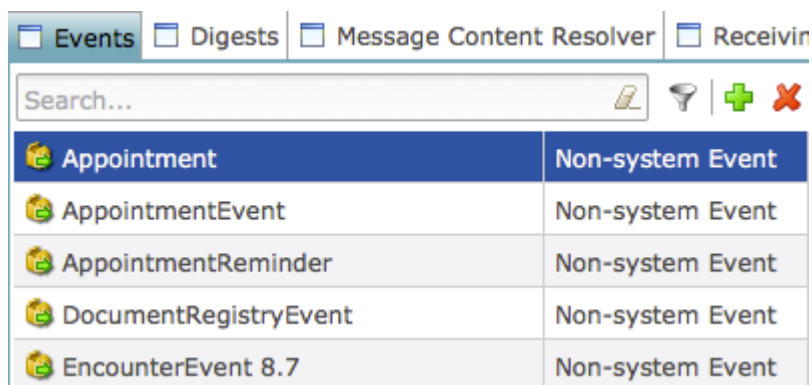
- ii. Enter the **Code**, **Coding system**, and **Description** field details of the new value. The **Code** and **Coding system** fields are required. Every **Code** and **Coding system** combination must be unique within this lookup.
  - iii. Select the **OK** button to add the new value.
  - iv. Select the **OK** button to close the **Edit Lookup Values** dialog.
  - v. Select the **Save** button to save the lookup value.



## Downloading Schemas

Notifications allows a healthcare provider to subscribe to types of notifiable events. The administrator can download a compressed file that contains the XML schemas for both inbound and outbound messaging for events.

1. From Orion Health Platform, navigate to **Configuration > Notifications (Advanced)**. This displays the **Events** tab, with the event types in the pane on the left, as shown in the following screenshot:



2. Select an event type's name. This displays the event type's details and the **Download Inbound and Outbound XML Schemas** link in the right pane.
3. Select the **Download Inbound and Outbound XML Schemas** link to download the zip file containing the XML schemas for inbound and outbound messaging for all event types. The schemas can be found in the files listed in the following table:

Schema	File
Inbound	inbound.xsd
Outbound	com.orchestral.notification.delivery.xmltcp.XmlTcpDeliveryChannel-outbound.xsd

## Adding and Deleting Event Types





Notifications allows a healthcare provider to subscribe to types of notifiable events. Once the notifications associated with the event types are also configured, the provider can subscribe to any of the notifications within Clinical Portal.

The administrator can add and delete the types of event that Notifications will support, for example, admission, discharge, and Radiology results.

The administrator can also add and delete system events to keep track of changes made to the configuration of notifications. Only users belonging to the System Audience will receive notifications triggered by system events.

## Adding Event Types

1. From Orion Health Platform, navigate to **Configuration > Notifications (Advanced)**. This displays the **Events** tab, with event types listed in the pane on the left, as shown in the following screenshot:

Events	Digests	Message Content Resolver	Re
Search...			
 Appointment	Non-system Event		
 AppointmentEvent	Non-system Event		
 AppointmentReminder	Non-system Event		
 DocumentRegistryEvent	Non-system Event		

2. Click the **Add** icon  at the top of the **Notification Events** pane to open the **Create a New Event** dialog box, as shown in the following screenshot:

Create a new Event Type

Please enter a name for the Event Type

Triggered by Typed Clinical Event

Typed Clinical Event trigger

System Event

Audience:

Default Audience

The name is required

OK

Cancel

3. Enter the **Event Type** name.
4. To trigger this **EventType** from a Typed Clinical Event, select the **Triggered by Typed Clinical Event** checkbox, and then select the Typed Clinical Event from the drop-down list.
5. Check the **System Event** option to create a system event.
6. Select the audience to receive notifications associated with the event.


### Allowed Audiences

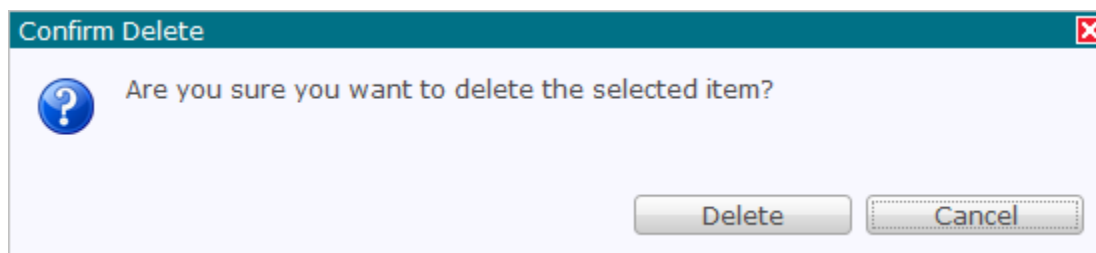
Only *System Audience* is allowed for system event types.

Only non-system audiences are allowed for non-system event types.

7. Select the **OK** button to add the event, and display the event type details in the right pane.
8. Complete the details for the new event type in the right pane. Refer to [Modifying Event Types](#) for details.
9. Select the **Save** button to save the new event type.
10. Configure Rhapsody for the new event type. Refer to [Configuring Rhapsody for Event Types](#) for details.

## Deleting Event Types

1. From Orion Health Platform, navigate to **Configuration > Notifications (Advanced)**. This displays the **Events** tab with event types listed in the pane on the left.
2. Select the event type to be removed and click the **Delete** icon  at the top of the **Notification** panel. This opens the **Confirm Delete** dialog box, as shown in the following screenshot:



3. Select the **Delete** button to delete the event type.

Deleting an event type will also delete any associated notifications.

## Deleting Event Types During Data Migration

When uploading data in bulk into your clinical database, you can delete event types to prevent any degradation in system performance as a result of Notifications listening to all of the data that is being put into the system. Deleting event types will prevent notifications from listening to clinical events during data migrations.

Carry out the following configurations to disable notifications for any event type before uploading data in bulk into your clinical database.

1. Back up Notifications event types configurations using the **Configuration Explorer** in Platform. Refer to [Exporting and Importing an Event Type Configuration](#) for details.
2. Delete all event types. Refer to [Deleting Event Types](#) for details.

You can restore all the Notifications event types by importing the configuration backup into Platform. Refer to [Importing Event Type Configurations](#) for details.

## Modifying Event Types

Notifications allows a health care provider to subscribe to types of notifiable events. The administrator can configure the types of event that Notifications will support, including modifying the event types.

The administrator can also export the XML schemas to assist synchronizing the Notification data models with the upstream data mapping.

1. From Orion Health Platform, navigate to **Configuration > Notifications > Notifications (Advanced)**. This displays the **Events** tab, with the event types in the pane on the left, as shown in the following screenshot:

Events	Digests	Message Content Resolver	Receivi
Search...			
Appointment			Non-system Event
AppointmentEvent			Non-system Event
AppointmentReminder			Non-system Event
DocumentRegistryEvent			Non-system Event
EncounterEvent 8.7			Non-system Event
FailedMailDelivery			Non-system Event
ImagingReport - LabEvent 8.7			Non-system Event
LaboratoryObservation - LabEvent 8.7			Non-system Event
NewMailReceived			Non-system Event
Notification Changed			System Event
SharedFileEvent			Non-system Event

2. Select the name of the event type to display its details in the right pane, as shown in the following screenshot:

### Event Type

Name: SharedFileEvent

Description:

System Event: ☐

Audience:  ▼

Subject Format:

Detail Message Format:

### Activity Stream

Send this Event to the Activity Stream:

Update Type Name:

Title:

Summary:

External Id:

Parameters: None

[+ Add](#)

### Event Type Data Model

- └ SharedFileEvent
  - patientSummary
  - documentMetaData
  - otherRecipient (repeating)
  - eventContent

### Edit Event Content

Attribute Name: eventContent

Attribute Data Type: SharedFileEvent-eventC

Required: ☐

[Add Attribute](#)

### Event Type Additions

Downloads: [Download Inbound and Outbound Xml Schemas](#)

- **Event Type**  
Update the fields described in the following table as required, and then select the **Save** button.

Field	Description
Name	An identifying name for the event type.

Field	Description
Description	The description of the event type.
Subject Format	The Template Processor expression that determines the subject line of any notifications sent (for example, the subject line of an email).
Detail Message Format	The Template Processor configuration control for the format to be used for the detail (secure) notification message of this event type. Refer to <a href="#">Template Processor Format Examples</a> for details.
System Event	A checkbox indicating whether or not the selected event is a system event.
Audience	<p>The audience that will receive notifications associated with the event type.</p> <div> <p><b>Allowed Audiences</b></p> <p>Only <i>System Audience</i> is allowed for system event types.</p> <p>Only non-system audiences are allowed for non-system event types.</p> </div>

You can use the Template Processor to configure the common notification message header and footer formats and to configure the summary body message format. Refer to [Configuring Notification Messages](#) for details.

Variables can be used in the template processor. Refer to [Template Processor Variables for Messages and Activity Stream](#) for details.

- **Activity Stream**

Update the fields described in the following table as required, then select the **Save** button.

Field	Description
<b>Send this Event to the Activity Stream</b>	Each event for which this Template Processor expression returns the String <code>true</code> is passed as a new activity update to the Activity Stream component. In this case, the following fields in this section are evaluated to determine the values to pass to the Activity Stream. Refer to <a href="#">Overview</a> for details.
<b>Update Type Name</b>	This Template Processor expression determines the <b>Update Type</b> that this event maps to. If there is a one-to-one correlation between Notification Types and Update Types, this expression is based on the <b>notificationTypeNames</b> variable. Refer to <a href="#">Template Processor Variables for Messages and Activity Stream</a> for details.
<b>Title</b>	This Template Processor expression determines the title of any activity stream updates generated.
<b>Summary</b>	This Template Processor expression determines the summary of any activity stream updates generated.
<b>External Id</b>	This Template Processor expression determines the external Id of any activity stream updates generated. External Ids are used when determining which Activity Updates a user can see. The format of this field is determined by the authorizer in use for the Update Type. In general, this means that this field will only need to be altered when the Update Type is using the Generic Privacy Authorizer. Refer to <a href="#">Generic Document Authorizer</a> for details.
<b>Parameters</b>	This list of Template Processor Expressions determines the parameters of any activity stream updates generated. Parameters are used inside the Activity Stream component to build up a translated message to describe the update to the

Field	Description
	<p>user. The indexes of the parameters must match the indexed expressions in the translation keys referenced by the Activity Update Type.</p> <p>For example: if the <b>Update Type Name</b> field points to the <code>Warning</code> Activity Update Type, the <b>Translation Key</b> field of the <code>Warning</code> Activity Update Type is <code>activityStream.warning</code> and the Translation of <code>activityStream.warning</code> is <code>ALERT: {0}</code>, then the user would always see <code>ALERT:</code> followed by the content of the first parameter to describe the <code>Warning</code> Activity Update Type. Refer to <a href="#">Activity Update Types</a> for details.</p>

Variables can be used in the template processor to describe the current event. Refer to [Template Processor Variables for Messages and Activity Stream](#) for details.

#### ○ Event Type Data Model

Configure the Event Type Data Model as required, then select the **Save** button. Refer to [Configuring Event Data Model](#) for details.

Data Models based on Typed Clinical Events cannot be modified.

#### ○ Event Type Additions

You can export the XML schemas to assist with synchronizing the Notification data models with the upstream data mapping.

You can add the required data elements to the respective event models in the exported file. When these are complete, import them into Rhapsody™ Integration Engine (Rhapsody) (or other middleware), to synchronize any upstream data mappings and XML trigger event message generation into Notifications.

When you add a new event type or modify an existing event type, you need to export the schemas as described in the following tables and update Rhapsody. Refer to [Configuring Rhapsody for Event Types](#) for details.

To download the XML schemas:

- Select the Download Inbound and Outbound XML Schemas link. This downloads a zip file containing the XML schemas for both inbound and outbound messaging, as described in the following table. The link



downloads the inbound schema with input and matching output definitions for all event types, not just the currently selected one.

- ii. In the **File Download** dialog, select the **Save** button. Save the archive to a temporary directory; for example, `<temp-dir>/NotificationXMLSchemas.zip`

File	Description
NotificationInboundTriggerEvent.xsd	This refers to the inbound XSD schema definition. This contains a superset of all the trigger event models.
NotificationOutboundTcpDeliveryChannel.xsd	The refers to the outbound XSD schema definition. This contains the trigger event models as child nodes, to support data pass through. It has encapsulated the relatively static delivery structure for matched notifications and delivery channels.

## Configuring Rhapsody for Event Types

When a new event type is created or modified in Notifications, you must modify Rhapsody to provide a population mapping from source data formats to the new or updated event types and data.

After creating or modifying an event type, download the inbound and outbound XML schemas. Refer to [Modifying Event Types](#) for details. Save the archive you downloaded to a temporary directory, for example, `<temp-dir>/NotificationXMLSchemas.zip`.

As described in the following list:

- Replace the trigger event message definition with the definitions you downloaded.
  - Update mappings.
  - Change message tracking.
  - Update message property filters.
- Orion Health recommends preserving the Notifications file name for the definition to aid synchronization. Rhapsody can then automatically detect the changes.
  - It is assumed that readers have Rhapsody Mapper skills.

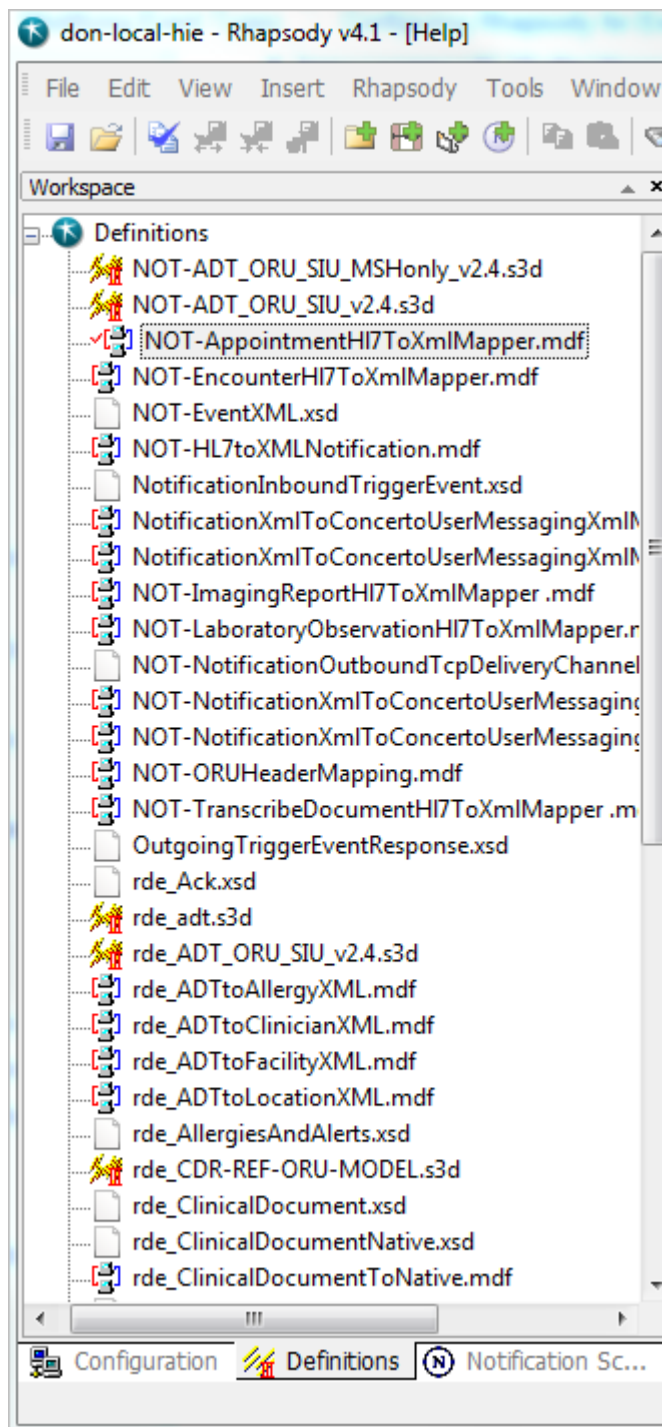
## Updating Trigger Event Message Definition

You must update the trigger event message definitions in the following mappers:

- AppointmentHL7ToXmlMapper.mdf
- EncounterHL7ToXmlMapper.mdf
- ImagingReportHL7ToXmlMapper.mdf
- LaboratoryObservationHL7ToXmlMapper.mdf
- NotificationXmlToConcertoUserMessagingXmlMapper.mdf
- TranscribeDocumentHL7ToXmlMapper.mdf

To update a definition, do the following:

1. Extract the contents of the archive you downloaded into the `<temp-dir>/NotificationXMLSchemas/*` temporary directory.
2. Open the Rhapsody IDE program.
3. Select the **Definitions** tab at the bottom of the Rhapsody IDE workspace sidebar, as shown in the following screenshot:






4. Double-select the mapper to open the **Check Out Definitions** window.
5. Select the **Check Out** button to check the mappings out.
6. Open the `My Documents/Definition Storage/<machine name>/Definitions` folder in the local file system. Find the definition and overwrite it with the definition you extracted to the temporary directory.
7. Right-click the checked-out mapper and select **Check In**.

## Updating Mappings

You need to update the mappings associated with Notifications input or output messages, including any custom mappings you have added. In the default package these mappings are:

- `AppointmentHL7ToXmlMapper.mdf`
- `EncounterHL7ToXmlMapper.mdf`

To update a `.mdf` mapping:

1. Open the Rhapsody IDE program.
2. Select the **Definitions** tab at the bottom of the Rhapsody IDE workspace sidebar.
3. Right-click the `.mdf` mapper and select **Check Out** to check the mappings out.
4. Double-click the mapping you want to update to open the **Update Message Definitions** window.
5. Select the **OK** button to display the list of maps.
6. Double-click the map you want to edit. Edit the map and select the **Save** icon . If any fields have been added, deleted or modified, implement the mapping code to match this.
7. Select the **Compile** icon  to compile the mapping. This will produce a list with any warnings or errors. Fix any errors and compile again until the mapping is correct. If any definitions are updated, you need to implement the associated mapping logic to populate these fields.
8. Select the **Test** icon  to test the mapping. Apply a suitable local message appropriate for your environment through the test.
9. Check whether the mapping is correct.
10. Check in the mapper file.

If any new trigger events have been added, add the new mappings and route paths, following the existing route patterns.

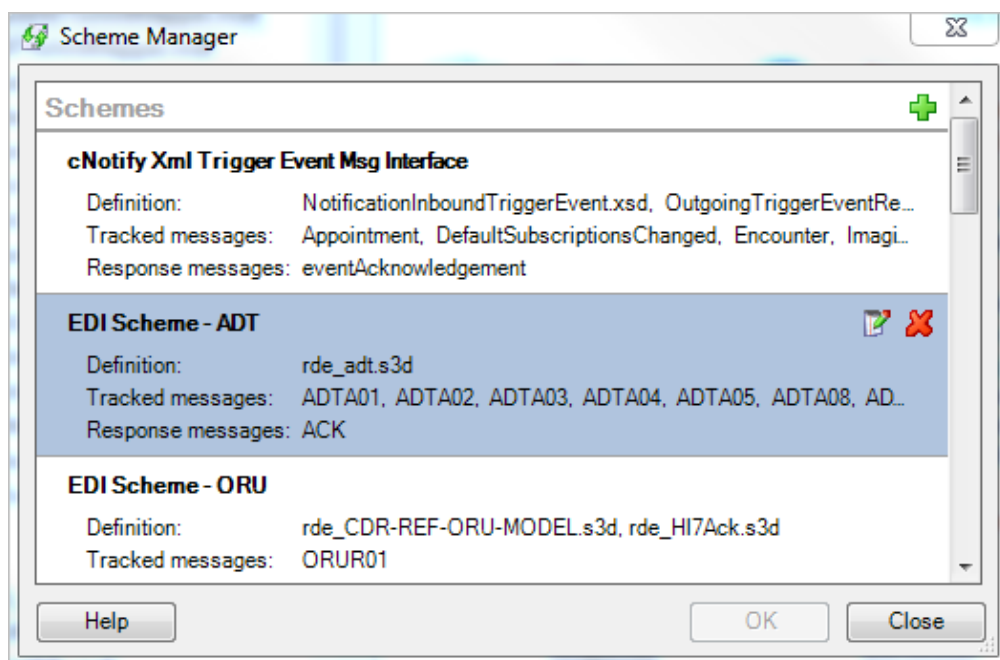
## Changing the Message Tracking


If an event type is modified, but the definition file names remain the same, then the next restart will pick up the new definitions for message tracking. Unless field locations are changed, there is unlikely to be any impact.

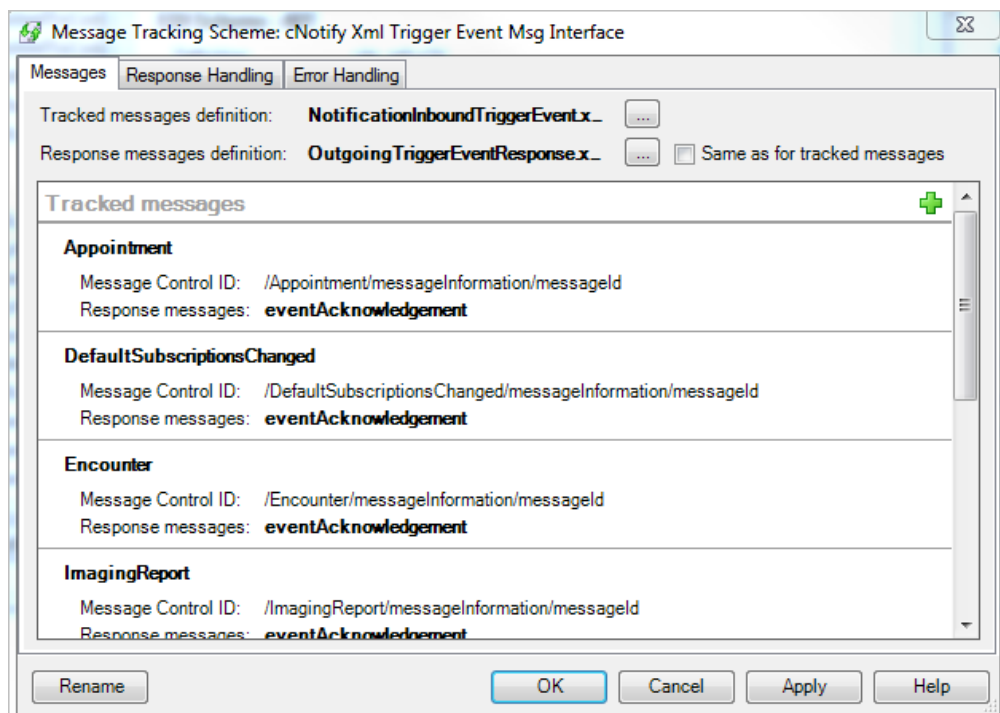
Each event type needs its tracked message configuration, so new event types need to have this setup.


To change the message tracking for a new event type:

1. Open the Rhapsody IDE program.
2. From Rhapsody IDE, navigate to **View > Tracking Scheme Manager**. This opens the **Scheme Manager** dialog.
3. In the **Schemes** section, select `NotificationInboundTriggerEvent`, as shown in the following screenshot:








4. Select the **Message Tracking Scheme** icon  to display the **Message Tracking Scheme** dialog, as shown in the following screenshot:



5. From the **Messages** tab in the **Tracked Messages** section, select the **Add** icon , to display the **Edit Tracked Messages** dialog, as shown in the following screenshot:






**Edit Tracked Messages**

**Tracked messages:**

☒ Selected messages     






☐ Other non-response messages

**Message Control ID:**

☐ Selected fields     




☒ No Control ID

**Valid responses:**

☒ Selected responses     

☐ Any response message


**OK** **Cancel**

- a. From the **Tracked Messages** section, do the following:
  - i. Select the **Add** icon  to display the **Message Selection Dialog**.
  - ii. Select the new event type you created and then select the **OK** button.
- b. From the **Message Control ID** section, do the following:
  - i. Select the **Selected fields** option.
  - ii. Select the **Add** icon  to display the **Field Selection Dialog**.
  - iii. Navigate to **<new-event-type>/messageInformation/messageId**, and select the **OK** button.
- c. From the **Valid Responses** section, do the following:
  - i. Select the **Add** icon  to display the **Message Selection Dialog**.

- ii. Select `eventAcknowledgement` and then select the **OK** button.
- d. Select the **OK** button.
6. Select the **OK** button.
7. Select the **Close** button.

## Updating Message Property Filters

When you add or change an event type, review all routes looking for Property filters.

These are filters with the  icon. There are various message properties that use the definition by name. If the path is unchanged, the routes will still function. If the path changes, there will be an error in the log or when checking in.

To update filters, do the following:

1. Open the Rhapsody IDE program.
2. Select the **Configurations** tab at the bottom of the Rhapsody IDE workspace sidebar.
3. Right-click the route with the filters you want to update to open the **Check Out Definitions** window.
4. Select the **Check Out** button to check the filters out and list them.
5. Check the filters back in again to pick up the new definitions. As the definition name is the same, this is normally automatic during the next restart or route processing.





## Configuring Notification Delivery Channels

Notifications allows a health care provider to subscribe to notifiable events in Clinical Portal, and select from the available delivery channels for the notifications.

An administrator can configure the delivery channels that Notifications supports, such as Clinical Portal inbox and email.


1. From Orion Health Platform, navigate to **Notifications > Delivery Channels** in the **Configuration** menu.

The **Delivery Channels** tab lists the delivery channels in the **Delivery** panel.

Delivery Channels	
SMTP Configuration	
Search...	
 Concerto User Messaging	Delivery Channel
 Direct	Delivery Channel
 EMR	Delivery Channel
 Email	Delivery Channel

The Direct Delivery Channel is added in Orion Health Platform.

2. Enter the characters in the **Search** field to search for delivery channels.

To clear the Search field, select the **Clear** icon. 

3. To update a delivery channel, select the name to display the delivery channel's details on the right-hand pane.
4. Make any changes that you require and then select the **Save** icon at the top of the panel.



Save Revert

### Additional Properties

[illegible]

Audiences:	Audience Name ▲	Use of Channel
	Default Audience	Allowed
	System Audience	Allowed

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Field	Description
<b>Channel Code</b>	This refers to the unique code that identifies the delivery channel. This code is defined when the delivery channel is created, and it cannot be changed. Outgoing XML notification messages contain this code so specific handling can be created in the Rhapsody configuration to implement the actual delivery mechanism.
<b>Channel enabled</b>	When this checkbox is selected, the provider can select this delivery channel as a delivery method.
<b>Name</b>	This refers to the name to be displayed for the delivery channel.
<b>Address Label</b>	This refers to the Translation key used to translate the delivery channel address label on the <b>My Subscriptions</b> screen.
<b>Use Attributes</b>	When this checkbox is selected, the delivery channel determines the recipient's address from the user attributes. When this checkbox is cleared, the delivery channel determines the address from the current identifier of the namespace specified in the <b>Identifier Namespace</b> field.
<b>Address Schema</b>	This refers to the case-sensitive name of the attribute schema to use for the delivery channel when <b>Use Attributes</b> is <b>Yes</b> .
<b>Address Property</b>	This refers to the case-sensitive name of the attribute that contains the recipient's address when <b>Use Attributes</b> is <b>Yes</b> .
<b>Identifier Namespace</b>	This refers to the case-sensitive namespace used by the delivery channel to determine the identifier of the recipient when <b>Use Attributes</b> is <b>No</b> . The default Concerto login namespace is <code>portal6x-login</code> .
<b>Address Displayed</b>	When this checkbox is selected, the address is displayed on the <b>My Subscriptions</b> screen.
<b>Address Editable</b>	When this checkbox is selected, the address is editable on the <b>My Subscriptions</b> screen.  Making the address editable could allow users to enter invalid delivery addresses. The Rhapsody route that handles message delivery for this delivery channel must be set up to send messages with invalid delivery addresses to the error queue. An administrator must monitor the error queue to ensure that notifications are delivered correctly.
<b>Read Only Explanation</b>	When the <b>Address Editable</b> checkbox is not selected, you can enter text in this field to explain why the address cannot be edited. The explanatory text should also tell the user how they could edit the address.

Field	Description
<b>Text Notifications</b>	<p>When this checkbox is selected, text notifications can be sent to this channel.</p> <p>You can configure primary delivery channels to handle text notifications, documents, or both. Secondary delivery channels, however, can only send one notification type which is text notifications or document. If you select both notification types in a secondary delivery channel, document notifications take precedence and are the only notifications sent in that channel.</p>
<b>Supported Methods</b>	<p>The supported method options for the delivery channel are the following:</p> <ul style="list-style-type: none"> <li>• <b>Detail</b> - This channel supports secure delivery and accepts messages that could contain patient data. The channel can be selected as a detail or non-detail delivery method.</li> <li>• <b>Non-detail</b> - This channel is non-secure and supports only selected summary messages that cannot contain patient data. The channel can be selected only as a non-detail delivery method.</li> <li>• <b>Daily Summary</b> - When selected, this channel supports digest delivery.</li> </ul> <p>When configuring a notification delivery channel, make sure the correct delivery method is selected.</p> <p>Do not use the <b>Detail</b> delivery method when configuring a non-secure delivery channel to ensure messages sent through this delivery channel do not contain patient data.</p>
<b>Documents</b>	<p>When this checkbox is selected, document notifications can be sent to this channel.</p> <p>The channel receives notifications only for documents that are sent to external systems such as Lab Results and CCDs. The document notifications are used only by machines receiving the notification; they are not meant to be viewed by caregivers.</p>

The delivery service has been updated so that primary delivery channels can be configured to handle text notifications, documents, or both.

Secondary delivery channels, however, can only send either a text notification or document. If the **Documents** checkbox is selected for a secondary delivery channel, then document notifications take precedence and will be the only notification sent in this channel.

## Additional Properties

Field	Description
<b>Properties</b>	<p>A list of <b>Key</b> and <b>Value</b> pairs to be serialized in the outgoing XML notification message.</p> <p><b>Adding a New Entry</b></p> <ol style="list-style-type: none"> <li>1. Select the first free row.</li> <li>2. Enter values in the <b>Key</b> and <b>Value</b> fields.</li> </ol> <p>Only key-value pairs with a non-empty key are used in the notification message.</p> <p><b>Deleting an Entry</b></p> <ol style="list-style-type: none"> <li>1. Select the key.</li> <li>2. Delete its value.</li> </ol>

## Use of Channel in Audiences

This refers to audiences to which this channel will deliver the notifications. Only users in the selected audiences can subscribe to or see this channel.

Refer to [Configuring Audiences](#) and [Specifying the Primary Delivery Channel for an Audience](#) for details about assigning the primary and allowed channels for audiences.

## Creating or Deleting a Delivery Channel

This section explains how to configure Clinical Portal and Orion Health Platform to pass addressing information to Rhapsody to implement a new Delivery Channel.

It assumes that the new Delivery Channel is based on a new address attribute. If it is not based on a new address attribute, then the initial steps may be unnecessary.

### Creating a Delivery Channel

1. [Find or create the User Attribute](#) that you want to use for addressing in Clinical Portal.
2. Add the New Attribute in Orion Health Platform in the following:
  - [Concerto Roles and Groups](#)
  - [Attribute Schema Details](#).
3. [Create the Delivery Channel](#) by referencing the new Identity Attribute you created in the **Address Schema** and **Address Property** fields and completing all relevant details.

## Finding or Creating the User Attribute

### Finding the User Attribute

1. Log in to Clinical Portal.
2. Navigate to **Concerto > Roles & Groups**.
3. Select the **Group** that you want to add the user attribute to.  
The **General** tab displays the available **Group Attributes**.

General Security

**Group Details**

Name: Notifications

Description: Group to contain users that are able to subscribe to Concerto Notifications

Automatic Membership: ☐

Synchronize LDAP Membership: ☐

Inactivity Timeout:

**Group Attributes**

Name	Display Name	Input Type	Display	User Editable	Encrypt
EMR	My EMR	Text Field	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

OK Cancel Save

### Creating the User Attribute

1. Enter the new user attribute in the field provided.

General Security

**Group Details**

Name: Notifications

Description: Group to contain users that are able to subscribe to Concerto Notifications

Automatic Membership: ☐


Synchronize LDAP Membership: ☐

Inactivity Timeout:

**Group Attributes**

Name	Display Name	Input Type	Display	User Editable	Encrypt
EMR	My EMR	Text Field	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

OK Cancel Save

2. Select the **Add** icon  to create the new user attribute.

3. Configure the following fields with the appropriate values:

- **Display Name**
- **Input Type**
- **Display**
- **User Editable**
- **Encrypt.**

4. Select the **Save** button to save the new user attribute.

### Adding the New Attribute in the Attribute Schema Details

1. Log in to Orion Health Platform.
2. Navigate to **General > Identity** from the **Configuration** menu.
3. Select the **Identity Schema** tab to display the attribute schemas.

Configuration   Monitoring   Platform	
Identity Sources	Identity Schema   Query Executor Configuration
<input type="text"/>	
Notifications	Group
Notifications Admin	Group
IdentityStandard	Attribute Schema
NotificationsRecipient	Attribute Schema
Person	Attribute Schema

4. Select the **NotificationsRecipient** attribute schema to display the attribute schema details in the right panel.

### Attribute Schema

Save   Revert

#### Schema Name

Name:

#### Attribute Schema Details

Identity Class:

Name ▲	Type
DirectEmail	STRING
EMR	STRING

New...  
Delete

5. Select the **New...** button.  
The **Add Attribute** dialog box is displayed.



6. Enter the new attribute name in the **My Attribute** field.
7. Select the **OK** button to add the new attribute to the attribute schema details.
8. Select the **Save** button to save the change.

### Adding the New Attribute in Orion Health Platform

1. Log in to Orion Health Platform.
2. Navigate to **General > Identity** in the **Configuration** menu.
3. Select the **Concerto Identity Source Configuration** identity source in the **Identify Sources** tab.  
**Concerto Identity Source Details** is displayed in the right panel.

### Concerto Identity Source Details

Save
 Revert

#### Concerto Server Configuration

Concerto Server:

Service URL:

#### Namespaces

Primary Namespace: \*

Example: ExternalNamespace1

Alternate Namespaces:

Example: ExternalNamespace1  
ExternalNamespace2

#### Standard Attribute Configuration

Schema Name	Attribute Name	Concerto Group Name	Concerto Attribute Name
IdentityStandard	emailAddress	<input type="text" value="Users"/>	<input type="text" value="E-mail"/>
IdentityStandard	fullName	<input type="text" value="Users"/>	<input type="text" value="Full Name"/>
Person	namePrefix	<input type="text"/>	<input type="text"/>
Person	givenName	<input type="text"/>	<input type="text"/>
Person	middleName	<input type="text"/>	<input type="text"/>
Person	familyName	<input type="text"/>	<input type="text"/>
Person	gender	<input type="text"/>	<input type="text"/>
Person	dateOfBirth	<input type="text"/>	<input type="text"/>
NotificationsRecipient	EMR	<input type="text" value="Notifications"/>	<input type="text" value="EMR"/>

- Select the **Add new attribute** button.  
The **Specify schema and attribute name** dialog box is displayed.

#### Specify schema and attribute name

Schema name is required



5. Enter `NotificationsRecipient` in the **Schema** field.
6. Enter the attribute name in the **Attribute** field.
7. Select the **OK** button to create the new attribute.  
The new attribute is displayed in the **Standard Attribute Configuration** panel.
8. Enter the Concerto group name in the **Concerto Group Name** field.
9. Enter the Concerto attribute name in the **Concerto Attribute Name** field.

**Standard Attribute Configuration**


[Add new attribute](#)

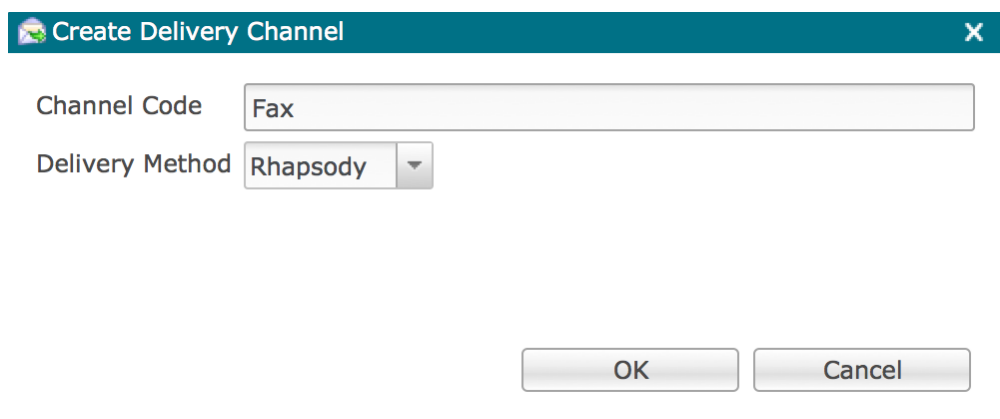
Schema Name	Attribute Name	Concerto Group Name	Concerto Attribute Name
IdentityStandard	emailAddress	Users	E-mail
IdentityStandard	fullName	Users	Full Name
Person	namePrefix		
Person	givenName		
Person	middleName		
Person	familyName		
Person	gender		
Person	dateOfBirth		
NotificationsRecipient	EMR	Notifications	EMR
NotificationsRecipient	faxNumber	Notifications	Fax Number

10. Select the **Save** button to save the new attribute.

## Creating the Delivery Channel

When you add or modify a delivery channel, you must update the mappings associated with the Notifications input and output messages in Rhapsody. Refer to [Notifications Rhapsody Routes](#) for details.

1. Navigate to **Notifications > Delivery Channels** from the **Configuration** menu.
2. Select the **Add** icon  at the top of the **Delivery Channels** tab.  
The **Create Delivery Channel** dialog box is displayed.



**Create Delivery Channel**

Channel Code

Delivery Method

OK Cancel

Delivery Channels using the SMTP channel can be unreliable and may cause the OHP to hang when processing. Refer to the **SMTP channel is inherently unreliable** section in [Warnings and Recommendations](#) for details.

3. Enter a unique code to identify the delivery channel.
4. Select the **OK** button.  
The **Delivery Channels** tab is displayed with the delivery channel details in the right panel.

Every channel code needs specific handling configured in Rhapsody configuration to implement the actual delivery mechanism. Refer to [Notifications Rhapsody Routes](#) for details.

**Delivery Channel Details**
Save Revert

**Configured Settings**

Channel Code: Fax

Channel enabled: ☒ on

Name:

Address Label:

Use Attributes: ☒ yes

Address Schema:

Address Property:

Identifier Namespace:

Address Displayed: ☒ yes

Address Editable: ☐ no

Read Only Explanation:

Text Notifications: ☒ yes

Supported Methods: ☐ Detail ☒ Non-detail ☐ Daily Summary

Documents: ☒ yes

**Additional Properties**

Properties: Key ^	Value

**Use of Channel in Audiences**


Audiences:	Audience Name ^	Use of Channel
	Default Audience	Allowed
	System Audience	Allowed

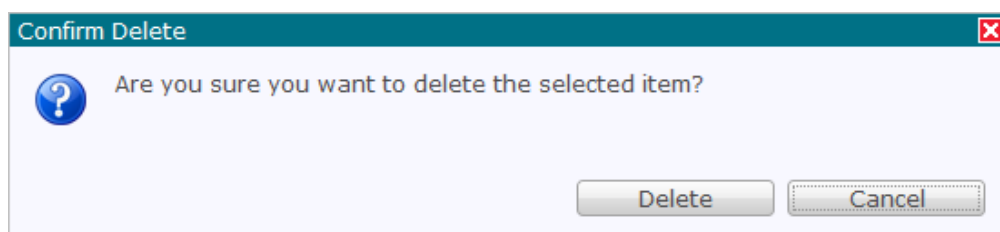
- Configure the **Delivery Channel Details**. Refer to [Configuring Notification Delivery Channels](#) for details.
- Select the **Save** icon at the top of the panel to save the delivery channel details.
- Configure the **Delivery Channel Use** as an **allowed** or the **Primary Channel** for Audiences. Refer to [Configuring Audiences](#) and [Specifying the Primary Delivery Channel for an Audience](#) for details about assigning the primary and allowed channels for audiences.

### Configuring Delivery Channel Use in Audiences

Only users in audiences that specify the given Delivery Channel as allowed or primary will be able to see or subscribe to this channel. The Delivery Channel will not deliver notifications to users from other audiences.

## Deleting a Delivery Channel

1. Select the delivery channel and select the **Delete** icon  at the top of the **Delivery** panel.  
The **Confirm Delete** dialog box is displayed.



2. Select the **Delete** button to delete the delivery channel.

## Specifying the SMTP Configuration

### The SMTP channel is inherently unreliable.

The SMTP channel is implemented to provide a way of sending notifications through email if Rhapsody is unavailable in the environment. This channel is inherently unreliable and should not be used as a primary delivery channel in a production environment.

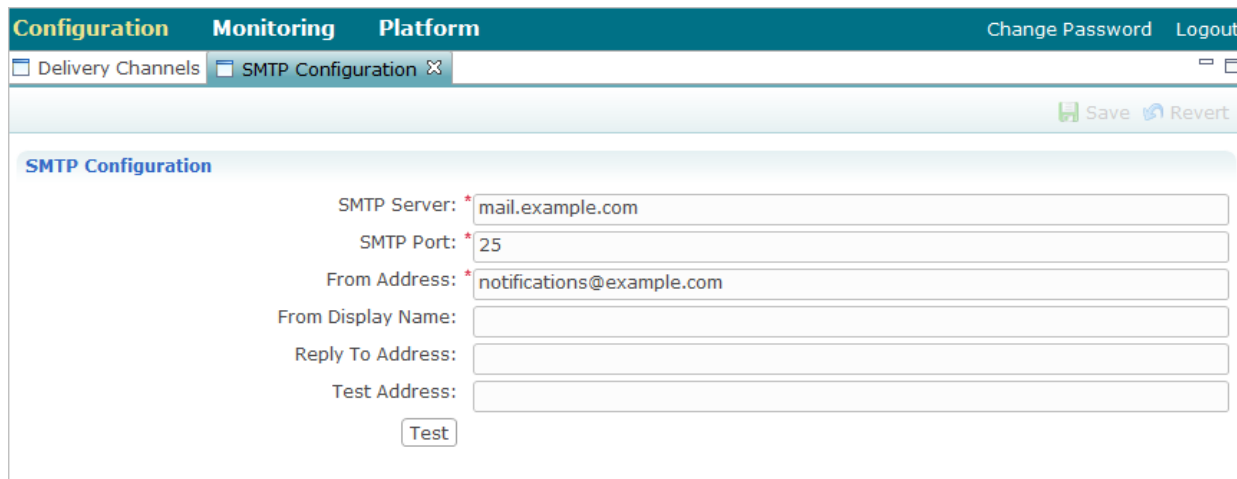
If the delivery of a notification fails, for example, because of a wrongly configured recipient email address, then Notifications drops the message and the original message is untraceable. As such, emails should be delivered through the email delivery channel.

If you are using Platform version 8.9 or earlier and the SMTP server becomes unresponsive for more than one minute during the SMTP message delivery, the connection used by the SMTP Delivery Channel will not be removed.

To prevent running out of ports in the Notifications server, it is recommended that you upgrade to Platform 8.10 or later.

1. Log in to Orion Health Platform as an administrator.

2. From the left pane, select **Notifications > Delivery Channels**. The Delivery Channels are displayed.
3. Select the **SMTP Configuration** tab. The SMTP Configuration screen is displayed:



The screenshot shows the 'SMTP Configuration' screen. At the top, there are tabs for 'Configuration', 'Monitoring', and 'Platform'. Below these are sub-tabs for 'Delivery Channels' and 'SMTP Configuration'. The 'SMTP Configuration' tab is active. The screen contains the following fields:

- SMTP Server: \* mail.example.com
- SMTP Port: \* 25
- From Address: \* notifications@example.com
- From Display Name:
- Reply To Address:
- Test Address:

There is a 'Test' button at the bottom of the form. At the top right of the configuration area, there are 'Save' and 'Revert' buttons.

4. Complete the following fields as required:

Field	Description
SMTP Server	Specify the name of your mail server hostname. For example, YourHostName.
SMTP Port	Specify your mail server SMTP port.  By industry convention, this is typically port 25.
From Address	Specify the email address that you want to appear in the sender field in email notifications, for example <Joe.Bloggs@OrionHealth.com>.
From Display Name	If required, specify the name that you want to appear in the Sender field in email notifications, for example Joe Bloggs.
Reply To Address	To send replies to an address other than the one specified in the <b>From Address</b> field, specify the alternate address.  If this field is left blank, it defaults to the address specified in the <b>From Address</b> field.

Field	Description
Test Address	To test this configuration, specify an email address.

- To verify the configuration, select the **Test** button.
- Select the **Save** button.

## Configuring Notification Messages

Notifications allows a healthcare provider to subscribe to notifications of events, for patients the provider has a relationship with. If the provider has subscribed to such an event, then when an event of this kind occurs, a notification message is sent to the provider.

The administrator can use the Template Processor to configure the formats of these messages.

**Configuring Notification Messages** includes:

- [Configuring Digests](#)
- [Configuring the Header, Footer and Summary](#)
- [Template Processor Format Examples](#)
- [Template Processor Variables for Messages and Activity Stream](#)

## Configuring Digests

Notifications can send a digest notification to healthcare providers. Refer to [Digest](#) for details.

The administrator can use the Template Processor to configure the message formats of the body of notification digests.

- From Orion Health Platform, navigate to **Configuration > Notifications (Advanced)**.
- Select the **Digests** tab to display the digests, as shown in the following screenshot:

The screenshot shows the 'Configuration' tab in the Orion Health interface. Under the 'Configuration' tab, there are four sub-tabs: 'Events', 'Digests', 'Message Content Resolver', and 'Receiving EMR'. The 'Digests' tab is currently selected. Below the tabs is a search bar labeled 'Search...'. Underneath the search bar is a table with two columns: 'Daily Summary' and 'Digest'. The table is currently empty.

- To display the digest properties in the **Properties** panel, select the digest you want to configure, as shown in the following screenshot:

The screenshot shows the 'Digest Details' panel. At the top, there are 'Save' and 'Revert' buttons. Below them is the 'Properties' section. The 'Id' field is set to 'dailySummary'. The 'Secure Delivery' checkbox is unchecked. The 'Name' field is set to 'Daily Summary'. The 'Subject' field is empty. The 'Digest Format' field contains a complex template processor code. The code is as follows:

```
One or more patients for whom you are recorded as the <%var andcnt=0%><%
for each recipientQualifier in content.recipientQualifiers%><%
=recipientQualifier.description%><%
var andcnt = andcnt + 1 %><%if andcnt < content.recipientQualifiers.size%> and
<%end if%><%end for%> have had activity at << INSERT SYSTEM NAME HERE
>> within the last 24 hours.

<%for each recipientQualifier in content.recipientQualifiers%>
The following events have occurred for patients for whom you are recorded as
the <%=recipientQualifier.description%>:
<%for each notificationType in content.notificationTypes%>
<%=content.getEventCount(recipientQualifier, notificationType)%> <%
=notificationType.type%>
<%end for%><%end for%>

To view the detail for these events, please login to << INSERT SYSTEM NAME
HERE >> at << INSERT URL HERE >>
```

- You can update the **Name** and **Digest Format** fields. Enter the appropriate template processor code in the **Digest Format** field.

Field	Description
Id	The unique identifier of the digest.
Secure Delivery	A checkbox that when selected, specifies that the digest is delivered by the secure delivery method.
Name	The name of the digest.
Subject	The Template Processor configuration control for the digest subject line.

Field	Description
Digest Format	The Template Processor configuration control for the digest body.

- A digest is delivered only if the user has subscribed to receive a digest.
- A digest will only include notifications that occurred since the user has subscribed to the digest.
- If the user has subscribed to receive a digest and no new notifications are received since the last digest, then no digest will be sent.
- The delivery time of the digest may vary as Notifications will process the digest one user at a time.

Refer to [Modifying Event Types](#) for details on specifying the message format.

Refer to [Template Processor Variables for Messages and Activity Stream](#) for details of the objects that can be used in the Template Processor configuration control for messages.

Refer to [Template Processor Format Examples](#) for further details and message examples.

Refer to [Scheduling Digests](#) for details on scheduling the timing of digests.

## Scheduling Digests

Notifications allows a health care provider to subscribe to digests of notifiable events within Clinical Portal.

The administrator can configure the scheduling of the task that generates these digest notifications. By default, this runs once a day at 5 a.m.

1. Log in to Orion Health Platform. The main screen opens with the **Configuration** option selected.
2. From the left pane, select **Scheduled Tasks**. This displays the scheduled task page, as shown in the following screenshot:

Configuration	Monitoring	Platform
▼ Scheduled Tasks		
Register translation problem	17,47 * * * * *	
Message Archive	43 3 * * * *	
NotificationDigestTask	0 5 * * * *	



3. Select **NotificationDigestTask**. The details display in the right panel, as shown in the following screenshot.

Scheduled Task Configuration

Save
 Revert

Details

Namespace: com.orchestral.notification.digest.impl  
 Name: NotificationDigestTask

Configuration

☐ Disabled
 ☐ Simple
 ☒ Advanced

Scheduled for:  times per

Cron Timing:

Upcoming Executions:
 

15 September 2011 05:00:00  
 16 September 2011 05:00:00  
 17 September 2011 05:00:00  
 18 September 2011 05:00:00  
 19 September 2011 05:00:00

4. Update the settings as required:

To disable the task	Select the <b>Disabled</b> option.
To specify how often the digest should be created in an hour, day, month, or year	Select the <b>Simple</b> option. In the <b>Scheduled For</b> field, specify the number of times per hour/day/month/year.
To use Cron Timing to specify the schedule	Select the <b>Advanced</b> option. In the <b>Cron Timing</b> field, specify how often you would like to schedule the digest. This field uses the following format: <Minutes> <Hour> <Day> <Month> <Year>. For example, to schedule the digest to be generated at 5:18am every day, type 18 5 * * *. For example, to schedule the digest to be generated at 5am, 10am and 10pm every day, type 0 5,10,22 * * *. For example, to schedule the digest to be generated at 5am on the first day of every month, type 0 5 1 * *.

5. Select the **Save** icon to save the changes..

## Formatting Plain Text and HTML Notifications

Notifications allows a healthcare provider to subscribe to notifications of notifiable events within Clinical Portal. Refer to [Notification Messages](#) in the *Notifications User Manual* for details.

The administrator can use the Template Processor to configure the message formats of the notification message header and footer formats and the summary message body format.

The summary message, header, footer, and HTML template must not contain any patient information since these may be delivered through channels that are not secure, such as the email delivery channel.

To configure the notification message header and footer formats, and the summary body format:

1. From Orion Health Platform, navigate to **Configuration > Notifications**.
2. Select the **Message Formats** tab to display the **Message Formats** panel as shown in the following screenshot:

The screenshot shows the Orion Health Platform interface with the 'Configuration' tab selected. Under 'Notifications', the 'Message Formats' sub-tab is active. The 'Message Formats' panel contains the following sections:

- Detail Message Body:** A text area for formatting detail messages.
- Summary Body:** A text area for formatting the summary body. It includes a note: 'The summary body is displayed on top of the summary message. It is followed by the message footer.' and a sample text: 'A patient for whom you are recorded as the <var andont=0%><%for each recipientQualifier in recipientQualifiers%><%=recipientQualifier.description%><%var andont = andont + 1 %><%if andont < recipientQualifiers.size%> and <%end if%><%end for%> has had recent activity at << insert system name here >>'. Below this is a link: 'To view the detail for this event, please log into << INSERT SYSTEM NAME HERE >> at << INSERT URL HERE >>'.
- Message Header:** A text area for formatting the message header. It includes a note: 'The message header is displayed at the top of both summary and detail messages.'
- Message Footer:** A text area for formatting the message footer. It includes a note: 'The message footer is displayed at the bottom of both summary and detail messages.' and sample text: 'To unsubscribe, please change your subscriptions within << INSERT SYSTEM NAME HERE >> by opening the Notifications menu and utilising My Subscriptions.' and 'To contact support, please call << INSERT SUPPORT DETAILS HERE >>'.
- HTML template:** A text area for formatting the HTML template. It includes a note: 'The template for HTML emails. The template must either be blank or contain the message placeholder [TEMPLATE\_MESSAGE\_BODY]'. Below this is a sample HTML code snippet:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html>
<head>
<meta charset="UTF-8">
<title></title>
<style>
a {
color: #00697f;
}
</style>
</head>
<body leftmargin="0" topmargin="0" marginwidth="0" marginheight="0" bgcolor="#ffffff"> <!-- Some email clients strip the bgcolor -->
<div id="background" style="background-color:#ffffff; padding:30px;"> <!-- If the bgcolor is stripped we have a backup, and set the padding -->
<table border="0" align="center" cellpadding="30" cellspacing="0" style="border:1px solid #e1e1df; max-width:90%;>
<tbody>
<tr>
<td bgcolor="#ffffff" style="font-family:'Helvetica Neue', Helvetica, Arial; font-size:13px; color:#313130;">
<h1 style="font-weight: normal; font-family: Open Sans, 'Helvetica Neue', Helvetica, Arial; font-size:32px; margin-top:0px; color:#00697f">
<< INSERT HEADING HERE >>
</h1>
<p>
[TEMPLATE_MESSAGE_BODY]
</p>
</td>
</tr>
</tbody>
</table>
<table border="0" align="center" cellpadding="5" cellspacing="0" style="max-width:90%;>
<tbody><tr>
<td bgcolor="#ffffff" style="font-family:'Helvetica Neue', Helvetica, Arial; font-size:13px; color:#636360;">
```

3. Update the **Summary Body**, **Message Header**, and **Message Footer** fields described in the following table, by entering the appropriate template processor code.

Field	Description
Summary Body	This refers to the Template Processor configuration for the notification message summary.
Message Header	This refers to the Template Processor configuration for the notification message header.
Message Footer	This refers to the Template Processor configuration for the notification message footer.
HTML Template	<p>This refers to the Template Processor configuration for the notification message header.</p> <p>The HTML should either be blank or contain the placeholder <b>[TEMPLATE_MESSAGE_BODY]</b>.</p> <div> <p>The HTML template is only available when delivery is done using Rhapsody routes which are configured to use the template. The SMTP delivery channel does not use the HTML template. Refer to <a href="#">Notifications Rhapsody Routes</a> for more details.</p> </div>

If you want to send HTML-formatted emails, use the following sample HTML template as a reference to help you build your customized HTML template:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html>
  <head>
    <meta charset="UTF-8">
    <title></title>
    <style>
      a {
        color: #00697f;
      }
    </style>
  </head>
  <body leftmargin="0" topmargin="0" marginwidth="0" marginheight="0"
  bgcolor="#f1f1ef"> <!-- Some email clients strip the bgcolor -->
  <div id="background" style="background-color:#f1f1ef; padding:30px;"> <!-- If the
  bgcolor is stripped we have a backup, and set the padding -->
    <table border="0" align="center" cellpadding="30" cellspacing="0"
    style="border:1px solid #e1e1df; max-width:90%;">
      <tbody>
        <tr>
```

```

        <td bgcolor="#FFFFFF" style="font-family:'Helvetica Neue', Helvetica,
        Arial; font-size:13px; color:#313130;">
        <h1 style="font-weight: normal; font-family:'Open Sans', 'Helvetica
        Neue', 'Helvetica', 'Arial'; font-size:32px; margin-top:0px; color:#00697f">
        << INSERT HEADING HERE >>
        </h1>
        <p>
        [TEMPLATE_MESSAGE_BODY]
        </p>
        </td>
    </tr>
</tbody>
</table>
<table border="0" align="center" cellpadding="5" cellspacing="0" style="max-
width:90%;">
    <tbody><tr>
        <td bgcolor="#f1f1ef" style="font-family:'Helvetica Neue', Helvetica, Arial;
        font-size:13px; color:#636360;">
        <p>
        &copy; << INSERT COPYRIGHT, DISCLAIMER AND UNSUBSCRIBE LINK HERE >>
        </p>
    </tr>
</tbody>
</table>
</div>
</body>
</html>

```

Refer to [Modifying Event Types](#) for details on specifying the detail message format.

Refer to [Template Processor Variables for Messages and Activity Stream](#) for details of the variables that can be used in the Template Processor configuration control for messages.

Refer to [Template Processor Format Examples](#) for further details and message examples.

## Template Processor Format Examples

Notifications allows a healthcare provider to subscribe to notifications of notifiable events within Clinical Portal. The administrator can use the Template Processor to configure the message formats of the notifications.

**Template Processor Format Examples** describes how to use lookup types, repeating types, and dates. It also provides sample detail and digest messages using the Template Processor. Refer to [Template Processor Variables for Messages and Activity Stream](#) for details on the variables available for these messages.

### Lookup Type

Lookup types have two properties that can be used:

Property Name	Property Description
code	This refers to the coded value of the type.
description	This refers to the description of the type.

The following code is an example of using a lookup type property:

```
Gender: <%=patientSummary.Gender.description%> (<%=patientSummary.Gender.code%>)
```

## Repeating Types

The repeating types are zero-based. The following code is an example of getting the first FamilyName:

```
<%=patientSummary.Name[0].FamilyName%>
```

You can loop over all names instead. The list can also be obtained with the following example code:

```
<%for each name in patientSummary.Name%>
  <%=name.FamilyName%>, <%=name.GivenName%>
<%end for%>
```

## Dates

The `dates` type in the data model data wraps the actual date. This means you need to use the `date` property to get the actual date for formatting. The following code is an example of getting an actual date:

```
<%=DateFormat.format(patientSummary.dateTimeOfBirth)%>
```

## Sample Detail Message

The following code is an example of a sample detail (secure) message:

```
Patient Name: <%=patientSummary.Name[0].FamilyName%>,
<%=patientSummary.Name[0].GivenName%>
Patient Gender: <%=patientSummary.Gender.description%>
(<%=patientSummary.Gender.code%>)
DoB: <%=DateFormat.format(patientSummary.dateTimeOfBirth)%>

<%for each recipientQualifier in recipientQualifiers%>
The following events have occurred for patients for whom you are recorded as the
<%=recipientQualifier.name%>:
  <%for each notificationType in notificationTypes%>
    <if notificationType.type = "Patient Encounter Changed - EncounterEvent"%>
      The patient encounter details have been changed.
    <%end if%>
  <%end for%>
<%end for%>
```

```
<%if notificationType.type = "Inpatient Discharge - EncounterEvent"%>
    The patient has been discharged.
<%end if%>
<%end for%>
<%end for%>
```

Depending on how the rules are configured, a clinical event can trigger multiple notification types. Each recipient receives one notification message per event, containing details of one or more notification types. The detail message format can be configured to contain messages for each notification type. Refer to [Notifications Workflow of an Event with Multiple Notification Types](#) for details.

## Sample Digest Message

The following code is an example of a digest message:

```
One or more patients for whom you are recorded as the <%var andcnt=0%><%for each
recipientQualifier in
content.recipientQualifiers%><%=recipientQualifier.description%><%
var andcnt = andcnt + 1 %><%if andcnt < content.recipientQualifiers.size%> and
<%end if%><%end for%> have had activity at << INSERT SYSTEM NAME HERE >> within the
last 24 hours.

<%for each recipientQualifier in content.recipientQualifiers%>
The following events have occurred for patients for whom you are recorded as the
<%=recipientQualifier.description%>:
<%for each notificationType in content.notificationTypes%>
<%=content.getEventCount(recipientQualifier, notificationType)%>
<%=notificationType.type%>
<%end for%><%end for%>

To view the detail for these events, please login to << INSERT SYSTEM NAME HERE >>
at << INSERT URL HERE >>
```

## Template Processor Variables for Messages and Activity Stream

Notifications allows a healthcare provider to subscribe to notifications of notifiable events within Clinical Portal. The administrator can use the Template Processor to configure the message formats of the notifications.

**Template Processor Variables for Messages and Activity Stream** lists variables that are available to the Template Processor for configuring the message formats and Activity Stream.

Not all variables in the Template Processor are available for Notifications messages. Refer to [Common Variables](#) for details on the available variables in the Template Processor.

## Summary Message Variables

The variables in the following table and their properties can be used in the Template Processor when configuring the summary (insecure) notification message format. Refer to [Variable Types](#) for details of variable types.

Variable Name	Variable Type	Description
recipient	Identity	This refers to the recipient of the notification.
eventType	EventType	This refers to the event type of the notification.
recipientQualifiers	Set<RecipientQualifier>	Recipients receive notifications based on a set of qualifiers. When these qualifier conditions are met, a notification is triggered. This variable is a set of qualifiers that triggered the current notification which can be formatted into the message.
notificationTypes	Set<NotificationType>	This refers to the set of notification types the incoming event has triggered.

## Detail Message Variables

The variables and their properties available for [Summary Messages](#) and the variables listed below can be used in the Template Processor when configuring the detail (secure) notification message format.

Variable Name	Description
eventName	This refers to the name of the event type.
documentMetaData	This refers to the document metadata object.
patientSummary	This refers to the patient summary object.
eventContent	This refers to the event content object.

The `documentMetaData`, `patientSummary`, and `eventContent` variables correspond to the top level attributes available in the event type model. Removing a top level attribute from the model means that it will not be available in the Template Processor. Any new top-level attribute that is added is available in the Template Processor.

## Activity Stream Variables

The variables and their properties available for [Summary Messages](#) and [Detail Messages](#) and the variables listed below can be used in the Template Processor when configuring the activity stream:

Variable Name	Variable Type	Variable Type Description
notificationTypeNames	Collection<String>	The names of the notification types the incoming event has triggered.

## Digest Message Variables

The following variables and their properties can be used in the Template Processor when configuring the digest notification message format:

Variable Name	Properties	Property Description
content	digest recipient notificationTypes recipientQualifiers	This refers to the digest. This refers to the recipient identity. This refers to the set of all notification types of the message. Recipients receive notifications based on a set of qualifiers. When these qualifier conditions are met, a notification is triggered. This variable is a set of qualifiers that triggered the current notification which can be formatted into the message.

The following variables and their methods are available to the Template Processor for configuring the digest notification message format.

Variable Name	Methods	Method Description
content	List <code>getEvents(recipientQualifier, notificationType)</code> int <code>getEventCount(recipientQualifier, notificationType)</code>	This returns the list of notification events that matches the specified recipient qualifier and notification type. This returns the number of notification events that matches the specified recipient qualifier and notification type.

Refer to [Digest Message Example](#) for a sample message using methods.



## Variable Types

The following variable types and their properties are available in the Template Processor when configuring message templates:

Variable Type	Properties	Description
TriggerEvent	eventData eventTypeName  All top level attributes such as patientSummary. For example, myEvent.patientSummary	This refers to the dictionary event data. This refers to the name of the event type.
EventType	name description system	This refers to the name of the event type. This refers to the description of the event type. This refers to a flag specifying if the event type is a system event.
NotificationType	uniqueId type system	This refers to the unique identifier of the notification type. This refers to the user readable notification type. This refers to a flag specifying if the notification type is a system type.
RecipientQualifier	uniqueId name description	This refers to the unique identifier of the recipient qualifier. This refers to the user readable name. This refers to the description of the recipient qualifier.
Identity	emailAddress fullName	This refers to the email address of the user. This refers to the name of the user.

## Common Variables

The following variables can be used on all templates.

Variable Name	Description
DateFormat	This refers to the date.

Variable Name	Description
TimeFormat	This refers to the time.
DateTimeFormat	This refers to the date and time.
CodeSetLookupHelper	<p>This refers to the helper variable with single function, <code>getDescriptionFromCodeSetService</code>, which returns the description of a code definition using the code set service (refer to <a href="#">Code Sets</a> for details on code sets and the code set service). For example, if the code set <code>com.orchestral.notification.blah</code> contains a code definition with code <code>01</code>, codingSystem <code>ORION</code> and description an example description, then the following script creates the variable <code>codeSetDescription</code> with the value of an example description:</p> <pre>&lt;%var codeSetDescription = CodeSetLookupHelper.getDescriptionFromCodeSetService("01","ORION", "com.orchestral.notification.blah")%&gt;</pre> <p>If the code set service cannot find a matching code definition or one without a description, the above script creates the variable <code>codeSetDescription</code> with the value of null.</p>

These tables are too wide to print in PDF. A printable version is available as an Excel spreadsheet. Click [here](#) to download the spreadsheet. The spreadsheet is also available in [Printable Documents](#).

Refer to [Template Processor Format Examples](#) for sample formats.

Some Detail Message formats for default Event Types include code set lookups using the `CodeSetLookupHelper` variable. However, there is no guarantee that the relevant code definitions are present when retrieved. Code definitions may need to be manually inserted into a code when Notifications is retrieving code definitions from the code set service since these code definitions are not automatically added.

## Configuring Notifications

Notifications allows a provider to subscribe to notifiable events. Once event types and their associated notifications are configured, the provider can subscribe to any of these notifications within Clinical Portal.

Before configuring a notification, the event type that triggers the notification needs to be defined. Refer to [Configuring Event Types](#) for details.
































- Depending on how the rules are configured, a clinical event can trigger multiple notification types. Each recipient receives one notification message, containing details of one or more notification types. Refer to [Notifications Workflow of an Event with Multiple Notification Types](#) for details.
- Depending on how the rules are configured, Notifications can also send more than one notification message to different recipients. Refer to [Notifications Workflow of a Typed Clinical Event with Multiple Event Types](#) for details.


The administrator can then configure the notifications for this event type. Refer to the following topics:

- [Viewing Notifications](#)
- [Adding and Deleting Notifications](#)
- [Configuring Notification Types](#)
- [Configuring Notification Rules](#)

## Viewing Notifications

1. From Orion Health Platform, navigate to **Configuration > Notifications**. This displays the **Notifications** tab, with the notifications listed in the left pane, as shown in the following screenshot:

Configuration		Monitoring	Platform
<input type="checkbox"/> Notifications	<input type="checkbox"/> Audiences	<input type="checkbox"/> Message Formats	<input type="checkbox"/> Standard Subscriptions
Search...			  
	A new document (imaging report) is	@ImagingReport -	
	A new document is available - LabEv	@TranscribeDocum	
	Clinic Appointment Completed	@Appointment	
	Default delivery methods changed	@Standard Subscri	
	Failed Mail Delivery	@FailedMailDeliver	
	Final Laboratory Result is available -	@LaboratoryObser	
	Final Microbiology Result available -	@LaboratoryObser	
	Final Radiology Report is available -	@ImagingReport -	
	Inpatient Admission - EncounterEver	@EncounterEvent &	
	Inpatient Discharge - EncounterEven	@EncounterEvent &	
	Interim Microbiology Result available	@LaboratoryObser	
	New Secure Mail Received	@NewMailReceived	
	Notification added	@Notification Chan	
	Notification deleted	@Notification Chan	
	Notification disabled	@Notification Chan	
	Patient is admitted to ER - Encounte	@EncounterEvent &	
	Patient is discharged from ER - Enco	@EncounterEvent &	
	Standard notifications changed	@Standard Subscri	
	Subscriptions changed by administra	@User Subscriptior	
	appointment cancelled	@AppointmentEver	
	appointment reminder	@AppointmentRem	
	appointment updated	@AppointmentEver	
	deleted shared file	@SharedFileEvent	
	new appointment	@AppointmentEver	
	new document received	@DocumentRegistr	
	new shared file	@SharedFileEvent	
	updated shared file	@SharedFileEvent	

- Enter characters in the search field at the top of this panel to search for notifications. Select the **Clear** icon  to clear the search.
































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## Adding and Deleting Notifications

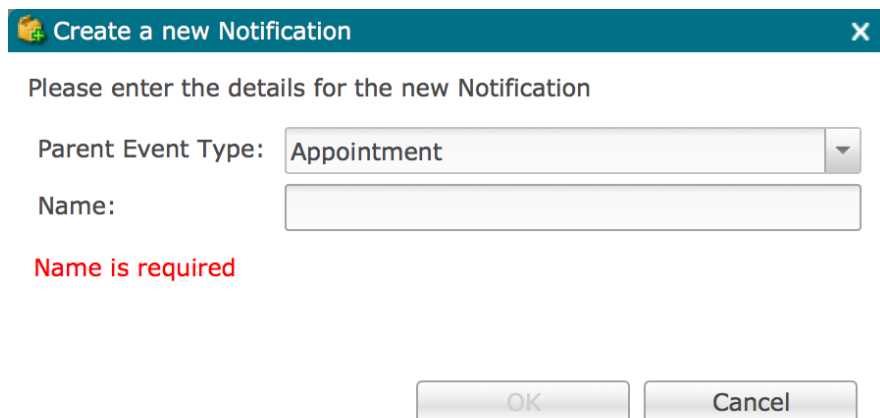
Before adding a notification, the event type that triggers the notification needs to be defined. Refer to [Configuring Event Types](#) for details.

### Adding Notifications

1. From Orion Health Platform, navigate to **Configuration > Notifications**. This displays the **Notifications** tab, with the notifications listed in the pane on the left, as shown in the following screenshot:

Configuration		Monitoring	Platform
<input type="checkbox"/> Notifications	<input type="checkbox"/> Audiences	<input type="checkbox"/> Message Formats	<input type="checkbox"/> Standard Subscriptions
Search...			  
	A new document (imaging report) is	@ImagingReport -	
	A new document is available - LabEv	@TranscribeDocum	
	Clinic Appointment Completed	@Appointment	
	Default delivery methods changed	@Standard Subscri	
	Failed Mail Delivery	@FailedMailDeliver	
	Final Laboratory Result is available -	@LaboratoryObser	
	Final Microbiology Result available -	@LaboratoryObser	
	Final Radiology Report is available -	@ImagingReport -	
	Inpatient Admission - EncounterEver	@EncounterEvent &	
	Inpatient Discharge - EncounterEven	@EncounterEvent &	
	Interim Microbiology Result available	@LaboratoryObser	
	New Secure Mail Received	@NewMailReceived	
	Notification added	@Notification Chan	
	Notification deleted	@Notification Chan	
	Notification disabled	@Notification Chan	
	Patient is admitted to ER - Encounte	@EncounterEvent &	
	Patient is discharged from ER - Enco	@EncounterEvent &	
	Standard notifications changed	@Standard Subscri	
	Subscriptions changed by administra	@User Subscriptior	
	appointment cancelled	@AppointmentEver	
	appointment reminder	@AppointmentRem	
	appointment updated	@AppointmentEver	
	deleted shared file	@SharedFileEvent	
	new appointment	@AppointmentEver	
	new document received	@DocumentRegistr	
	new shared file	@SharedFileEvent	
	updated shared file	@SharedFileEvent	

- To add a notification, select the **Add** icon  at the top of the **Notification** panel and select **New Notification** from the drop-down menu. This opens a **Create a new Notification** dialog, as shown in the following screenshot:



**Create a new Notification** [X]

Please enter the details for the new Notification


Parent Event Type:

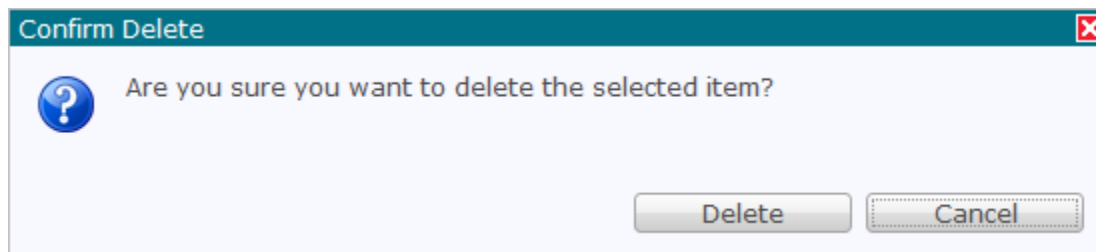
Name:

**Name is required**


3. Select the event type the notification relates to from the **Parent Event Type** drop-down list.
4. Enter the name of the new notification in the **Name** field, and select the **OK** button to add the notification.
5. Select the **Save** button to save the new notification.

## Deleting Notifications

1. From Orion Health Platform, navigate to **Configuration > Notifications**. This displays the **Notifications** tab, with the notifications listed in the pane on the left.
2. Select the notification and select the **Delete** icon  at the top of the **Notification** panel. This opens the **Confirm Delete** dialog, as shown in the following screenshot:



**Confirm Delete** [X]

 Are you sure you want to delete the selected item?

3. Select the **Delete** button to delete the notification.

## Configuring a Notification

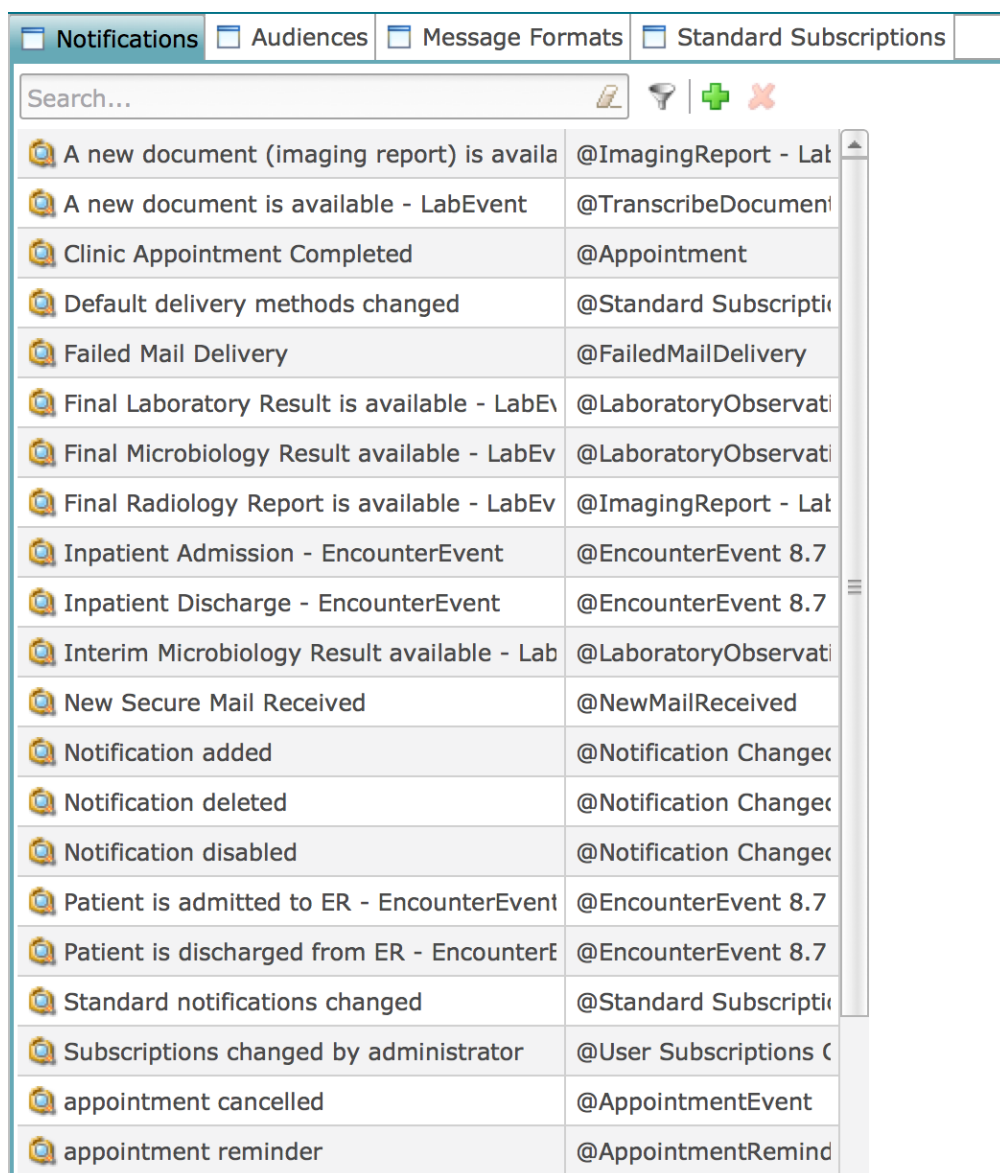
To be able to exchange documents with the EMR system from the **My Subscriptions** page, the clinician must select the EMR from the **My EMR** drop-down list that is configured on the **Receiving EMR System** page.

Notifications does not support the **Incoming Documents** option for any clinical event type.

Do not use the **Incoming Documents** option when configuring notifications. Refer to [Configuring Notification Types](#) for details.

## Configuring Notification Types

1. From Orion Health Platform, navigate to **Configuration > Notifications**. This displays the **Notifications** tab, with the notifications listed in the pane on the left, as shown in the following screenshot:



2. Select the name of the notification in the left pane, to display details of the notification in the right pane, as shown in the following screenshot:



## Notification Details

 Save  Revert

### Notification Type

Parent Event Type: EncounterEvent 8.7


Name: \* Inpatient Admission - EncounterEvent


Enabled: ☒

System: ☐

Document To Exchange: \* None

### Notification Rules

encounterType is  AND 

code is  

[Add Rule Condition](#)
[Create OR rule set](#)

This screen has the following groups of fields:

○

#### Notification Type

Field	Description
<b>Parent Event Type</b>	This refers to the name of the event type that triggers the notification.
<b>Name</b>	This refers to the name to be displayed for the notification.
<b>Enabled</b>	This refers to the checkbox that determines whether the notification is enabled. If the checkbox is not selected the notification is disabled and is not sent.
<b>System</b>	This refers to the read-only checkbox indicating whether the parent event is a system or not.
<b>Document to Exchange</b>	This indicates if documents are sent to document-enabled delivery channels. This field contains the following options: <ul style="list-style-type: none"> <li><b>None</b> - No document is sent.</li> </ul>

Field	Description
	<ul style="list-style-type: none"> <li>• <b>Incoming Document</b> - The original document is sent.</li> <li>• <b>Generated CCD (generated document)</b> - A generated CCD is sent.</li> </ul> <p>Notification s does not support the <b>Incoming Document</b> option for any clinical event type. If you configure a notification with <b>Document to Exchange</b> set to <b>Incoming Document</b>, a notification will not be generated and an error is logged. To prevent errors, do not use the <b>Incoming Document</b> option.</p>

You can also do the following:

- Update the **Name** field to rename the notification.
- Select or clear the **Enabled** checkbox to enable or disable the notification.

- Specify that you would like either the original document or a generated CCD, to be sent.

- **Notification Rules**

Refer to [Configuring Notification Rules](#) for details.

## Configuring Notification Rules

Notifications allows a provider to subscribe to notifiable events within Clinical Portal.

Before configuring notification rules, the notification needs to be defined. Refer to [Configuring Notifications](#) for details. The administrator can then configure the rules to determine when the notification should trigger.

A notification rule is made up of one or more rule sets, and rule sets are made up of one or more rule conditions. The notification is evaluated as described in the following list:

- When a notification is enabled:
  - Rule conditions within a rule set are logically evaluated together with AND. This means for a rule set to be evaluated as true, all rule conditions within the rule set must be evaluated as being true.
  - Rule sets are logically evaluated together with OR. This means if any rule set is evaluated as true, then the notification is triggered.
  - If a notification has no rules, it is triggered.
- When a notification is disabled, it is not triggered.

**Configuring Notification Rules** includes the following topics:

- [Rule Conditions](#)
- [Adding or Deleting Rule Conditions](#)
- [Adding Rule Sets](#)
- [Modifying Rule Conditions](#)
- [Repeating Composite Data Rules](#)

## Rule Conditions

Notifications allows a provider to subscribe to notifiable events within Clinical Portal. Once an event and an associated notification are created, an administrator can configure the rules of the notification to determine when it should be triggered.

A notification is made up of rule sets, and rule sets are made up of rule conditions for notification attributes.

## Configuring Rule Conditions

Rule conditions can be configured by:

- [Adding or Deleting Rule Conditions](#)
- [Modifying Rule Conditions](#)

An attribute cannot be selected for notification rules evaluation where:

- The data type of the selected attribute is not supported for rules evaluation, or
- The comparison type has not been configured for the attribute on the event builder screen. For example attributes of the data type `DATE_TIME` support two comparison types:

Comparison Type	Description
<code>PARTIAL_DATE</code>	This refers to the date to evaluate the attribute against.
<code>DATE_OFFSET</code>	This refers to the period in days before or after the date to evaluate the attribute against.

## Evaluation of Missing Data

When a rule condition includes a field that contains no data, the way the condition is evaluated depends on whether it is a positive or a negative condition. Positive conditions consider missing data not to match, while negative rules consider missing data to match.

- When a rule is defined on a field with no data, positive conditions such as `is`, `contains`, `greater_than` etc, *do not* match.
- Because negative rule conditions are intended for exclusions, negative conditions such as `is_not`, `not_contains`, *do* match when no data is supplied.

## Adding or Deleting Rule Conditions

Notifications allows a provider to subscribe to notifiable events within Clinical Portal. Once an event and an associated notification are created, an administrator can configure the rules of the notification to determine when it should be triggered.

### Adding Rule Conditions

1. From Orion Health Platform, navigate to **Configuration > Notifications**. This displays the **Notifications** tab, with the notifications listed in the pane on the left.
2. Select the name of the notification, to display details of the notification in the right pane, including the **Notification Rules** details. The details include the rule sets with their rule conditions, as shown in the following screenshot:

**Notification Rules**

ReportStatus  \*

[Add Rule Condition](#)

OR:

ReportStatus  \*

[Add Rule Condition](#)

[Create OR rule set](#)

3. Select the **Add Rule Condition** link of the rule set where the rule condition should appear. This opens the **Add a new rule condition** dialog, displaying the event type data model in a tree. Expand the model, as shown in the following screenshot:

**Add a new rule condition**

Select a node in the tree to create a rule condition on


- [-] **TranscribeDocument**
  - [-] patientSummary
  - [-] documentMetaData
  - [-] eventContent
    - OriginatingSystem
    - PatientClass
    - ReportName
    - ReportType
    - ObservationDateTime
    - ResultsReported-StatusChangedDateTime
    - ReportStatus
    - DiagnosticServiceSectionID
    - Location-PointofCare

4. Select the attribute within the model to create the rule condition on.
5. Select the **OK** button on the notification details pane to add the selected attribute to its rule condition to the data set.
6. Complete the details of the rule condition. Refer to [Modifying Rule Conditions](#) for details.

## Deleting Rule Conditions

To delete a rule condition of a notification rule set, do the following:

1. From Orion Health Platform, navigate to **Configuration > Notifications**. This displays the **Notifications** tab, with the notifications listed in the pane on the left.
2. Select the name of the notification to display the details of the notification in the right pane. The details include the rule sets with their rule conditions.

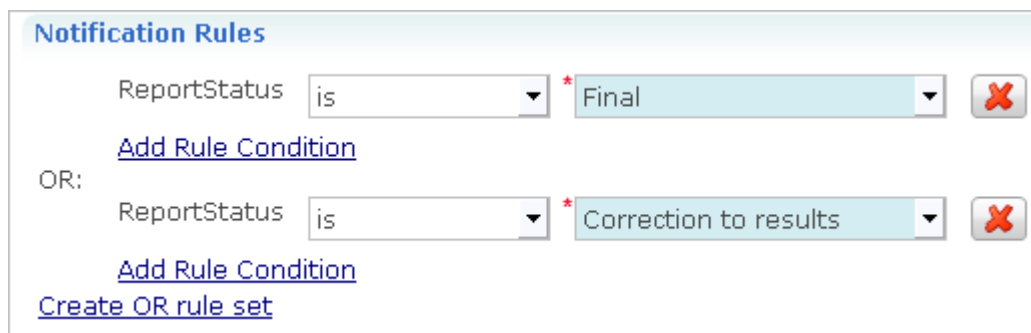
3. Select the **Delete** icon  beside the rule condition to be deleted. If there are no more rule conditions in the rule set, the rule set will also be deleted.

## Modifying Rule Conditions


Notifications allows a provider to subscribe to notifiable events within Clinical Portal. Once an event and an associated notification are created, an administrator can configure the rules of the notification to determine when it should be triggered.

To modify a rule condition for an attribute of a notification rule set, do the following:

1. From Orion Health Platform, navigate to **Configuration > Notifications**. This displays the **Notifications** tab, with the notifications listed in the pane on the left.
2. Select the name of the notification, to display details of the notification in the right pane, including the **Notification Rules** details. The details include the rule sets and their rule conditions, as shown in the following screenshot.




**Notification Rules**

ReportStatus  \*  

[Add Rule Condition](#)

OR:

ReportStatus  \*  

[Add Rule Condition](#)

[Create OR rule set](#)

3. Modify the rule condition details of the attribute:
  - Select the rule operator for the rule from the first drop-down list. The rule operators available depend on the data type of the attribute. If the incoming trigger message is missing the data for the attribute, then positive operators will be evaluated as false, and negative operators will be evaluated as true.
  - Define the comparison value the attribute will be compared against. The way the comparison value is input depends on the data type of the attribute. For example, if the data type is a string, a text field is displayed; if the data type is a lookup, a drop-down list of configured lookup values is displayed.

## Adding Rule Sets

Notifications allows a provider to subscribe to notifiable events within Clinical Portal. Once an event and an associated notification are created, an administrator can configure the rules of the notification to determine when it should be triggered.

Notification rules are made up of rule sets, and rule sets are made up of rule conditions. The rule sets determine whether the notification is triggered.

1. From Orion Health Platform, navigate to **Configuration > Notifications**. This displays the **Notifications** tab, with the notifications listed in the pane on the left.
2. Select the name of the notification, to display details of the notification in the right pane, including the **Notification Rules** details. The details can include one or more rule sets, each of which can include one or more rule conditions.

The screenshot shows a 'Notification Rules' section with two rule conditions. Each condition consists of a dropdown menu for 'ReportStatus' and a text field for the value. The first condition has 'is' in the dropdown and 'Final' in the text field. The second condition has 'is' in the dropdown and 'Correction to results' in the text field. Between the two conditions is an 'OR:' label. Below each condition is an 'Add Rule Condition' link. At the bottom is a 'Create OR rule set' link. Each condition has a red 'X' button to its right.

3. Select the **Create OR rule set** link. This link is hidden if a rule set with no rule conditions already exists. Selecting this link creates an **Add Rule Condition** link, related to the rule set above it with OR.

## Repeating Composite Data Rules

Notifications enables a healthcare provider to subscribe to types of notifiable events within Clinical Portal. Providers can subscribe to available notifications, and a set of notification rules based on the provider's subscription choices determine which notifications the provider receives.

For repeating events, for example laboratory results, the rules are evaluated for each repeat. If all the rules are met for any repeat, then all the repeat results are passed to the detail formatting stage of processing. This stage determines what the provider is notified of.

### Sample Rule Evaluation

This section explains the rule evaluation for a repeating event. A repeating laboratory result includes:

- **TestName**
- **TestValue**
- **Abnormality**

If the subscription rule for the laboratory result is:

- **TestName** IS\_NOT HbA1c
- **Abnormality** CONTAINS Abnormal

Then the following incoming data for a repeating lab result gets evaluated as described in the following table:

Incoming Data	Result Evaluation	Reason
<b>TestName</b> = Eyesight <b>TestValue</b> = 20/20 <b>Abnormality</b> = Abnormal	Matches	Both individual conditions are evaluated as true, so the entire condition is evaluated as true for the matching rule.
<b>TestName</b> = HbA1c <b>TestValue</b> = 20/20 <b>Abnormality</b> = Abnormal	Does not match	Only one of the two individual conditions matches, so the entire condition is evaluated as false for the matching rule.
<b>TestName</b> = HbA1c <b>TestValue</b> = 20/20 <b>Abnormality</b> = Abnormal  <b>TestName</b> = Eyesight <b>TestValue</b> = 20/20 <b>Abnormality</b> = Abnormal	Matches	Both individual conditions match on the second repeating lab result, so the entire condition is evaluated as true for the matching rule.
<b>TestName</b> = Eyesight <b>TestValue</b> = 20/20 <b>Abnormality</b> = Normal  <b>TestName</b> = HbA1c <b>TestValue</b> = 20/20 <b>Abnormality</b> = Abnormal	Does not match	Even though on each of the repeats one of the individual conditions matches, there is no repeat where both individual conditions match, so the entire condition is evaluated as false for the matching rule.
No Repeats	Does not match	Because there are no repeats, there is no single repeat that matches both individual conditions, so the entire condition is evaluated as false.

## Configuring Relationship Types



Notifications allows a health care provider to subscribe to notifiable events, depending on the type of relationship between the provider and the patient. For example, the types of events the provider receives for patients they are the Primary Care Provider for can be different to those they receive for patients for which they are the referrer.

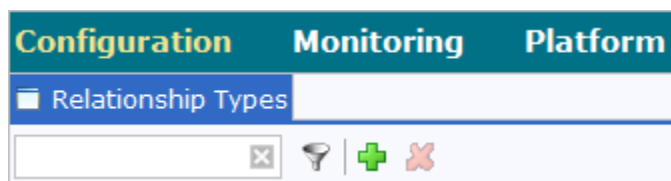
The administrator can add, modify and delete the types of relationship that Notifications supports, for example, Primary Care Provider and Referring Provider.

**Configuring Relationship Types** includes:

- [Adding or Deleting Relationship Types](#)
- [Modifying Relationship Types](#)

## Viewing Relationship Types

1. From Orion Health Platform, navigate to **Configuration > General > Relationship Types** to display the **Relationship Types** tab, as shown in the following screenshot:



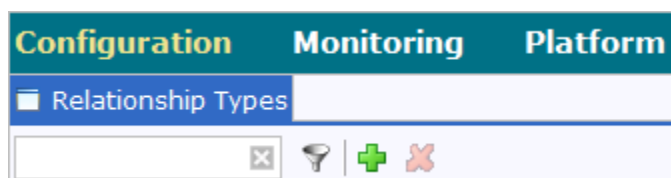
2. Enter search characters in the field at the top of the **Relationship Types** panel to search for relationship types. Select the **Clear** icon beside this field to clear the search.


## Adding or Deleting Relationship Types

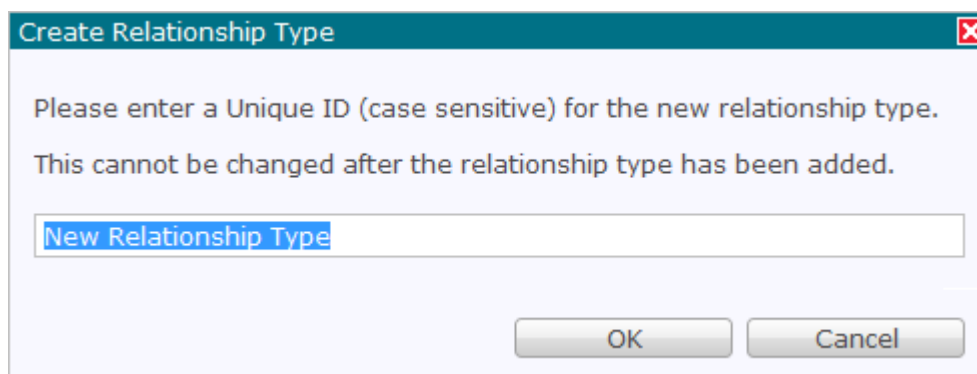
Notifications allows a health care provider to subscribe to notifiable events, depending on the type of relationship between the provider and the patient. The administrator can add and delete the types of relationship that Notifications supports.

### Adding a Relationship Type

1. From Orion Health Platform, navigate to **Configuration > General > Relationship Types** to display the **Relationship Types** tab, as shown in the following screenshot:



2. Select the **Add** icon  at the top of the **Relationship Types** panel and select **New Type** from the drop-down menu.  
The **Create Relationship Type** dialog box is displayed.




**Create Relationship Type**




Please enter a Unique ID (case sensitive) for the new relationship type.  
This cannot be changed after the relationship type has been added.

OK Cancel

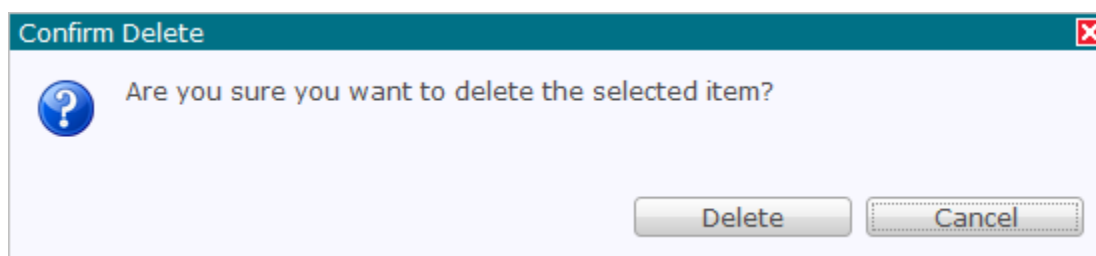
3. Enter a Relationship Type in the field.
4. Select the **OK** button to add the relationship type and display the details of the new relationship type in the **Relationship Type** pane on the right. Refer to [Modifying Relationship Types](#) for details on how to update the relationship type.
5. Select the **Save** button to save the relationship type.

## Deleting a Relationship Type

1. From Orion Health Platform, navigate to **Configuration > General > Relationship Types**.  
The **Relationship Types** tab is displayed.
2. Select the relationship you want to delete.  
The **Delete** icon  is enabled.

Configuration Monitoring Platform	
Relationship Types	
<input type="text"/>	  
New Relationship Type	Type
PCP	Type
REF MD	Type

3. Select the **Delete** icon . The **Confirm Delete** dialog box is displayed.

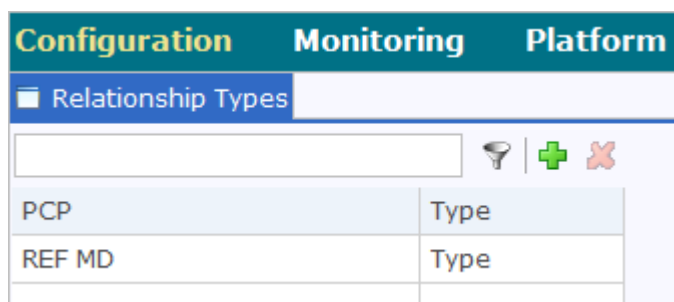


4. Select the **Delete** button.  
The relationship type is deleted.

## Modifying Relationship Types

Notifications allows a health care provider to subscribe to notifiable events, depending on the type of relationship between the provider and the patient. The administrator can modify the types of relationship that Notifications supports.

1. From Orion Health Platform, navigate to **Configuration > General > Relationship Types** to display the **Relationship Types** tab, as shown in the following screenshot:



2. Select the name of the relationship type displayed in the **Relationship Types** panel.  
The details of the relationship type are displayed in the **Configured Settings** panel.

**Relationship Type Details**
Save Revert

**Configured Settings**

Display Name: \* PCP  
Code: PCP  
Description: Primary Care Provider

*i* Exercise caution when changing the Identity Type if relationships have already been established using this Relationship Type. If an existing relationships identity cannot be found in the identity source(s) of the new Identity Type, identity resolution will fail and the relationship will not be shown on the Manage Relationships screen.

Identity Type:

**Default Duration**  
Please specify the default duration for relationships of this type (that takes effect if an expiry date is not specified on the relationship itself):  
Never expire: ☐  
Valid for: \* 1080 day(s)

**Notifications**  
☒ This relationship type is supported for Notification Subscriptions

3. Update the fields as described in the following table:

Field	Description
<b>Display Name</b>	This refers to the name to be displayed for the relationship type. This field is mandatory and defaults to the value of Code.
<b>Code</b>	This refers to the unique code that identifies the relationship type. Defined when the relationship type is created and may not be edited.
<b>Description</b>	This refers to the description of the relationship type.
<b>Identity Type</b>	This refers to the identity type that describes the relationship with the patient. If no identity type is selected, the relationship can be established between the patient and identities of any type. All the identity types are available by default. To add an identity type, select the identity type from the <b>Identity Type</b> drop-down list.
<b>Valid For</b>	This refers to the period of days for which the relationship between the provider and the patient is valid. For example, if a patient is registered with a referred patient relationship with the provider, and the relationship is valid for 30 days, then the

Field	Description
	provider will only receive notifications based on this relationship for 30 days after the relationship is created.
<b>This relationship type is supported for Notification Subscriptions</b>	<p>When this checkbox is selected, the relationship type can be used for Notifications subscriptions.</p> <div> <p>The Relationship Type Code configured to support Notifications must not be used as the Message Content Resolver name. Refer to <a href="#">Configuring a Message Content Resolver</a> for details.</p> </div>

4. Select the **Save** button to save the changes.

## Adding a New Relationship

HIE does not provide a full relationship store. Instead, it reads from a database schema that can be used as a starting point for a real relationship store; thus, relationships are site specific.

### Default Core Package Configuration

The information is stored in the Relationships table, which can be found in Orion Health Conductor by navigating to **Databases > RelationshipStoreGeneric**. A sample Rhapsody route which works with an Oracle Database is attached to this page. Contact Orion Health Support if you cannot download the attachment.

### Custom Relationship Store

A template for creating views on another system can be found and downloaded as an example.

1. From Orion Health Platform, navigate to **General > Attachments** and select `com.orchestral.i12e.relationship.source.internal`. The **Module Attachments** screen is displayed.
2. Select `create-relationshipstore-generic-view-schema.sql` and select the **Download** button.
3. Open the file in a text editor such as Notepad, and save the file with a new name.
4. Check the file and replace information as required.
5. Run the file against the database to create the view.

## Default Subscription Configurations

There are two ways a healthcare provider can receive a notification of an event that occurs relating to one or more patients:

1. **Subscriptions** - The provider identifies the events to which the provider wants to subscribe. These are specified by logging into Clinical Portal as a user and navigating to **My Subscriptions** from the Notifications menu.
2. **Standard Subscriptions** - The administrator identifies the events for which a notification will be sent to all providers who have a defined the relationship with one or more patients. These are specified by logging into Orion Health Platform. Refer to [Standard Subscriptions](#) for details.

A provider's subscriptions list overrides the standard subscription list made by an administrator. When a provider is automatically subscribed to an event such as *Inpatient Admission* but chooses to unsubscribe to that event on their **Notifications** screen, the provider will no longer receive a notification when one of the patients is admitted.

In addition, an administrator group can receive notifications of system events.

### Standard Subscriptions Overview

Before a provider can receive a patient-related event notification, a relationship must be defined between the provider and the patient. When it has been done by an administrator, notifications can be configured in any of the following:

1. **Subscriptions for all patients** - Notifications is generated for all patients with whom the provider has any type of defined relationship.
2. **Relationship-specific notifications** - Notifications is generated for all patients with whom the provider has a specified relationship, for example, *Assigned Doctor* or *Primary Care Provider*.

The administrator can configure one or more notification events and subscribe all providers to these notification events in standard subscriptions. These events can include the completion of an appointment or the arrival of a new laboratory result. The administrator can configure standard subscriptions for all patients and for those with a specified relationship with the provider.

Refer to [Standard Subscriptions](#) for details on configuring these notification options.

#### System Notifications Overview

An administrator group can receive notifications of system events; for example, `Default delivery methods changed`, and `Notification added`.

Refer to [Standard Subscriptions](#) for details on configuring these notification options.

Refer to [Configuring the System Audience](#) for details of specifying the system notification user group for this option.

## Standard Subscriptions

On the **Standard Subscriptions** tab, you can view and edit subscriptions to event notifications that are sent to healthcare providers.

You can configure the following:

- **Default delivery methods** - The default methods by which notifications are sent to users.
- **Subscriptions for System Notifications** - Default subscription settings for notifications about configuration changes to notifications.
- **General Subscriptions** - Default subscription settings for general notifications.
- **Default subscriptions for patients they have a relationship with** - Default subscription settings for notifications concerning people with whom the provider has a relationship.

To access the **Standard Subscriptions** tab, do the following:

1. Log in to Orion Health Platform.
2. Navigate to **Configuration > Notifications > Notifications**.
3. Select the **Standard Subscriptions** tab at the top of the page.

The **Standard Subscriptions** tab displays System and standard notifications.

The **System Event Recipient Group** receives **System** notifications and a healthcare provider sees the standard notifications on their **Notifications** screen in Clinical Portal. Beside each notification type is the Audience that can receive that type of notification and its default delivery methods.

Notifications
Audiences
Message Formats
**Standard Subscriptions**

*?* Notifications will only be delivered if the physician has configured valid delivery addresses, e.g. email, fax number.

### Default Delivery Methods

By default

- ☒ Notify By Concerto User Messaging ( System Audience , Default Audience )
- ☐ Notify By Email ( System Audience , Default Audience )
- ☐ Notify By No Delivery Channel
- ☐ Notify By SMTP Delivery Channel
- ☐ Notify in Daily Summary No Delivery Channel
- ☒ Notify in Daily Summary Email ( System Audience , Default Audience )
- ☐ Notify in Daily Summary Concerto User Messaging ( System Audience , Default Audience )
- ☐ Notify in Daily Summary SMTP Delivery Channel
- ☐ Send any associated document to My EMR ( System Audience , Default Audience )

Choose which notifications you want to receive and where to send them. Daily Summary and Email cannot contain patient information so the detail must be sent elsewhere.

All notifications are sent as they happen except the Daily Summary, which is sent during the night.

### Subscriptions for System Notifications

<input checked="" type="checkbox"/> Notification	Audience	Delivery Options
<input checked="" type="checkbox"/> Notification added	System Audience	Use default <a href="#">Change</a>
<input checked="" type="checkbox"/> Notification deleted	System Audience	Use default <a href="#">Change</a>
<input checked="" type="checkbox"/> Notification disabled	System Audience	Use default <a href="#">Change</a>
<input checked="" type="checkbox"/> Default delivery methods changed	System Audience	Use default <a href="#">Change</a>
<input checked="" type="checkbox"/> Standard notifications changed	System Audience	Use default <a href="#">Change</a>
<input checked="" type="checkbox"/> Subscriptions changed by administrator	System Audience	Use default <a href="#">Change</a>

### Default subscriptions for patients they have a relationship with

<input type="checkbox"/> Notification	Audience	Delivery Options
<input checked="" type="checkbox"/> Clinic Appointment Completed	Default Audience	Use default <a href="#">Change</a>
<input type="checkbox"/> Inpatient Admission - EncounterEvent	Default Audience	
<input type="checkbox"/> Inpatient Discharge - EncounterEvent	Default Audience	
<input type="checkbox"/> Patient is admitted to ER - EncounterEvent	Default Audience	
<input type="checkbox"/> Patient is discharged from ER - EncounterEvent	Default Audience	
<input type="checkbox"/> A new document (imaging report) is available - LabEvent	Default Audience	

Your screen layout may differ from this image.

## Default Delivery Methods

The **Default Delivery Methods** identify the default settings for providers subscribing to one or more notifications. Beside each delivery method is the Audience that can receive notifications by this delivery method.

Refer to [Default Delivery Methods](#) in the *Notifications User Manual* for details on how to specify default delivery methods.

To select additional or alternate delivery options for a notification, do the following:

1. Select the **Change** link for the required notification.
2. Select the relevant delivery option checkboxes.

### Delivery Options

- ☒ Notify By Concerto User Messaging
- ☐ Notify By Email
- ☒ Notify in Daily Summary Email

OK

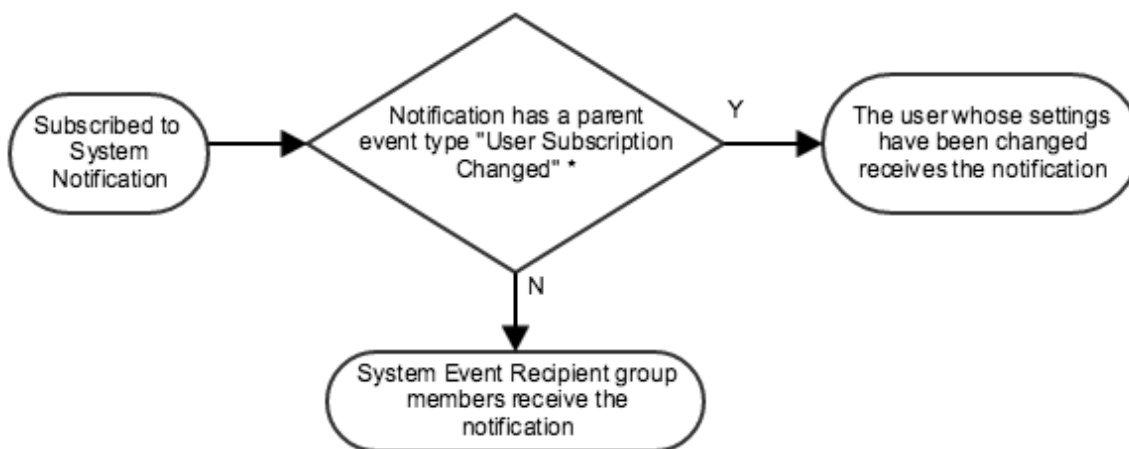
Use Defaults



## Subscriptions for System Notifications

The **Standard Subscriptions** tab is the only location in Orion Health Platform where you can configure System Notifications and their delivery options. Unlike the other options on this screen, System Notifications and Audiences are never displayed on the **My Subscriptions** screen.

The **Subscriptions for System Notifications** panel identifies the event notifications that the **System Event Recipient Group** receives. System event notifications track configuration changes made to Notifications by other administrators. The following diagram shows the users who receive notifications for system events:



\* For example the system notification "Subscriptions changed by administrator"

Refer to [Subscribing to Notifications for a User](#) for details on how to configure notifications on behalf of a user.

System Notification rules are configured in the same way as other notifications. Refer to [Subscribing to Notifications](#) in the [User Manual](#) for details.

## Default Subscriptions for Patients They Have a Relationship With

The **Default subscriptions for patients they have a relationship with** panel identifies the notification events a provider can subscribe to for a patient that the provider has a relationship with. If the checkbox next to a notification event is selected, then this event will be selected by default in the provider's **Notifications** screen.

Refer to [Subscribing to Notifications](#) in the [User Manual](#) for details about configuring the rules associated with notifications.

## Change to Subscribe by Relationship Type

Selecting the **Change to subscribe by Relationship Type** link at the bottom of the screen switches the view to list the default subscriptions for each available relationship type.



You can alternatively subscribe to notifications differently for each type of relationship with the patient  
[Change to subscribe by Relationship Type](#)

Default subscriptions are configured in the same way as the previously described subscriptions. It controls which notification events a provider can subscribe to for each relationship type they have with a patient.

Refer to [Subscriptions by Relationship Type](#) in the *User Manual* for details.

## Configuring a Message Content Resolver

Notifications allows a health care provider to receive notifications based on the content of events. The administrator can configure a new recipient resolver based on paths in the notification message to allow a notification to go to a recipient identified in that path in the message.

Enable the **Cache groups** on the Identity Source Management screen to boost performance when Message Content Resolver is used and configured.

**Configuring a Message Content Resolver** includes:

- [Adding a Message Content Resolver](#)
- [Modifying a Message Content Resolver](#)
- [Deleting a Message Content Resolver](#)

### Adding a Message Content Resolver

1. From Orion Health Platform, navigate to **Configuration > Notifications** and select **Notifications (Advanced)** on the left panel.
2. Select the **Message Content Resolver** tab.

Configuration		Monitoring		Platform										
<input type="checkbox"/> Events	<input type="checkbox"/> Digests	<input checked="" type="checkbox"/> Message Content Resolver	<input type="checkbox"/> Receiving EMR System	<input type="checkbox"/> Document Types										
<div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <input style="width: 90%;" type="text"/> <div style="float: right;"> </div> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="height: 20px;"></td><td style="width: 30%;"></td><td style="width: 30%;"></td></tr> <tr><td style="height: 20px;"></td><td></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td><td></td></tr> </table>														

3. Select the **Add icon** at the top of the panel, and select **New Message Content Resolver** from the drop-down list. This opens a **Create a message Content Recipient Resolver** dialog box.

**Create a message Content recipient resolver**

Please enter a name for the Message Content Recipient Resolver

The resolver name is required

OK Cancel

- Enter the display name of the new recipient resolver, and select the **OK** button to add the Content Recipient Resolver. This displays the **Event Type Paths** panel.

**Event Type Paths**

Description:

Event Type Name ▲	Base Path	Namespace	Identifier

Add  
Delete  
Edit

Identity Class: \* **Individual**

The Message Content Recipient Resolver name must not be the same as the Relationship Type Code used for Notifications Subscriptions. When this happens, the following message is displayed on the screen:

**Event Type Paths**

A relationship type with the code 'PCP' already exists. To support this Message Content Recipient Resolver for Notifications Subscriptions, ensure the name of the resolver is not the same as the relationship type code

Description:

Event Type Name ▲	Base Path	Namespace	Identifier

Add  
Delete  
Edit

Identity Class: \* **Individual**

- Enter a description of the new Content Recipient Resolver in the **Description** field.
- Select the **Add** button to add the event type path details. This opens the **Event Path Configuration** dialog box.

Event Path Configuration

Event Type Name: LaboratoryResult

Base Path: content/eventContent/OrderingClinician

Namespace: namespace

Identifier: id

OK Cancel

7. Update the fields as described in the following table:

Field	Description
Event Type Name	Select the relevant event type from the drop-down list. The events are configured in the <b>Events</b> tab.
Base Path	Enter an XPath to the base node of the identifier. The base node is the parent node of the identifier and namespace attributes.
Namespace	The name of the attribute, that is a child of the base node, that contains the Identity namespace. The value should always match the namespace of an Identity Service defined in the <b>Identity</b> configuration page.
Identifier	The name of the attribute, that is a child of the base node, that contains the Identity identifier. This identifies the Notifications user that will be the recipient of the notification.

This information can be obtained from the XML code of the notification message, for example:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<LaboratoryResult>
  <messageInformation>
    <messageId>2</messageId>
    <dateTimeOfMessage>2009-09-22T13:56:30.381+12:00</dateTimeOfMessage>
  </messageInformation>
  <content>
    <patientSummary>
      ...
    </patientSummary>
  </content>
</LaboratoryResult>
```

```
<eventContent>
...
<OrderingClinician>
  <namespace>portal6x-login</namespace>
  <id>hart</id>
</OrderingClinician>
...
</eventContent>
</content>
</LaboratoryResult>
```

8. Select the **OK** button to add the event path details.
9. Select the identity class from the **Identity Class** drop-down list.
10. Select the **Save** button to save the Content Recipient Resolver details.

## Modifying a Message Content Resolver

1. Select the Message Content Resolver. This opens the **Event Type Paths** details in the right pane:

**Event Type Paths**

Description:


Event Type Name ▲	Base Path	Namespace	Identifier
LaboratoryResult	content/eventContent/OrderingClinician	namespace	id

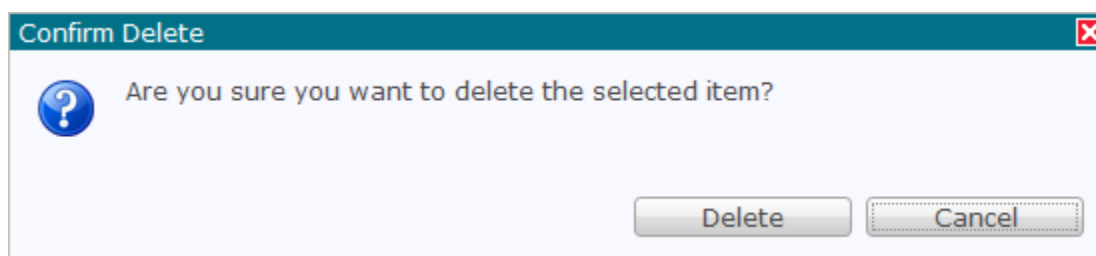
Identity Class : \*

Add  
Delete  
Edit

- **Description**  
Change the description of the Content Recipient Resolver as required.
  - **Event Type Paths** Table  
Select the **Edit** button and change the fields as required. Refer to [Adding a Message Content Resolver](#) for details.
  - **Identity Class**  
Select the identity class from the **Identity Class** drop-down list.
2. Select the **Save** button to save the Content Recipient Resolver details.

## Deleting a Message Content Resolver

1. Select the Message Content Resolver and select the Delete icon  at the top of the panel. This opens the **Confirm Delete** dialog box.



2. Select the **Delete** button to delete the Message Content Resolver.

## Configuring the Clinical Portal User Identity Source

[Delivery Channels](#) require the address information of Portal users in order to send them Notifications. This information is set through the users' [My Details](#) pages and is retrieved by Notifications by querying the Identity Service.

The Identity Service should be configured with one Identity Source that provides Clinical Portal Users, such as the [Remote Clinical Portal 7.x. Users Identity Source](#). This Identity Source needs to point to the information stored in the My Details screen and expose it as attributes that can be retrieved by any application calling the Identity Service.

### Configure the Identity Sources

Configure the **Clinical Portal Users** identity source:

- Add the following attribute mappings:
  - **Global** DirectEmail, NotificationsRecipient attribute map to **Source** DirectEmail, Notifications attribute.
  - **Global** EMR, NotificationsRecipient attribute map to **Source** EMR, Notifications attribute.

Refer to [Adding Attribute Mapping](#) for details.

- Add the following group mappings:
  - **Global** Notifications group map to **Source** Notifications group.
  - **Global** Notifications Admin group map to **Source** Notifications Admin group.

Refer to [Adding Group Mapping](#) for details.

Ensure that an identity source for patients is configured.

## Configuring the Identity Sources by Importing Config.XML File

1. From Orion Health Platform, navigate to **Configuration > General > Identity**. Note the Identity Source that provides the "Clinical Portal User" Identity Type (for example, Remote Clinical Portal 7.x. Users).
2. Navigate to **Configuration > General > Configuration Explorer**.
3. Search for `com.orchestral.core.identity.config.IdentitySourceConfig`.
4. Select the Identity Source noted earlier and select **Export Selected**.
5. Extract `config.xml` from the downloaded zip file, open it in an editor and make the following changes:
  - o In the Identity Source's `mapping/com.orchestral.core.identity.config.IdentitySchemaMapping/globalToSourceAttributeName` element, add the following entries.  
Refer to [Sample Clinical Portal Users Configuration File](#) for details.

```
<entry>
  <key>

    <com.orchestral.core.identity.source.api_6_4.AttributeName>
      <identifier>EMR</identifier>
      <schemaName>NotificationsRecipient</schemaName>

    </com.orchestral.core.identity.source.api_6_4.AttributeName>
  </key>
  <value>

    <com.orchestral.core.identity.source.api_6_4.AttributeName>
      <identifier>EMR</identifier>
      <schemaName>Notifications</schemaName>

    </com.orchestral.core.identity.source.api_6_4.AttributeName>
  </value>
</entry>
<entry>
  <key>

    <com.orchestral.core.identity.source.api_6_4.AttributeName>
      <identifier>DirectEmail</identifier>
      <schemaName>NotificationsRecipient</schemaName>

    </com.orchestral.core.identity.source.api_6_4.AttributeName>
  </key>
  <value>

    <com.orchestral.core.identity.source.api_6_4.AttributeName>
      <identifier>DirectEmail</identifier>
      <schemaName>Notifications</schemaName>

    </com.orchestral.core.identity.source.api_6_4.AttributeName>
  </value>
</entry>
<entry>
  <key>
```

```
<com.orchestral.core.identity.source.api_6_4.AttributeName>
  <identifier>inactive</identifier>
  <schemaName>IdentityStatus</schemaName>

</com.orchestral.core.identity.source.api_6_4.AttributeName>
</key>
<value>

<com.orchestral.core.identity.source.api_6_4.AttributeName>
  <identifier>inactive</identifier>
  <schemaName>IdentityStatus</schemaName>

</com.orchestral.core.identity.source.api_6_4.AttributeName>
</value>
</entry>
```

- In the Identity Source's mapping/com.orchestral.core.identity.config.IdentitySchemaMapping/globalToSourceGroupNames element, add the following entries:

```
<globalToSourceGroupNames>
  <entry>
    <key>Notifications Admin</key>
    <value>Notifications Admin</value>
  </entry>
  <entry>
    <key>Notifications</key>
    <value>Notifications</value>
  </entry>
  <entry>
    <key>Responsible Clinicians</key>
    <value>Responsible Clinicians</value>
  </entry>
  <entry>
    <key>Result Sign-off</key>
    <value>Results SignOff</value>
  </entry>
</globalToSourceGroupNames>
```

6. From Orion Health Platform, navigate to **Configuration > General > Configuration Explorer**.

7. Import the modified config.xml file.

## Inactive Users

When a Portal user is deleted, the user is not actually deleted, instead, a flag (attribute) is set to indicate that the user is inactive. This allows a user to be reinstated in Portal at a later stage.

## Notifications on Portal Versions Later Than 7.4

In Portal versions 7.4 or later, when evaluating the relationships for notification delivery, the identity source returns both active and inactive users with a relationship for the notification being processed. Any inactive recipients are then filtered out so that notifications are not sent to these users.



## Notifications on Portal Versions Prior to 7.4

Identity sources in versions of Portal prior to 7.4 should not return inactive or deleted users.

### Sample Clinical Portal Users Configuration File

```
<?xml version="1.0" encoding="UTF-8"?>
<com.orchestral.core.configuration.api_6_0.ConfigurationService
xmlns="http://www.orionhealth.com/configuration" version="3" date="2012-10-
30T17:47:01.365" platformId="454765572" type="SNAPSHOT" username="core-
platform:administrator">
  <com.orchestral.core.identity.source.api_6_4.IdentityType id="5391"
version="1">
    <identityClass>INDIVIDUAL</identityClass>
    <name>Clinical Portal User</name>
  </com.orchestral.core.identity.source.api_6_4.IdentityType>

  <com.orchestral.bespoke.identity.source.portal7webservice.config.ConcertoIdentitySo
urceConfiguration id="5399" version="3">
    <alternateNamespaces/>
    <appliesToAllIdentityTypes>false</appliesToAllIdentityTypes>
    <appliesToAllNamespaces>false</appliesToAllNamespaces>
    <cacheGroups>false</cacheGroups>
    <cacheIdentities>true</cacheIdentities>
    <disabled>false</disabled>

    <identitySourceId>com.orchestral.bespoke.identity.source.portal7webservice.config.C
oncertoIdentitySourceConfiguration:Portal 7 Web Service User</identitySourceId>
    <identityTypes>
      <value>
        <com.orchestral.core.identity.source.api_6_4.IdentityType
refId="5391" version="1"/>
      </value>
    </identityTypes>
    <loginNamespace>clinical-portal-user</loginNamespace>
    <mapping>
      <com.orchestral.core.identity.config.IdentitySchemaMapping>
        <globalToSourceAttributeName>
          <entry>
            <key>

<com.orchestral.core.identity.source.api_6_4.AttributeName>
  <identifier>EMR</identifier>
  <schemaName>NotificationsRecipient</schemaName>

</com.orchestral.core.identity.source.api_6_4.AttributeName>
  </key>
  <value>

<com.orchestral.core.identity.source.api_6_4.AttributeName>
  <identifier>EMR</identifier>
  <schemaName>Notifications</schemaName>

</com.orchestral.core.identity.source.api_6_4.AttributeName>
  </value>
</entry>
<entry>
  <key>

<com.orchestral.core.identity.source.api_6_4.AttributeName>
  <identifier>DirectEmail</identifier>
```

```

                                <schemaName>NotificationsRecipient</schemaName>

</com.orchestral.core.identity.source.api_6_4.AttributeName>
                                </key>
                                <value>

<com.orchestral.core.identity.source.api_6_4.AttributeName>
                                <identifier>DirectEmail</identifier>
                                <schemaName>Notifications</schemaName>

</com.orchestral.core.identity.source.api_6_4.AttributeName>
                                </value>
                                </entry>
                                <entry>
                                <key>

<com.orchestral.core.identity.source.api_6_4.AttributeName>
                                <identifier>emailAddress</identifier>
                                <schemaName>IdentityStandard</schemaName>

</com.orchestral.core.identity.source.api_6_4.AttributeName>
                                </key>
                                <value>

<com.orchestral.core.identity.source.api_6_4.AttributeName>
                                <identifier>E-mail</identifier>
                                <schemaName>Users</schemaName>

</com.orchestral.core.identity.source.api_6_4.AttributeName>
                                </value>
                                </entry>
                                <entry>
                                <key>

<com.orchestral.core.identity.source.api_6_4.AttributeName>
                                <identifier>fullName</identifier>
                                <schemaName>IdentityStandard</schemaName>

</com.orchestral.core.identity.source.api_6_4.AttributeName>
                                </key>
                                <value>

<com.orchestral.core.identity.source.api_6_4.AttributeName>
                                <identifier>Full Name</identifier>
                                <schemaName>Users</schemaName>

</com.orchestral.core.identity.source.api_6_4.AttributeName>
                                </value>
                                </entry>
                                <entry>
                                <key>

<com.orchestral.core.identity.source.api_6_4.AttributeName>
                                <identifier>inactive</identifier>
                                <schemaName>IdentityStatus</schemaName>

</com.orchestral.core.identity.source.api_6_4.AttributeName>
                                </key>
                                <value>

<com.orchestral.core.identity.source.api_6_4.AttributeName>
                                <identifier>inactive</identifier>
                                <schemaName>IdentityStatus</schemaName>

```

```

















</com.orchestral.core.identity.source.api_6_4.AttributeName>
    </value>
  </entry>
</globalToSourceAttributeNames>
<globalToSourceGroupNames>
  <entry>
    <key>Notifications Admin</key>
    <value>Notifications Admin</value>
  </entry>
  <entry>
    <key>Notifications</key>
    <value>Notifications</value>
  </entry>
  <entry>
    <key>Responsible Clinicians</key>
    <value>Responsible Clinicians</value>
  </entry>
  <entry>
    <key>Result Sign-off</key>
    <value>Results SignOff</value>
  </entry>
</globalToSourceGroupNames>
</com.orchestral.core.identity.config.IdentitySchemaMapping>
</mapping>
<name>Remote Clinical Portal 7.x Users</name>
<namespaces>
  <value>clinical-portal-user</value>
</namespaces>
<primaryNamespace>clinical-portal-user</primaryNamespace>
<useMapping>true</useMapping>
<useOverlay>false</useOverlay>
<useOverlayAsSearchCache>false</useOverlayAsSearchCache>
<userManagerServiceId>ClinicalPortalUserStoreService</userManagerServiceId>

</com.orchestral.bespoke.identity.source.portal7webservice.config.ConcertoIdentityS
ourceConfiguration>
</com.orchestral.core.configuration.api_6_0.ConfigurationService>

```

## Configuring Messaging

1. From Orion Health Platform, navigate to **Configuration > General > Messaging** to display a list of the default messages:

Messaging	
Search...	  
 Clinical Event Bus - Inbound Messaging	Inbound
 DAS - EDI Messaging	Inbound
 DAS - Foreign Xml Messaging	Inbound
 DAS - Native Xml Messaging	Inbound
 HL7 ADT Messaging Inbound	Inbound
 HL7 ORU Messaging Inbound	Inbound
 HL7 Pharmacy Messaging Inbound	Inbound
 HL7 PPR Messaging Inbound	Inbound
 Notification Event Messages	Inbound
 XDS Messaging	Inbound
 Asynchronous Notification XML over TCP	Outbound
 Synchronous Notification XML over TCP	Outbound
 Default Archive Profile	Profile

## 2. Configure Outbound messaging:

- a. Select **Asynchronous Notification XML over TCP** and configure the outbound endpoints. Refer to [Configuring Outbound Endpoints](#) for details.

It is recommended to use port 63009.

- b. Select **Synchronous Notification XML over TCP** and configure the outbound endpoints. Refer to [Configuring Outbound Endpoints](#) for details.

It is recommended to use port 63008.

## Configure Web Services

Notifications uses a web service called `UserMessagingService` for delivery of notifications through the **Concerto User Messaging** delivery channel. This web service is called by Rhapsody when delivering messages using this channel. However, by default, it is disabled. Refer to [Configuring a Published Web Service](#) to enable this web service.

## Configuring Integration Views

When Notifications is installed, it includes the `RDE Orion Views` and `Relationship Store` databases. These databases are preconfigured to point to a database that is not a supported production configuration.

Each database must be configured to connect to the following:

- An existing server
- The users created for the respective database

Perform the following tasks as part of configuring the integration views:

- [Configuring Relationship Store](#)
- [Configuring RDE Orion Views](#)

## Configuring RDE Orion Views

When configuring the Notifications `RDE Orion Views` database as described in [Configuring Databases](#), do one of the following:

- If your site has an existing RDE 2.x install, then select the server of your existing `RDE Orion Views` database.
- Select an existing database server with an `Orion_PatientMerges` view that implements the new contracts.
- Select the server of your existing `RDE Orion Views` database.

1. Select the attachment in the `com.orchestral.bespoke.identity.source.rde_2_0.patient` module in the pane on the left, to display its attachments in the pane on the right, as shown in the following screenshot:


### Module Attachments

#### Attachments Details








Module Name: com.orchestral.bespoke.identity.source.rde\_2\_0.patient

Module Version: 7.5.3

Number of Attachments: 2

 [Download All Attachments](#)

#### Attachment Files

	 Example RDE Patient Merge View - MSSQL (text/plain)	 <a href="#">Download Selected</a>
	 create-rde-patient-view.sql	
	 Example RDE Patient Merge View - Oracle (text/plain)	
	 create-rde-patient-view.sql	

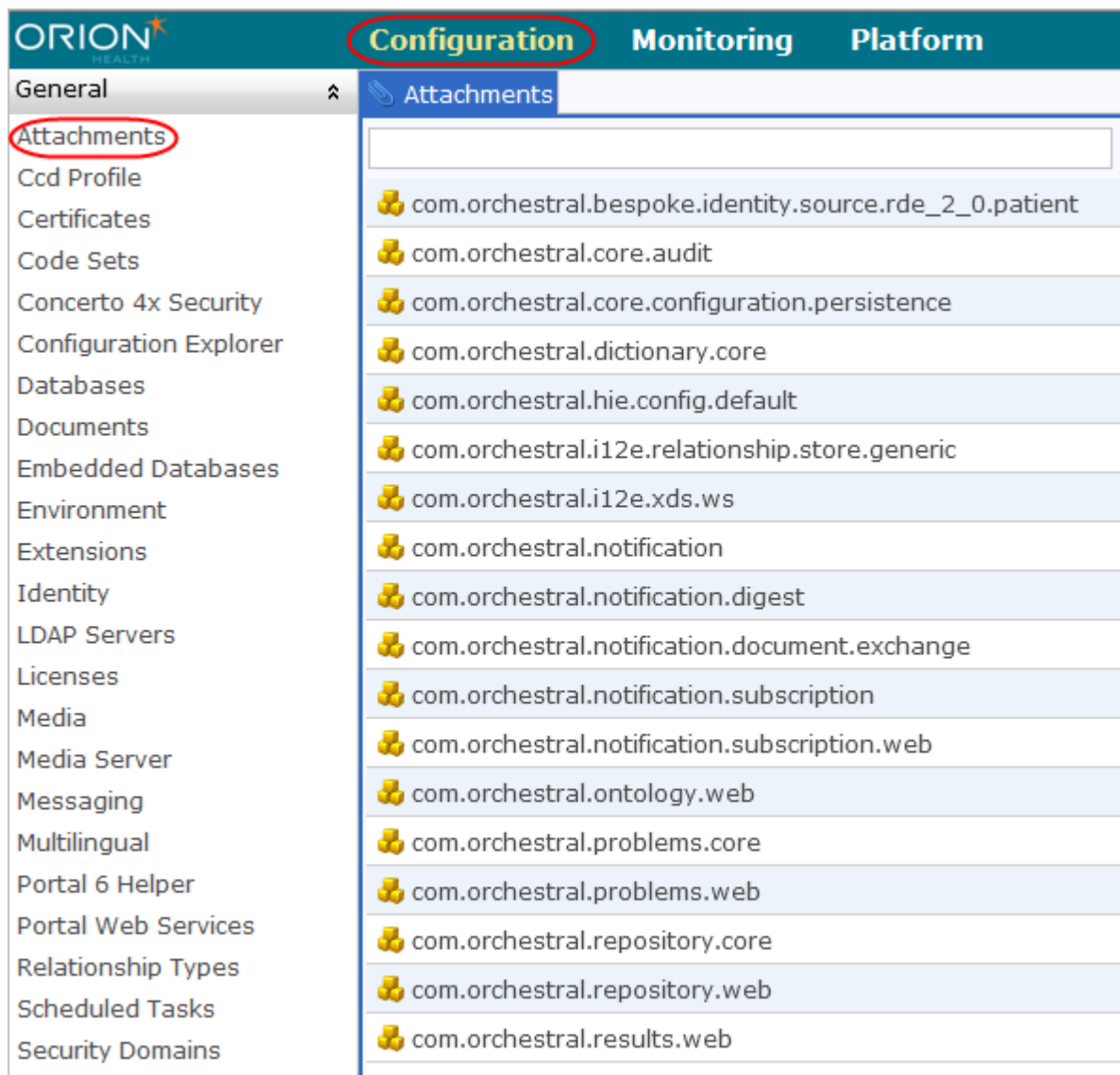
- Download the appropriate script and update it appropriately for your environment.
- Run the updated script to create the views.

## Prerequisites

- Select the server of your existing Relationship Store database, when configuring the Notifications Relationship Store database. Refer to [Configuring Databases](#) for more details.
- Create a view for the Notifications Relationship Store database that is appropriate for your site.

To download and update a sample .sql script file and configure the Relationship Store database:

- From Orion Health Platform, navigate to **Configuration > Attachments**.



2. Select the `com.orchestral.i12e.relationship.store.generic` module in the pane displayed. This displays its attachments in the pane on the right, as shown in the following screen shot:


### Module Attachments

#### Attachments Details



Module Name: com.orchestral.i12e.relationship.store.generic


Module Version: 7.5.3



Number of Attachments: 4


 [Download All Attachments](#)



#### Attachment Files




Example Relationship Store View - MSSQL (text/plain)




create-relationshipstore-generic-view-schema.sql




Example Relationship Store View - Oracle (text/plain)



create-relationshipstore-generic-view-schema.sql



Insert Schema Meta Data - MSSQL (text/plain)


insert-relationshipstore-generic-schema-meta-data.sql



Insert Schema Meta Data - Oracle (text/plain)


insert-relationshipstore-generic-schema-meta-data.sql

 [Download Selected](#)

- Under **Attachment Files** in the right pane, check whether the appropriate script is attached.
- Select the **Download Selected** link to download the script attached. This script contains comments describing the content. It is an example only, and will not run until you update it for your environment.
- Update the downloaded script appropriately for your environment.
- Run the updated script to create the views.

## Configuring the My Subscriptions and User Subscription Entry Points

Notifications provides two Clinical Portal entry points that can be used to modify subscriptions:

- The **My Subscriptions** entry point can be accessed by a subscriber and is used to manage that subscriber's notification subscriptions.
- The **User Subscription** entry point allows administrators to manage subscriptions of Notifications users on their behalf. Refer to [Subscribing to Notifications for a User](#) for details about this feature.

You can customize the parameters of these entry points. To configure an entry point, do the following:

- Log in to Clinical Portal as an administrator.
- Navigate to **Concerto > Applications** and select **Notifications**.



3. Navigate to the **Entry Points** tab and select either the **My Subscriptions** or the **User Subscription** entry point.
4. Select the **Entry Redirection** link to open a configuration window.

[Add a new redirection before this one](#)  
[Add a new redirection after this one](#)

General
Advanced

Redirection Template Details

MethodGETRedirection 1/1
URL<%=AppVars.get("home")%>/Subscription.action
Description
Encryption MethodConcerto 4.x SecurityEncryption Key Namecom.orchestral.notifications

Query Parameters

✖ subscriberId<%=Context.UserId%>
✖ subscriberNamespaceclinical-portal-user
✖ notifySubscriptionsChangedtrue
+

Content Parameters
+

OKCancelSave

5. Configure the query parameters as follows:

Parameter name	Description
subscriberId	The identifier of the user whose subscriptions is edited. For the <b>My Subscriptions</b> entry point, the default value of <code>subscriberId</code> is the ID of the currently logged in user. For the <b>User Subscription</b> entry point, the default value of <code>subscriberId</code> is the ID of the user currently in the Clinical Portal context.
subscriberNamespace	The namespace of the user to edit the subscriptions for. By default, this is <code>clinical-portal-user</code> .
notifySubscriptionsChanged	This sets whether or not to trigger a <code>User Subscriptions Changed</code> system event and notify the user that their subscriptions have changed. For the <b>My Subscriptions</b> entry point, the default value is <code>false</code> . For

Parameter name	Description
	the <b>User Subscription</b> entry point, the default value is <code>true</code> .

6. Select **OK** to save changes.

## Configuring Audiences

Audiences allow notifications to be sent to different sets of users such as clinicians, patients, administrators can receive only notifications relevant to them.

By default, Notifications ships with two audiences:

- **Default Audience** - Used for non-system notifications.
- **System Audience** - Targets users that are intended to receive notifications triggered by system events.



When distinct groups of users exist, an administrator must determine the notification types for each audience. Refer to the following:


- [Viewing Audiences](#)
- [Adding, Editing, or Deleting Audiences](#)
- [Configuring an Audience](#)
- [Configuring the System Audience](#)

Once an Audience exists, it can be assigned to a notification type. Refer to [Configuring a Notification](#).

## Viewing Audiences


1. From Orion Health Platform, navigate to **Configuration > Notifications > Audiences**. The **Audiences** tab lists audiences, along with the number of groups in each audience.

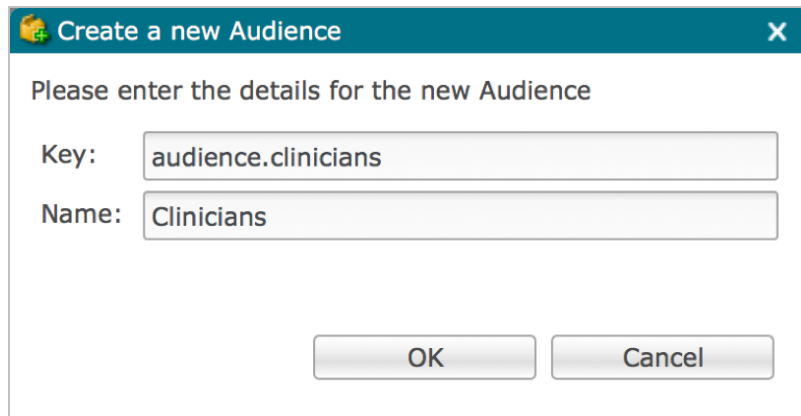
<input type="checkbox"/> Notifications	<input checked="" type="checkbox"/> Audiences	<input type="checkbox"/> Message Formats	<input type="checkbox"/> Standard Subscriptions
<input type="text"/>			
 Default Audience		1 Group(s)	
 System Audience		1 Group(s)	

2. To search for a specific audience, enter the name in the **Search** field.
3. To clear search results, select the **Clear** icon .

## Adding, Editing, or Deleting Audiences

### Adding an Audience

1. From Orion Health Platform, navigate to **Configuration > Notifications > Audiences**. The **Audiences** tab displays the audiences in the left panel.
2. Select the **Add** icon  at the top of the **Audience** panel. The **Create a new Audience** dialog box is displayed.



3. Enter the following values for the new audience:
  - **Key**
  - **Name**
4. Select the **OK** button to save the new audience.

When you create a new audience, a translation key is created with its value set to the new audience name. If you subsequently update the audience name, you must update the translation database independently for each required language.

### Editing an Audience

1. From Orion Health Platform, navigate to **Configuration > Notifications > Notifications > Audiences**. The **Audiences** tab displays audiences in the left panel.
2. Select the **Audience** that you want to edit. The **Audience Details** pane is displayed.

**Audience Details**
Save Revert

**Audience Details**

Audience Key: com.orchestral.notifications.configuration.audience.default

Audience Name:

**Groups**

Group
Notifications

Add  
Delete

**Delivery Channels**

Primary Channel:

Primary Channel ☐  
Displayed on  
subscriptions screen:


Allowed Delivery Channel
Concerto User Messaging

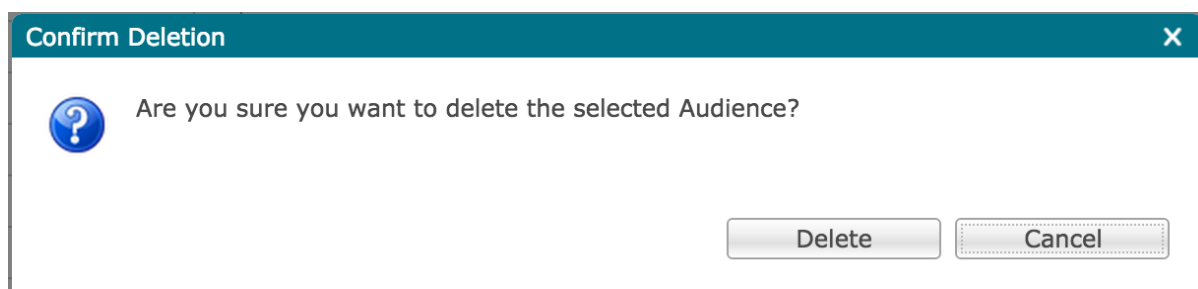
Add  
Delete

3. Edit the name.
4. [Configure Groups and Delivery Channels for the Audience.](#)
5. Select the **Save** button to save your changes.

## Deleting an Audience

You cannot delete a System Audience.

1. From Orion Health Platform, navigate to **Configuration > Notifications > Notifications > Audiences**.  
The **Audiences** tab displays audiences in the left panel.
2. Select the audience that you want to delete.
3. Select the **Delete** icon  at the top of the **Audience** panel.  
The **Confirm Deletion** dialog box is displayed.



4. Select the **Delete** button to delete the audience.

## Configuring an Audience

You need to configure the following details for each notifications audience:

- **Groups** - You must define a group before you add it to an audience. Refer to [Configuring Identity Schema - Adding a New Group or Role](#) and [Adding Group Mapping](#) in the *Orion Health Platform Administration Manual* for details.
- **Allowed Delivery Channels**
- **Primary Delivery Channel** - You must define a Delivery Channel before you add it to an audience. Refer to [Configuring Notification Delivery Channels](#).

1. From Orion Health Platform, navigate to **Configuration > Notifications > Audiences**. The **Audiences** tab lists the audiences in the left panel.
2. Select the audience that you want to configure. The **Audience Details** section is displayed.

**Audience Details**

Audience Key: com.orchestral.notifications.configuration.audience.default

Audience Name: Default Audience

**Groups**

Group
Notifications

Add Delete

**Delivery Channels**

Primary Channel: Concerto User Messaging

Primary Channel  
Displayed on  
subscriptions screen: ☐

Allowed Delivery Channel
Concerto User Messaging

Add Delete

You need to add Groups to the audience.

3. Select the **Add** button in the **Groups** section. The **Add a Group** dialog box is displayed.

**Add a Group**

Select a Group to add to this Audience

Notifications Admin

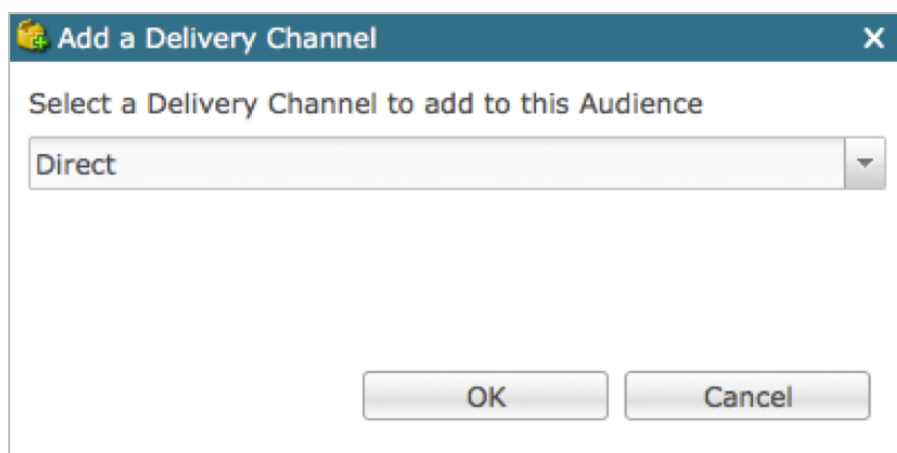
OK Cancel

4. Select the **Group** that you want to add from the drop-down list.
5. Select the **OK** button to return to the Audience Details section.
6. Add other Groups as you require.

To remove a Group, select the group, and then select **Delete**.

You need to add allowed delivery channels to the audience.

7. Select the **Add** button in the **Delivery Channels** section. The **Add a Delivery Channel** dialog box is displayed.



8. Select the Delivery Channel that you want to add from the drop-down list.
9. Select the **OK** button to return to the Audience Details section.
10. Add other Delivery Channels as required.

To remove a Delivery Channel, select the Delivery Channel and then select the **Delete** button.

You need to specify the Primary Delivery Channel for the audience.

For more information about the Primary Delivery Channel, refer to [Specifying the Primary Delivery Channel for an Audience](#).

11. Choose the delivery channel that you require from the **Primary Channel** drop-down list.

You can only choose an Allowed Delivery Channel as the Primary Channel.

12. Select the **OK** button.
13. Select the **Save** button to save your changes.

## Configuring the System Audience

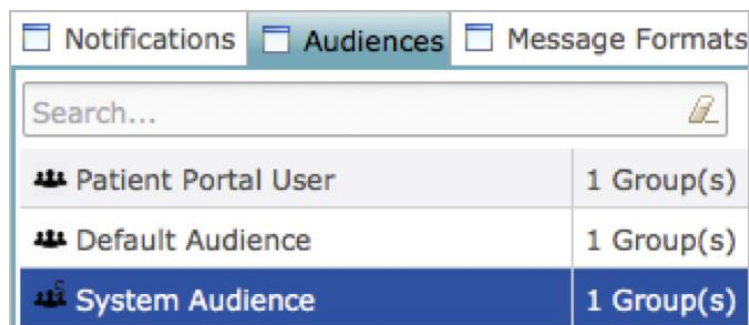
By default, Notifications comes with a **System Audience** that targets the *Notification Admin* user group to receive notifications triggered by system events. An administrator can specify other user groups to receive notifications triggered by system events to notify users of changes made to the configuration and the state of notifications.

### Configuring a System Notification User Group

Before adding a group to an audience, the group needs to be defined. Refer to [Configuring Identity Schema - Adding a New Group or Role](#) and [Adding Group Mapping](#) in the *Orion Health Platform Administration Manual* for details.

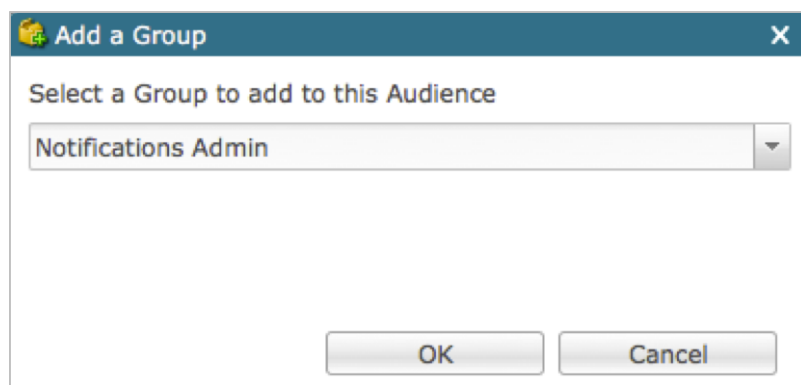
To configure the system notifications user group, do the following:

1. From Orion Health Platform, navigate to **Configuration > Notifications**. Select **Notifications** on the left panel.
2. Select the **Audiences** tab to display all audiences as shown in the following screenshot:



Search...	
Patient Portal User	1 Group(s)
Default Audience	1 Group(s)
System Audience	1 Group(s)

4. Select **System Audience**. This opens the **Audience Details** pane.
5. To add a group to **System Audience**, select the **Add** button. This opens the **Add a Group** pane as shown in the following screenshot.



Add a Group

Select a Group to add to this Audience



Notifications Admin

OK Cancel

6. From the drop-down list, add the system notification user group configured in step one and select the **OK** button. This adds the group to the **Groups** section of the **Audience Details** pane as shown in the following screenshot:



## Audience Details



 Save  Revert

### Audience Details

Audience Key: Singleton

Audience Name: \*



### Groups

Group	
Notifications Admin	
	

### Delivery Channels


Primary Channel:

Primary Channel  
Displayed: ☒

Allowed Delivery Channel	
Email	
EMR	
Concerto User Messaging	

7. Add other groups, if required.

8. To add an allowed delivery channel to the System Audience, select the **Add** button in the **Delivery Channels** section. You will be presented with a dialog as shown in the following screenshot:

 Add a Delivery Channel ×

Select a Delivery Channel to add to this Audience

To specify the Primary Delivery Channel for the System Audience, select a Delivery Channel from the drop-down list and then select the **OK** button.

Only an Allowed Delivery Channel can be chosen as the Primary Delivery Channel for the chosen Audience.

For more information about the Primary Delivery Channel, refer to [Specifying the Primary Delivery Channel for an Audience](#).

9. Select the **Save** button to save your changes.

### Deleting a group from the System Audience

To remove a group, select the group and then select the **Delete** button. Select the **Save** button to save your change.

### System Audience Deletion

You cannot delete a System Audience.

## System Notification Messages

The system notification message includes the sections described in the following table:

Message Section	Description
Message header	This refers to any message header configured by the organization. This is the same for all messages.
System notification message body	This refers to the body of the system notification tailored to the delivery method.
Message footer	This refers to any message footer configured by the organization. This is the same for all messages.

A sample system notification message body is shown in the following image:

The notification New Notification has been Deleted.

## Specifying the Primary Delivery Channel for an Audience

You need to specify a primary delivery channel for each notifications audience so the members can receive notifications. The primary delivery channel is the only channel Notifications uses for guaranteed message delivery. Notifications considers a notification

as delivered only when the primary delivery channel succeeds in delivering it. Until the notification is delivered, Notifications continues retrying.

Primary delivery channel messages are always sent first. When they are delivered successfully, messages are also sent through the configured secondary delivery channels. However, the secondary channels do not ensure successful delivery. Errors for secondary channels are reported (through logging and audit) only at the start of delivery. Errors related to unsuccessful delivery are not reported because secondary channels are asynchronous.

Subscribed (textual) events are always sent through the primary delivery channel, but digest messages are never sent through this channel. Because textual notifications are sent through the primary delivery channel, you must secure it to send sensitive information by selecting the **Supporting "Detail" messages** option.

You must *not* disable the primary delivery channel causing Notifications delivery to fail and exception errors to occur.

When configuring an audience for Notifications users in Clinical Portal, make sure the primary delivery channel specified in an audience is the same as the primary delivery channel specified in other audiences.

The Notifications users in Patient Portal, however, can have a primary delivery channel that is different from the primary delivery channel specified in Clinical Portal.

For example, if there are two audiences with Patient Portal and Clinical Portal subscriptions respectively, Email can be used as the primary delivery channel for Patient Portal and Concerto User Messaging as the primary delivery channel for Clinical Portal. If there are two audiences with Clinical Portal subscriptions, both audiences should have the same primary delivery channel such as Concerto User Messaging.

To specify the Primary Delivery Channel for an Audience:

1. Log in to the Orion Health Platform.
2. Navigate to **Configuration > Notifications > Notifications > Audiences**.

<input type="checkbox"/> Notifications	<input checked="" type="checkbox"/> Audiences	<input type="checkbox"/> Message Formats
Search...		
Patient Portal User	1 Group(s)	
Default Audience	1 Group(s)	
System Audience	1 Group(s)	

3. Select the audience for which you want to configure the primary delivery channel.

Ensure that **Allowed Delivery Channels** are configured for the selected audience.

#### 4. Configure delivery channels.

Field	Details
<b>Primary Channel</b>	<p>Select the channel that you want to use as the primary delivery channel, such as Concerto User Messaging.</p> <p>You can select only an Allowed Delivery Channel as the Primary Delivery Channel.</p>
<b>Primary Channel Displayed on Subscriptions Screen</b>	<p>Select this checkbox to display the primary channel on the <b>My Subscriptions</b> page of Clinical Portal.</p> <p>A hidden primary delivery channel configured for a Notifications audience will still appear in the <b>Standard Subscriptions</b> page of Platform.</p>

**Audience Details**
Save Revert

**Audience Details**

Audience Key: com.orchestral.notifications.configuration.audience.default

Audience Name:

**Groups**

Group	Notifications

AddDelete

**Delivery Channels**

Primary Channel:

Primary Channel ☒ Displayed on subscriptions screen:

Allowed Delivery Channel
Email
EMR
Concerto User Messaging
Direct

AddDelete

5. Select the **Save** icon  to save your changes.

## Exporting and Importing Configuration Files

You can update configuration data by exporting a configuration file, manually changing it, and importing it back into Notifications. You can also import new configuration data into Notifications.

Alternatively, you may want to export your existing configuration to back it up.

This section includes the following topics:

- [Exporting and Importing Notifications Configuration](#)
- [Exporting and Importing an Event Type Configuration](#)

## Exporting and Importing Notifications Configuration

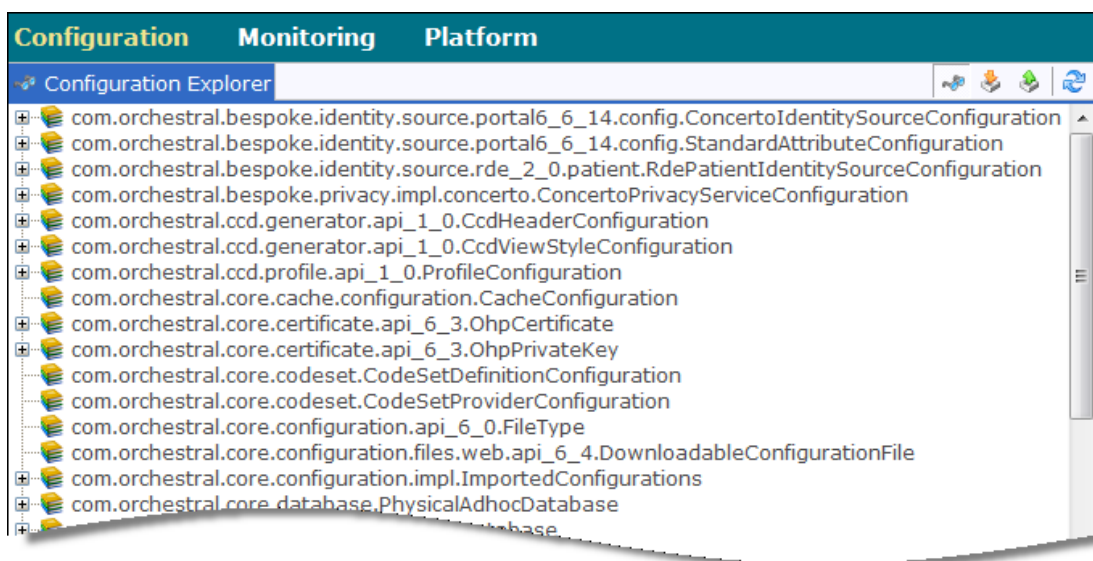
This section describes the steps involved in exporting and importing the following Notifications configuration:


- Exporting and importing all applications in Orion Health Platform
- Exporting and importing only Notifications

## Exporting All Application Configurations

### 1. Export all configurations:

- From Orion Health Platform, navigate to **Configuration > Configuration Explorer** to display the **Configuration Explorer** tab, as shown in the following screenshot:



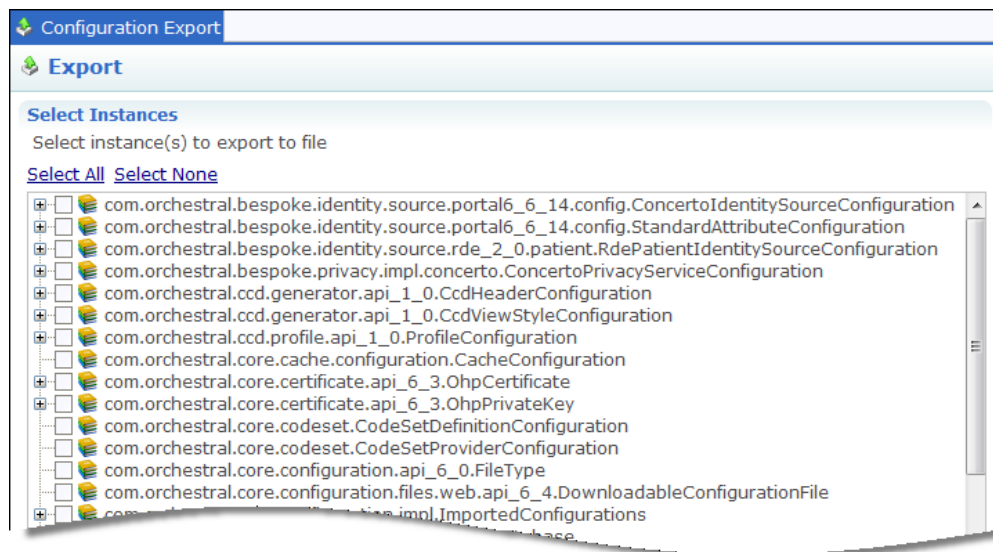
- Select the **Enable Export Mode icon** .
- Select the **Select All** link in the pane on the right, and select the **Export** button at the bottom of the screen.

The exported file will include all certificates.

## Exporting Notifications Configurations Only

### 1. Export Notifications configurations:

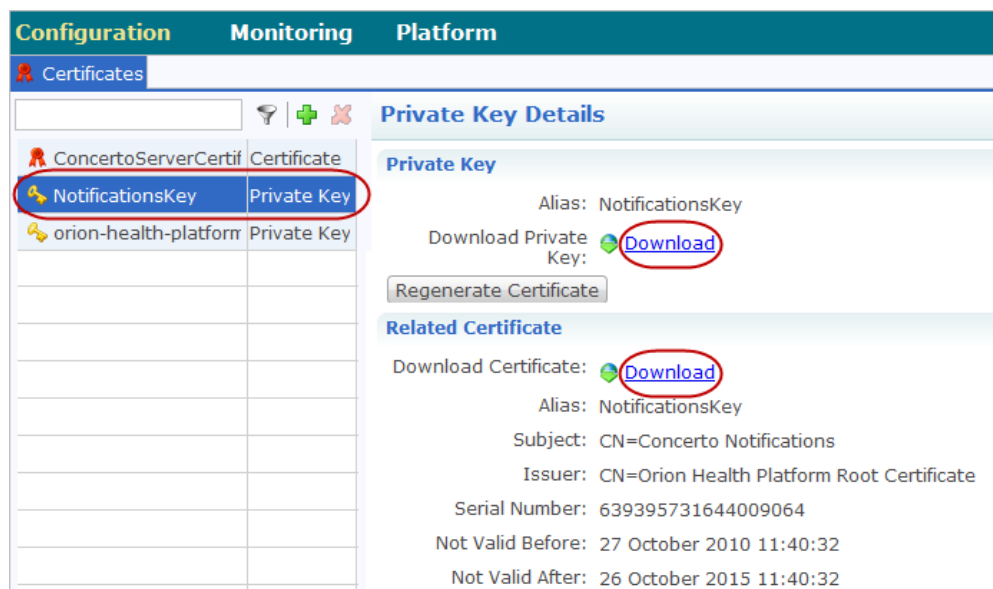
- From Orion Health Platform, navigate to **Configuration > Configuration Explorer** and select the **Enable Export Mode icon**  to display the classes to be exported in the right pane:



- b. Check the classes listed in [Configuration Export Classes](#), and select the **Export** button at the bottom of the screen.


## 2. Export certificates and private keys:

- a. Navigate to **Configuration > Certificates**, select the ConcertoServerCertificate certificate from the **Certificate** pane on the left and select the **Download** link in the **Certificate** pane on the right.
- b. Select the NotificationsConcertoKey private key from the **Certificate** pane on the left, and select the **Download** link beside **Download Private Key** and beside **Download Certificate** in the **Certificate** pane on the right.



## Importing Notifications Configuration

1. Stop the Rhapsody™ Integration Engine (Rhapsody) service.

2. Stop the Notifications service.
3. Back up the `Notifications` directory on the Notifications server.
4. Start the Notifications service.
5. Import the Notifications configurations you exported earlier. Refer to [Step 1](#) of the appropriate instructions above. From the Orion Health Platform menu, navigate to **Configuration > Explorer** and select the **Enable Import Mode** icon .

When importing, the certificates will be imported, but not the private key.

If you get a certificate validation error, check the `Configuration_XXX.zip/config.xml` configuration file:

1. Find the first line that is similar to the following:


```
<?xml version="1.0" encoding="UTF-8"?><com.orchestral.core
.configuration.api_6_0.ConfigurationService xmlns="http://
www.orionhealth.com/configuration" date="1">
```

2. Find `date="1"` and replace this with `version="1"`

After the change, it should look similar to the following:

```
<?xml version="1.0" encoding="UTF-8"?><com.orchestral.core
.configuration.api_6_0.ConfigurationService xmlns="http://
www.orionhealth.com/configuration" version="1">
```

3. Save the modified `config.xml` file back into the `Configuration_XXX.zip` file, and reimport the Notifications configurations.

6. Import certificates and private keys. To completely import the `NotificationsConcertoKey` private key and certificate:
  - a. Delete the `NotificationsConcertoKey` certificate you imported in Step 5. above, and then import it and its private key.
  - b. Navigate to **Configuration > Certificates**, select the icon  to open the **Add Private Key** dialog box, and select the **Imported** option for **Private Key Type**.
  - c. Select the **Browse** button to browse the key and related certificate files, then select the **Upload** button and select the **OK** button.
7. Configure Clinical Portal web services:
  - a. Navigate to **Configuration > Portal Web Services**. In the left pane, select the correct client certificate and server certificate for your web service configuration; that is, select `PortalServer`.



- b. In the right pane, select the newly imported certificates from the **Client Certificate** and **Server Certificate** drop-down lists, as shown in the following screenshot:

The screenshot shows the 'Concerto Portal Web Service Server Details' configuration page. On the left, there is a table with two columns: 'PortalServer' and 'Portal Server'. The 'PortalServer' column has a red circle around it. On the right, the 'Configured Settings' section shows the following fields:

- Name: PortalServer
- Description: (empty text box)
- Server URL: http://127.0.0.1
- Authentication Method: Signature Encrypt
- Client Certificate: NotificationsKey (dropdown menu, circled in red)
- Server Certificate: ConcertoServerCertificate (dropdown menu, circled in red)
- Server Password: (empty text box)

- c. Select the **Save** icon at the top of the pane.

8. Start the Rhapsody service.

## Configuration Export Classes

**Configuration Export Classes** lists the classes to export when exporting only the Notifications configuration. Refer to [Exporting and Importing Notifications Configuration](#) for details.

Check the classes in the following table on the Orion Health Platform configuration export page to perform a full Notifications configuration export:

### Notification

Class	Purpose	Mandatory to Export?
com.orchestral.notification.configuration.DocumentTypeConfiguration	Configuration of the Document Types.	✓
com.orchestral.notification.configuration.EMRSystemConfiguration	Configuration of the EMR System.	✓

Class	Purpose	Mandatory to Export?
<code>com.orchestral.notification.configuration.EventPathConfiguration</code>	Configuration of the Event Path.	✓
<code>com.orchestral.notification.configuration.MessageContentRecipientConfiguration</code>	Configuration of the Message Content Recipient.	✓
<code>com.orchestral.notification.configuration.NotificationTypeConfiguration</code>	Configuration of the Notification Types.	✓
<code>com.orchestral.notification.configuration.NotificationAudienceConfiguration</code>	Non-system Audience configuration.	✓
<code>com.orchestral.notification.configuration.NotificationSystemAudienceConfiguration</code>	System Audience configuration.	✓
<code>com.orchestral.notification.delivery.configuration.DeliveryChannelConfiguration</code>	Delivery Channel configuration.	✓
<code>com.orchestral.notification.delivery.smtp.SmtptDeliveryChannelConfiguration</code>	SMTP Delivery Channel configuration.	✓
<code>com.orchestral.notification.digest.configuration.Digest</code>	Digest configuration.	✓
<code>com.orchestral.notification.event.configuration.EventType</code>	Configuration of the Event Types.	✓
<code>com.orchestral.notification.format.configuration.MessageFormats</code>	Global message formats.	✓
<code>com.orchestral.notification.model.aspect.impl.ReusableDataTypeAspectBean</code>	Indicates which data types can be reused in other data types.	✗ Users cannot change the def

Class	Purpose	Mandatory to Export?
		aults.
<code>com.orchestral.notification.relationship.configuration.RelationshipTypeConfiguration</code>	Notification add-on configuration for <code>com.orchestral.relationship.store.generic.configuration.GenericRelationshipType</code> , must be exported together.	✓
<code>com.orchestral.notification.rules.impl.aspect.ComparisonTypeAttributeAspectBean</code>	Configures which comparison type to use for a particular data type. Used in situations where more than one comparison type could be used for a data type, for example the date data type could be evaluated within Notifications by either a date comparison or a date offset comparison.	? Export if date offsets are used.
<code>com.orchestral.notification.rules.model.ComparisonType</code>	It encapsulates the comparison types that are specified by the administrator for evaluating notification rules, what class is used during rule evaluation, and how to store the value into the configuration service.	?
<code>com.orchestral.notification.rules.model.NotificationRuleConditionContainer</code>	Notification rules Condition Container.	✓
<code>com.orchestral.notification.rules.model.NotificationRuleConfiguration</code>	Notification rules.	✓
<code>com.orchestral.notification.subscription.configuration.DefaultDeliveryConfiguration</code>	Configuration of default delivery channels.	✓
<code>com.orchestral.notification.subscription.configuration.DefaultSubscriptionConfiguration</code>	Configuration of default global subscriptions.	✓

## Identity Service Configuration

Class	Purpose	Mandatory To Export ?
<code>com.orchestral.core.certificate.api_6_3.OhpCertificate</code>	Securing of Concerto Portal web services (User Management and Privacy services).	 Will not successfully migrate to a new environment because of the private keys.
<code>com.orchestral.foundation.portal6helper.webservice.config.Portal6WebserviceServer</code>	Definition of Concerto Portal web service servers.	
<code>com.orchestral.foundation.identity.IdentityServiceExecutorConfig</code>	Thread pooling configuration for the Identity Service.	
<code>com.orchestral.foundation.identity.api_6_4.Group</code>	Identity Service group definition. Currently it is not mandatory to	

Class	Purpose	Mandatory To Export?
	export this because the user cannot edit groups in anyway but this is likely to change in the future.	
<code>com.orchestral.foundation.identity.impl.AttributeImpl</code>	Represents an attribute that can be defined for an identity. For example email or login to some random system.	✓




Class	Purpose	Mandatory To Export?
<code>com.orchestral.foundation.identity.impl.AttributeSchemaImpl</code>	Identity Service attribute schema definition	✓

Class	Purpose	Mandatory To Export?
	n. Currently, it is not mandatory to export this because the user cannot edit groups in any way but may change in the future.	
<code>com.orchestral.identity.source.portal6_6_14.config.ConcertoIdentitySourceConfiguration</code>	Configuration for the Concerto Identity Source.	✓
<code>com.orchestral.bespoke.identity.source.rde_2_0.patient.RdePatientIdentitySourceConfiguration</code>	Configuration for the RDE Identity Source.	✓
<code>com.orchestral.bespoke.privacy.impl.concerto.ConcertoPrivacyServiceConfiguration</code>	Concerto Privacy configuration.	✓

## Other Configuration

Core configurations for Notifications are shown in the following table. These configurations are also used by other applications.

Class	Purpose	Mandatory To Export?
<code>com.orchestral.foundation.messaging.tcp.admin.InboundEndpointConfiguration</code>	Contains the notifications inbound messaging configuration.	✓
<code>com.orchestral.foundation.messaging.tcp.admin.MessageArchiveProfile</code>	Contains the notifications message archive profile configuration.	✓
<code>com.orchestral.foundation.messaging.tcp.admin.OutboundEndpointConfiguration</code>	Contains the notifications outbound messaging configuration.	✓
<code>com.orchestral.core.database.impl.DatabaseDriverImpl</code>	Contains a part of the database configuration.	✓
<code>com.orchestral.core.database.impl.DatabasePoolingProfileImpl</code>	Contains a part of the database	✓

Class	Purpose	Mandatory To Export?
	configuration.	
<code>com.orchestral.core.database.impl.DatabaseServerImpl</code>	Contains a part of the database configuration.	
<code>com.orchestral.foundation.concerto4xsecurity.api_6_0.RedirectionKey</code>	Concerto 4.x security keys	 These are automatically generated during installation.
<code>com.orchestral.foundation.concerto4xsecurity.api_6_0.ValidationKey</code>	Concerto 4.x security keys.	

## Exporting and Importing an Event Type Configuration

Every event type is associated with a [Data Model](#) that is stored in the [Orion Health Platform Dictionary](#). For example, the Appointment Event Type is associated with the **Appointment** Model. Refer to [Model Explorer](#) for details. The association between event types and models is defined by the event type's `modelIdentifierString` element that contains the unique ID of a model stored in the Dictionary.

Event type configurations are stored in the Platform Configuration Service but Dictionary models are not. When you export or import event type configurations, you also need to export or import the associated Dictionary models.

### Exporting Event Type Configurations

1. From Orion Health Platform, navigate to **Configuration > General > Configuration Explorer**.
2. Search for the Event Type that you want to export.





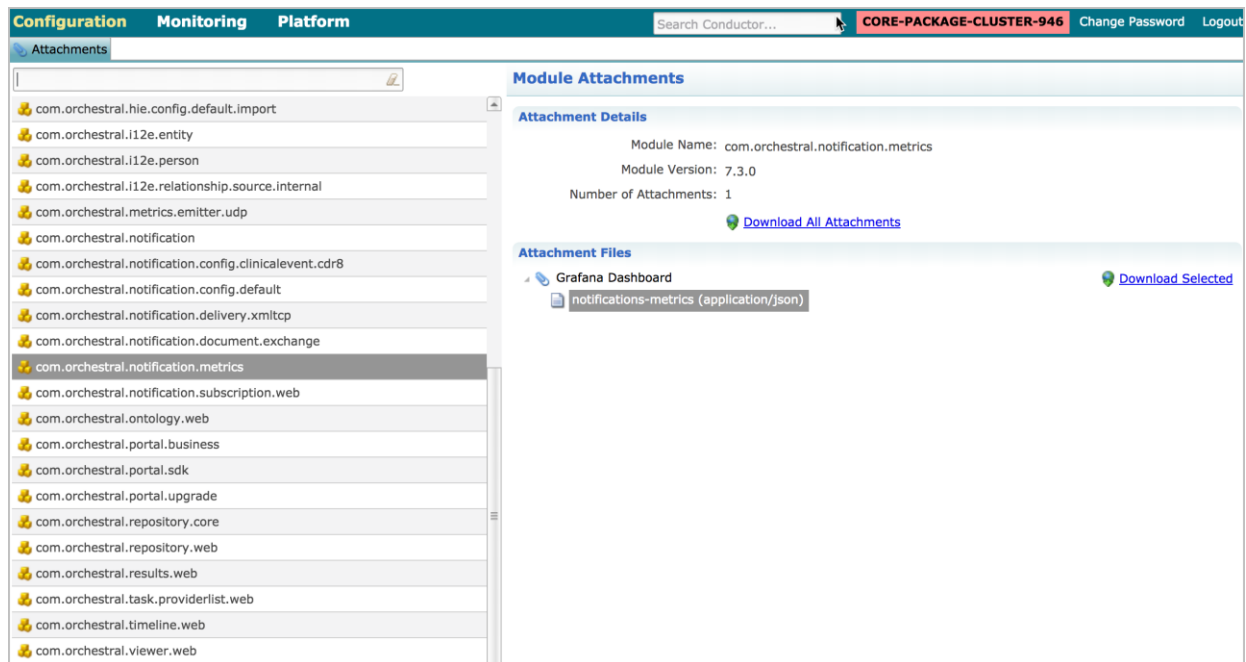
```
<lt;%if patientSummary.Gender.code = "M" %><lt;%var genderStmt = "He
was"%><lt;%elseif patientSummary.Gender.code = "F"%><lt;%var genderStmt =
"She was"%><lt;%else%><lt;%var genderStmt = "They were"%><lt;%end if
%><lt;%for each notificationType in notificationTypes
%><lt;%if notificationType.type = "Clinic Appointment Completed"
%><lt;%=fullname%> (unique identifier
<lt;%=patientSummary.enterpriseIdentifier.identifier%>) completed a clinical
appointment with the <lt;%if
eventContent.Department!=null%><lt;%=eventContent.Department.description%><lt
;%end if%> specialty at <lt;%=eventContent.Location-PointofCare%> location on
<lt;%=DateFormat.format(eventContent.StartsAt)%>.. <lt;%if
eventContent.AppointmentReason!=null%>The appointment reason was
<lt;%=eventContent.AppointmentReason.description
%>..<lt;%end if%><lt;%end if%><lt;%end for%></detailMessageFormat>
<modelIdentifierString>uuid 88207361-c358-11de-8a39-
0800200c9a66</modelIdentifierString>
<name>Appointment</name>
<sendToActivityStream null="true"/>
<subjectFormat null="true"/>
<system>false</system>
</com.orchestral.notification.event.configuration.EventType>
</com.orchestral.core.configuration.api_6_0.ConfigurationService>
```

## Setting up the Grafana Dashboard

Grafana is an open-source software which allows you to query, visualize, alert on, and understand your metrics.

To set up the Grafana dashboard for Notifications:

1. From Platform, navigate to **General > Attachments**.
2. Select notifications-metrics.json from the **Attachments** list.
3. Select notifications-metrics (application/json) from the **Attachment Files** list and then select **Download Selected**.



- Log in to Grafana and then import the dashboard. Refer to [Importing a Dashboard](#) in the Grafana documentation for details.

Make sure you have a Grafana server running and the data source is set to prometheus. Refer to the [Grafana documentation](#) for details.

- Check if the following panels and their corresponding metrics graphs are present:

Panel	Metrics Graphs
Notifications Pipeline	<ul style="list-style-type: none"> <li>Event</li> <li>Queue</li> <li>Delivery</li> <li>Identify Resolution</li> <li>Privacy Resolution</li> <li>Relationship Resolution</li> </ul>
Digest	Digest Process
Subscriptions	Subscription Service

You may customize your Grafana dashboards and panels. Refer to the [Grafana documentation](#) for details.

## Configuring Communicate Webmail for Notifications

Communicate Webmail is a web-based secure mail solution for sending and receiving direct messages.

To send secure notifications through Communicate Webmail:

- [Configure the Communicate Webmail settings in Rhapsody](#)
- [Update the Secure Webmail delivery channel in the Audience Details](#)
- [Update the Secure Webmail Email Address](#)

If you are using Rhapsody 6, you do not need to perform the steps listed below. You can directly add the Communicate Webmail to the Delivery Channel list. Refer to [Upgrading Notifications from 7.2.x to 7.3](#) for details.

### Configure the Communicate Webmail settings in Rhapsody

1. Add the Communicate Webmail variables in Rhapsody:

- From the administration workstation, launch the Rhapsody IDE application. The initial screen is displayed.
- Navigate to **View > Rhapsody Variables Manager** to display the **Rhapsody Variables Manager** screen.
- Select the **New** button and then add the following variables and their corresponding values:

Rhapsody Variable Name	Description
NOT_CommunicateWebEmailNotificationFromAddress	This refers to the email address displayed in the <b>To</b> field.
NOT_CommunicateWebEmailSmtpServerName	This refers to the email server address.
NOT_CommunicateWebEmailSmtpServerUserName	This refers to the email address used to authenticate to the SMTP server.
NOT_CommunicateWebEmailSmtpServerPassword	This refers to the password used to authenticate to the SMTP server.

The values for

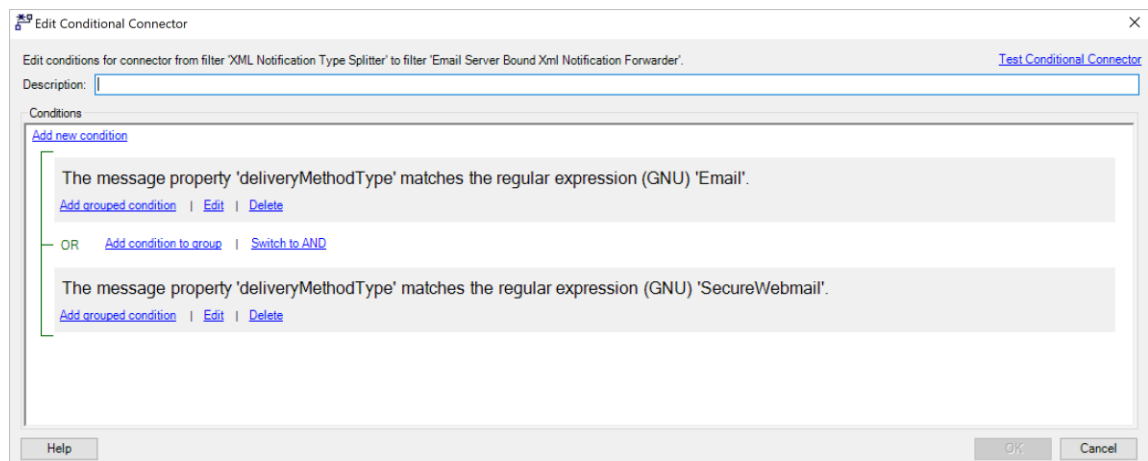
NOT\_CommunicateWebEmailNotificationFromAddress and NOT\_CommunicateWebEmailSmtpServerUserName can be the same.

Name	Encrypted	Value	Overridden	Override Value
NOT_CommunicateWebEmailNotificationFromAddress	<input type="checkbox"/>		<input type="checkbox"/>	
NOT_CommunicateWebEmailSmtpServerName	<input type="checkbox"/>		<input type="checkbox"/>	
NOT_CommunicateWebEmailSmtpServerPassword	<input type="checkbox"/>		<input type="checkbox"/>	
NOT_CommunicateWebEmailSmtpServerUserName	<input type="checkbox"/>		<input type="checkbox"/>	

d. Select the **OK** button.

2. Update the **Notification Delivery Channel Distribution** route.

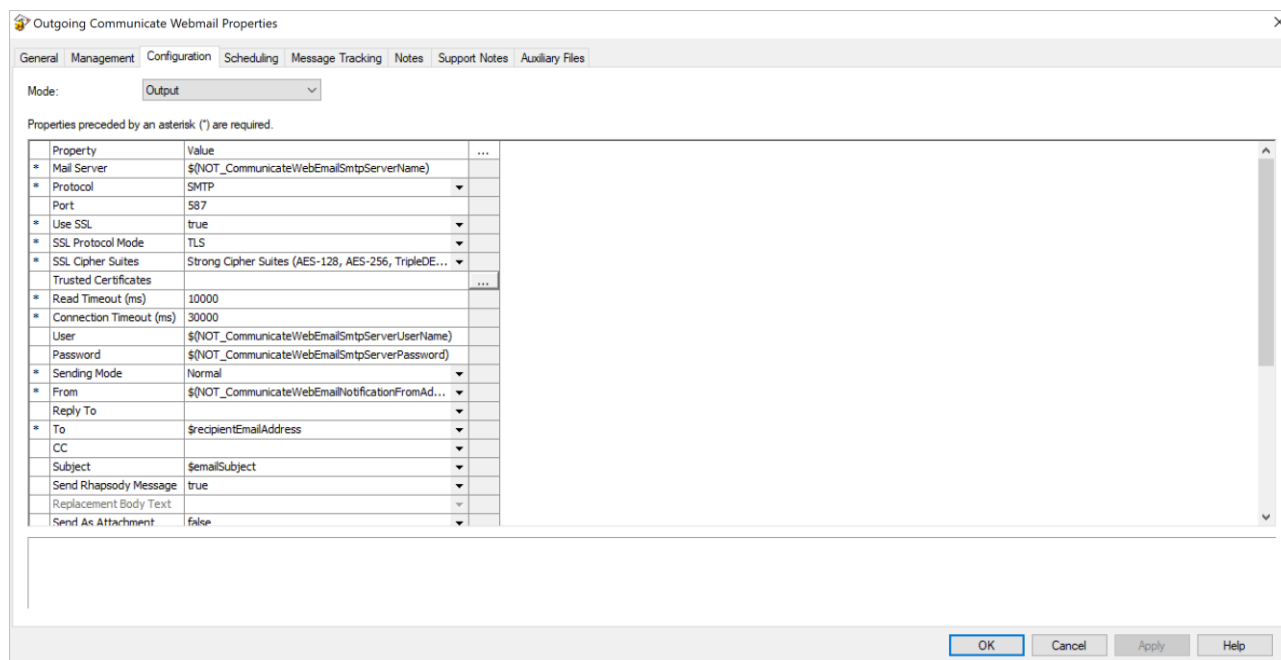
- a. Expand the **Notifications** tree element.
- b. Expand the **2 - Out From Notification - Delivery** service tree element.
- c. Select the **1- Notification Delivery Channel Distribution** route.
- d. Select the **conditional connector** (`deliveryMethodType` matches 'Email' OR `deliveryMethodType` matches 'Direct') **between the XML Notification Type Splitter and Email Server Bound Xml Notification Forwarder no-operation filters.**
- e. Select the **Add new condition** link. The **Edit Condition** screen is displayed.
- f. Update the following fields:
  - **Property Name:** `deliveryMethodType`
  - **Operator:** `Regular expression match (GNU)`
  - **Operand:** `SecureWebmail`
- g. Select the **OK** button to save and close the **Edit Condition** screen.
- h. Select the **OK** button to save and close the **Edit Conditional Connector** screen.



### 3. Update the **Send Email To SMTP Server** route.

- a. Log in to the Rhapsody server using the Rhapsody IDE.
- b. Expand the Notifications tree element.
- c. Expand the 2 - Out From Notification - Delivery service tree element. Make sure the folder is selected.
- d. From the menu, navigate to **Insert > New Communication point**. The **Create Communication Point** screen is displayed.
- e. Select the e-mail client communication point with the name **Outgoing Communicate Webmail**.
- f. Select the **Create** button. Make sure the e-mail client Properties window is displayed.
- g. Set the mode **Connection Mode** to `Output` from the drop-down list.
- h. Select the **OK** button to save changes.
- i. Double click the route `3b - Send Email To SMTP Server`.
- j. Drag the **Outgoing Communicate Webmail** e-mail client to the **Output** section.
- k. Draw a conditional connector from the `Email Content Forwarder no-operation` filter to the `Outgoing Communicate Webmail Communication Point`.
- l. Select the **no conditions set** link conditional connector created recently.
- m. Update the description to `Communicate Webmail` and then select the **OK** button.
- n. Select the **Outgoing Communicate Webmail** e-mail client and then select **Configuration to set properties**.
- o. Set the following properties for `Outgoing Communicate Webmail` and then select the **OK** button:

Property	Value
Protocol	SMTP
Port	587
SSL Protocol Mode	TLS



Outgoing Communicate Webmail Properties

General Management Configuration **Scheduling** Message Tracking Notes Support Notes Auxiliary Files

Mode:

Properties preceded by an asterisk (\*) are required.

Property	Value
* Mail Server	\$(NOT_CommunicateWebEmailSmtpServerName)
* Protocol	SMTP
Port	587
* Use SSL	true
* SSL Protocol Mode	TLS
* SSL Cipher Suites	Strong Cipher Suites (AES-128, AES-256, TripleDE...)
Trusted Certificates	...
* Read Timeout (ms)	10000
* Connection Timeout (ms)	30000
User	\$(NOT_CommunicateWebEmailSmtpServerUserName)
Password	\$(NOT_CommunicateWebEmailSmtpServerPassword)
* Sending Mode	Normal
* From	\$(NOT_CommunicateWebEmailNotificationFromAd...)
Reply To	
* To	\$recipientEmailAddress
CC	
Subject	\$emailSubject
Send Rhapsody Message	true
Replacement Body Text	
Send As Attachment	false

OK Cancel Apply Help

1.
  - a.
    - i. Select the **Communicate Webmail** conditional connector between the **Email Content Forwarder filter** no-operation and **Outgoing Communicate Webmail** communication point.
    - ii. Ensure the **Communicate Webmail** conditional connector filter opens-up
    - iii. Select the **Add new condition** link. The **Edit Condition** screen is displayed.
    - iv. Update the following fields:
      - Property Name: `deliveryMethodType`
      - Operator: Regular expression match (GNU)
      - Operand: `SecureWebmail`


- i. Select the **OK** button to save and close the **Edit Condition** screen.
- ii. Select the **OK** button to save and close the **Edit Conditional Connector** screen.

## Update the Secure Webmail delivery channel in the Audience Details

1.
  - a. From Orion Health Platform, navigate to **Configuration > Notifications > Notifications > Audiences**. The **Audiences** tab lists the audiences in the left panel.
  - b. Select the audience that you want to configure. The **Audience Details** section is displayed.

- c. Select the **Add** button and then select **Secure Webmail** from the drop-down list.
- d. Select the **OK** button.



- e. Specify if you want to use **Secure Webmail** as a Primary Channel.
- f. Select the **Save** icon  to save your changes.

## Update the Secure Webmail Email Address

1.
  - a. Log in to Clinical Portal as a user.
  - b. navigate to **Notifications > My Subscriptions**.
  - c. Add the secure webmail address in the **My Webmail** field.
  - d. Select the **Save** button to save your changes.

Alternatively, you can also add the secure webmail address in the **My Details** screen. Refer to [My Details](#) for details.

## Event PatientSummary Processing

- `patientSummary/enterpriseIdentifier/idType` is always set to the same value as `patientSummary/enterpriseIdentifier/namespace`.
- `patientSummary/Gender/suppliedDescription` is always set to the same value as `patientSummary/Gender/description`.
- `patientSummary/Name/MothersMaidenName` is always set to null.

## Update of Demographics Information Using Identity Service

Every event sent to Notifications contains a **PatientSummary** section that stores the demographics information about the Patient it is associated with.

Depending on the source of this information, the demographics information may not be up to date with the authoritative source of Patient Information. To rectify this, Notifications uses the Identity Service to retrieve the Patient's authoritative Identity information and updates the PatientSummary element accordingly. As a result, all messages sent out from Notifications will contain up to date demographics information.

The following table describes how Notifications populates each section within the PatientSummary based on what is returned from the Identity Service:

PatientSummary element	Format expected from Identity Service	Identity Service returns Correct format	Identity Service returns Bad format	Identity Service returns null
enterpriseIdentifier	N/A	Enterprise Identifier Fields are set using the Patient's Primary Identifier. idType is set to the namespace.	N/A	Exception is thrown and the processing of Notification is discontinued.
dateTimeOfBirth	YYYYMMDD	dateTimeOfBirth updated.	dateTimeOfBirth is set to null and the processing of Notification is continued.	dateTimeOfBirth is set to null and the processing of Notification is continued.

PatientSummary element	Format expected from Identity Service	Identity Service returns Correct format	Identity Service returns Bad format	Identity Service returns null
Gender	<a href="#">HL70001 Gender Code</a>	Gender code, codingSystem, and description updated using the Codeset lookup.	Gender is set to null and the processing of Notification is continued.	Gender is set to null and the processing of Notification is continued.
Name	N/A	Name fields are set to whatever is returned.	N/A	Name fields are set to whatever is returned.

## Implications on Mapping of Incoming Events

### PatientSummary mapping

Events sent into Notifications may have their PatientSummary elements set by a Rhapsody route or CDR 8.7 Clinical Events. All fields, however, passed to the PatientSummary are overwritten by values retrieved from the Identity Service. If any element is already set in the Patient Summary and the Identity Service provides no appropriate value with which to replace it, it is set to `null`. This will ensure that PatientSummary of Events sent out by Notifications are completely consistent with the primary source of Patient Information.

Thus, the only fields of the PatientSummary that Event must be populated with before they reach Notifications are the following:

- `patientSummary/enterpriseIdentifier/identifier`
- `patientSummary/enterpriseIdentifier/namespace`

### Use of Identifier Type versus Namespace

Identifier Type and Namespace are both concepts used to describe the context of a coded value. In CDR 6 environments (for example: Core Package 3.1.1), Identifier Type is used predominantly wherein CDR 8 environments (for example, Core Package 4.2 and 4.3), Namespace is used instead.

The Event Model `/patientSummary/enterpriseIdentifier` element contains both an `idType` and a `namespace` element. However, only the `namespace` field is used when looking up Patient Information using the Identity Service at any point during Notifications processing. In addition, when updating the PatientSummary element, `idType` is set to the same value as `namespace` and is, therefore, redundant.

Thus, in CDR 6 environments, the HL7 to XML Notifications mappers in Rhapsody should map `idType` to the `Event namespace` field, not the `idType` field. In CDR 8 environments, `namespace` should be mapped to the `Event namespace` field.

In later versions, `idType` will be removed from the PatientSummary of Notifications.

## Monitoring Notifications

This section includes the following topics:

- [Clinical Event Processing](#)
- [Metrics](#)

## Clinical Event Processing

When using Notifications, you run the risk of blocking the processing of clinical events. The clinical events are blocked if a clinical event fails and keeps retrying until the cause of the transient error is fixed. The state of clinical event Notifications processing must be monitored regularly by an administrator after installation. This section describes the actions that need to be taken to prevent the blocking of Clinical Events processing.

### Clinical Event Processing Queue

The processing of Clinical Events by Notifications is handled using a queue. Refer to [Persistent Queues](#) for details on Orion Health Platform queues.

The queue used is named: `TypedClinicalEventBus-com.orchestral.notification.messaging.impl.NotificationMessagingServiceImpl`.

It is possible for errors to occur when Notifications processes clinical events. They are also logged in the platform log with the message "An error occurred delivering message to <recipient address> for notifications <notification type>, this will be retried" and an error stack trace. In this case, all items, apart from the one that is being processed by Notifications, are in waiting status in the queue. The items in waiting status error. until the blocking item is fully processed.

If a queue item is blocking due to an error in Notifications or due to some intermittent issue, other clinical events will not be processed until the blocking issue is resolved or the blocking message is suspended.

If a queue item is blocking due to a non-intermittent issue, you **must** contact Orion Health Support for assistance in resolving the error. In this case, if these messages are not manually suspended, Notifications will not process further clinical events.

If the messages are manually suspended, eventually, the suspend threshold can be reached. Refer to [Persistent Queues](#) for details. In this case, clinical events will not be processed. This may mean that Orion Health CDR will stop processing some incoming messages. The threshold may be increased if the threshold is likely to be reached before the error can be resolved.

## Monitoring Clinical Event Processing

As errors in processing Clinical Events can block processing of other incoming messages, it is important to monitor the processing of Clinical Events to ensure any issues with it are identified as soon as possible.

- If any transient error has occurred during the processing of a clinical event, the processing of the clinical event is retried. This can be monitored by looking at the platform logs for following **ERROR** level message: "Handling of typed Clinical Event has finished with error. Please check Orion Health Platform's log file for details."

Any errors found during monitoring should be addressed immediately because these errors prevent other message processing. We strongly recommend contacting Orion Health support to address these errors.

## Notifications Delivery Queue

The delivery of notification message is handled using a queue. Refer to [Persistent Queues](#) for details on Orion Health Platform queues. The queue used is `com.orchestral.notification.delivery.impl.DeliveryServiceImpl`. It is possible for errors to occur when Notifications tries to deliver the message. If the message delivery has failed due to transient or configuration based error, the delivery is retried. If the message delivery has failed due to some unrecoverable error, the message is logged and dropped or suspended.

## Monitoring Notifications Delivery

Since it is possible for the delivery queue to drop the message in some cases, it is important to monitor the delivery of notification messages to ensure any issues are identified.

- If any transient error has occurred during the delivery of a notification message, the message is retried. This can be monitored by looking at the platform logs for following exceptions: `DeliveryTransmissionException` and `MisconfiguredDeliveryChannelException`.
- If the message does not have a valid email address but is configured to be sent via the SMTP delivery channel, the message is dropped. This can be monitored by looking at the platform logs for the following exception: `AddressException`.
- There is a possibility that the notification messages could be suspended in the delivery queue. The causes, however, for this are highly unlikely and will be readily visible from other system operations. Nevertheless, it is important to monitor the delivery queue for any suspended messages as the number of suspended messages allowed in a queue is limited.

## Metrics

### Overview

Metrics is an internal application that provides services to other Orion Health™ Java applications and components for capturing information around system usage and provide further insight into it. Notifications has been instrumented with Metrics to output a range of metrics data that can be consumed by external metrics consumers. Metrics give a valuable insight into the performance of Notifications and can be used to quickly identify areas of concern.

Refer to the [Metrics](#) documentation for details on metrics and configuring the application.

### Key Health Indicators

Notifications publishes a wide range of metrics across a number of functional areas, some of which are very fine-grained. This table provides a coarse-grained targeted set of metrics, referred to as Key Health Indicators (KHI), for Notifications. These can be used to track the product's performance at a high level to ensure overall stability. These are better suited for dashboards and monitoring of the system.

All metrics are under the `notification` namespace.

All Notifications metrics have corresponding error metrics. For example, the `notifications_digest_service` metric has an equivalent error metric of `notifications_digest_service_errors`.

Name	Description	Tags	Type
<code>notifications_delivery</code>	This measures the time taken for queued notification messages to be delivered.	Outbound: <ul style="list-style-type: none"> <li><code>&lt;DeliveryChannelName&gt;</code> - This refers to the name of the delivery channel.</li> </ul>	Timer

Name	Description	Tags	Type
notifications_digest_service	This measures the time taken for Notifications to handle requests for storing, loading, and processing digests.	Action: <ul style="list-style-type: none"> <li>create</li> <li>get</li> <li>process</li> </ul>	Timer
notifications_document_repository_service	This measures the time taken for Notifications to access the document exchange repository.	Document Repository: <ul style="list-style-type: none"> <li>&lt;Repository Name&gt; - This refers to the name of the document repository.</li> </ul>	Timer
notifications_identity_service	This measures the time taken for Notifications to resolve an identity.	Type: <ul style="list-style-type: none"> <li>individual_identity</li> <li>patient_identity</li> <li>user_identity</li> <li>group</li> </ul>	Timer



Name	Description	Tags	Type
notifications_pipeline	This measures the time taken for notification messages to be queued for delivery.	Inbound: <ul style="list-style-type: none"> <li>xml_event</li> <li>typed_event</li> <li>generic_event</li> </ul> Event Type: <ul style="list-style-type: none"> <li>&lt;EventType&gt; - This refers to the name of the event type.</li> </ul>	Timer
notifications_privacy_resolver_service	This measures the time taken for Notifications to handle requests for evaluating patient and information privacy.	Access Policy: <ul style="list-style-type: none"> <li>patient - This measures the time taken for Notifications to evaluate the privacy access levels of a patient.</li> <li>information - This measures the time taken for Notifications to evaluate the privacy access levels of a specific resource.</li> </ul>	Timer
notifications_recipient_resolver_service	This measures the time taken for Notifications to find recipients for a notification.		Timer

Name	Description	Tags	Type
notifications_relationship_resolver_service	This measures the time taken for Notifications to load active relationships of a patient.		Timer
notifications_subscription_service	This measures the time taken for Notifications to handle requests for processing, loading, or storing subscriptions and subscription configurations.	<p>Action:</p> <ul style="list-style-type: none"> <li>• update</li> <li>• process</li> <li>• get</li> </ul> <p>Source:</p> <ul style="list-style-type: none"> <li>• combined</li> <li>• subscriber</li> <li>• standard</li> </ul> <p>Service Type:</p> <ul style="list-style-type: none"> <li>• web - This indicates the configuration change is from a subscription page.</li> <li>• rest - This indicates the configuration change is from a REST request.</li> <li>• osgi - This indicates the internal interactions with the subscription service.</li> </ul>	Timer
portal_application_redirector	This measures the time taken for Notifications to	<p>Application:</p> <ul style="list-style-type: none"> <li>• Notifications</li> </ul> <p>Entry Point:</p> <ul style="list-style-type: none"> <li>• My_Subscriptions</li> </ul>	Timer

Name	Description	Tags	Type
	<p>load the subscriptions page.</p> <p>This metric is only supported when using Clinical Portal 8.9.10 or later.</p>		
ohp_event_service_queue_head_wait_time	This measures the time a notification message will wait at the head of the persistent	<p>Name:</p> <ul style="list-style-type: none"> <li>com_orchestral_notification_delivery_impl_DeliveryServiceImpl - Queue name</li> </ul>	Timer

Name	Description	Tags	Type
	<p>queue before being processed.</p> <p>This metric is only supported by Metrics 1.1 with following setups in Platform: OH P &gt; Monitoring &gt; Metrics &gt; Sel</p>		

Name	Description	Tags	Type
	<p>ect Sc ala r un der Ev ent Ty pe s dro p- do wn me nu &gt; Sa ve</p>		

# Notifications Rhapsody Routes

## Overview

The Notifications Rhapsody routes are grouped in two folders, `Notifications` and `Site Specific - Notifications`. The base Notifications routes shipped by default with Notifications are contained under the `Notifications` folder. Any site-specific modifications to routes or additional routes should be done under the `Site Specific - Notifications` folder. Any changes made to the "Notifications" folder may potentially break the core functionality and may be overwritten by changes in later versions of Notifications.

The core Notifications routes are further divided into the following:

- `1 - In To Notification` - handles incoming HL7 messages and transforms them into Notification event types before sending them to Notifications.
- `2 - Out of Notification` - receives outbound notification messages from Notifications and delivers them, for example, by Concerto User Messaging or email.

## Outbound Notification Delivery

In the `1 - Notification Delivery Channel Distribution` route, the `XML Notification Type Splitter` sends notifications to different routes based on the delivery channel. For example, notifications for the `Email` delivery channel are sent to the Email sending routes.

Any new delivery channels will need routes added to send notifications via whatever delivery mechanism is needed, and a branch to send messages to these routes based on the delivery channel.

## EMR Channel Configuration

Documents sent to EMRs will end up in the EMR delivery routes. These are then manipulated further depending on the type and sent to site-specific routes for delivery.

- `ORU (Observation Result)` documents have their headers automatically manipulated for sending (e.g. generating unique message control id). They are then sent on to the `3- ORU Document Delivery` site-specific route. This route can then make any further changes necessary to the message and send it via whichever delivery mechanism is appropriate. By default, it is simply saved to the "EMR Out" directory. This should be replaced with the appropriate communication point, e.g. TCP if the messages are to be delivered by TCP.
- `CCD (Continuity of Care)` documents are transformed into an XDS request and sent to the `4 - CCD Document Delivery` site-specific route. This can then have any further changes necessary and be delivered by whichever delivery mechanism is appropriate. By default, it makes a Simple SOAP web service request.

- All other document types are delivered to the `5 - Other Document Delivery` route. Any transformations and delivery methods for other document types can be added here. By default, this saves the unchanged message to the `EMR Out` directory.

## EMR Integration

### EMR Integration with Rhapsody

Notifications now ships with two Rhapsody routes, one for Rhapsody 3.x and one for Rhapsody 4.1 and up. Only the 4.1 routes include functionality to send documents to EMRs, as this requires a functionality not available pre-Rhapsody 4.1.

The 4.1 Rhapsody routes look at the value of the `documentType` in the `notificationDocument` and process the message further based on this.

With ORU documents, the content of the document is extracted, some adjustments are made to the header information, and the message is then passed through to the `3 - ORU Document Delivery` route (under `Site Specific - Notification`). The message at this point is now an ORU suitable to be passed on to a system capable of processing ORU messages. Any further processing and sending of the ORU message should be done on the `3 - ORU Document Delivery` route, as any part of the route before this may be changed as part of the upgrade to a later version of Notifications. By default, this route simply places the ORU message into the `EMR Out` directory.

With CCD documents, the content of the document is extracted, along with values of the document metadata from the `documentEntry` element, and this is transformed into an XDR publish & register call. Some values are placed into the XDR request based on values in Rhapsody lookup tables. These tables should be populated with values appropriate for the site that Notifications is installed. The values are listed in the following table.

#### XDS\_String\_Values\_Lookup table:

Key	Usage
<code>subSourceId</code>	The OID of the source of the document submission.
<code>submissionUniqueIdPrefix</code>	The prefix of the unique OID of the submission. The Rhapsody route uses an incrementing counter and places this incrementing counter value (unique for each message) after the prefix.
<code>documentUniqueIdPrefix</code>	The prefix of the unique OID of the document (similarly used as the <code>submissionUniqueIdPrefix</code> ).

## XDS\_Coded\_Values\_Lookup table:

(This table includes three values that are looked up- `code`, `codeSystem` and `displayName`, which correspond to the values that will be used for the code.)

Key	Usage
<code>docClass</code>	The code of the document class. (This value has been chosen to be valid for CCDs so should probably be retained.)
<code>docFormat</code>	The code of the document format.
<code>docPracticeSetting</code>	The code of the document practice setting.
<code>docHealthCareFacilityType</code>	The code of the document facility type.
<code>subContentType</code>	The code of the submission content type. (This value has been chosen to be valid for CCDs so should probably be retained.)

Once the CCDs have been mapped to the XDR request, this is then passed through to the 4 - CCD Document Delivery route (under Site Specific - Notification). Any further processing and sending of the CCD message should be done on the 4 - CCD Document Delivery route, as any part of the route before this may be changed as part of the upgrade to a later version of Notifications. By default, this route makes a web service request with the message unchanged.

For messages with a document type other than ORU or CCD, the message is passed without change to the 5 - Other Document Delivery route (under Site Specific - Notification). Any processing and delivery of documents with site-specific document types can be done here.

## ORU Header Mapping

The following Rhapsody variables are used to insert new values into the appropriate parts of the ORU header. If a value is needed for any of these, it can be provided as a value for the Rhapsody variable, and this will then be inserted into the header of all outgoing ORUs (replacing any value already there).

Variable	Default
<code>NOT_sendingApplicationNamespaceId</code>	Rhapsody
<code>NOT_sendingApplicationUniversalId</code>	
<code>NOT_sendingApplicationUniversalIdType</code>	
<code>NOT_sendingFacilityNamespaceId</code>	
<code>NOT_sendingFacilityUniversalId</code>	
<code>NOT_sendingFacilityUniversalIdType</code>	



Variable	Default
NOT_receivingFacilityNamespaceId	any
NOT_receivingFacilityUniversalId	
NOT_receivingFacilityUniversalIdType	
NOT_messageProcessingId	P

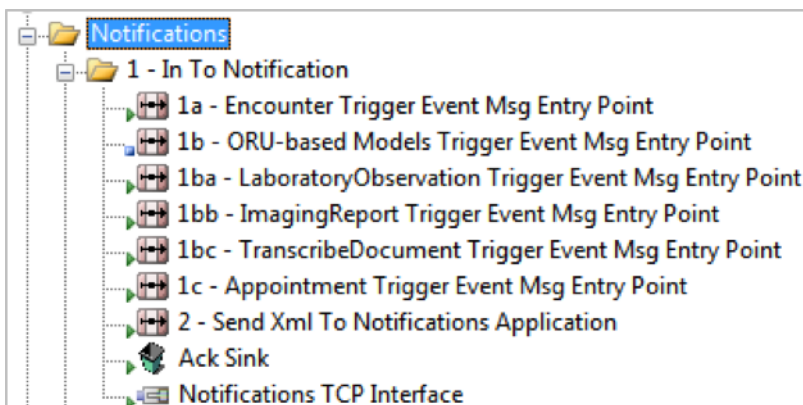
In Notifications 7.2.1, the following communication points are removed in the 3b - Send Email to SMTP Server route:

- Outgoing Direct Email Server
- Outgoing Direct Email Server (Documents)

## Changes to Rhapsody Routes - ORUs with Multiple OBRs and Textual Lab Results

To ensure ORUs with multiple OBR segments are processed by Notifications, do the following to modify Notifications Rhapsody routes :

1. Log in to the Rhapsody server using the Rhapsody IDE.
2. Expand the Notifications tree element.
3. Expand the 1 - In To Notification tree element.
4. Create a new Route called 1b - ORU-based Models Trigger Event Msg Entry Point.
5. Rename the following routes:
  - o 1b - LaboratoryObservation Trigger Event Msg Entry Point→ 1ba - LaboratoryObservation Trigger Event Msg Entry Point.
  - o 1c - ImagingReport Trigger Event Msg Entry Point→ 1bb - ImagingReport Trigger Event Msg Entry Point.
  - o 1d - TranscribeDocument Trigger Event Msg Entry Point→ 1bc - TranscribeDocument Trigger Event Msg Entry Point.
  - o 1e - Appointment Trigger Event Msg Entry Point→ 1c - Appointment Trigger Event Msg Entry Point.



6. In the newly created route, do the following:

- a. Add the `rde_CDR-REF-ORU-MODEL.s3d` message definition to the route and set **Startup State** to **Startup Third**.
- b. Navigate to the `rde_CDR-REF-ORU-MODEL.s3d` tab in route properties and add the following Context Extractions:
  - Property Name: `SendingApplicationNS`, Messages: `ORUR01`, Field Paths: `MSH.SendingApplication.NamespaceID`.
  - Property Name: `SendingFacilityNS`, Messages: `ORUR01`, Field Paths: `MSH.SendingFacility.NamespaceID`.
- c. Add a new JavaScript filter with the name `ORU OBR Message Splitter` and add the following Javascript to it:

```
//loop through all incoming messages
for (var i = 0; i < input.length; i++) {
    var readOnlyMessage = input[i];

    log.debug("Processing ORU Message " + (i + 1) + " of " +
input.length);
    var patientCount =
readOnlyMessage.getRepeatCount("ObservationMessage");

    //loop through all patients (ObservationMessage[] array) in
ORU message
    for (var patientIndex = 0; patientIndex < patientCount;
patientIndex++) {

        //log.debug("Processing patient " + (patientIndex + 1) + "
of " + patientCount);
        var obrCount =
readOnlyMessage.getRepeatCount("ObservationMessage[" +
patientIndex + "]/ObservationRequest");

        //loop through all OBRS for current patient
        for (var obrIndex = 0; obrIndex < obrCount; obrIndex++) {

            //log.debug("Processing OBR " + (obrIndex + 1) + " of " +
obrCount);
            createSingleObrMessage(readOnlyMessage, patientIndex,
obrIndex);
        }
    }
}
```

```

    }
    //var message = output.append(readonlyMessage);
}

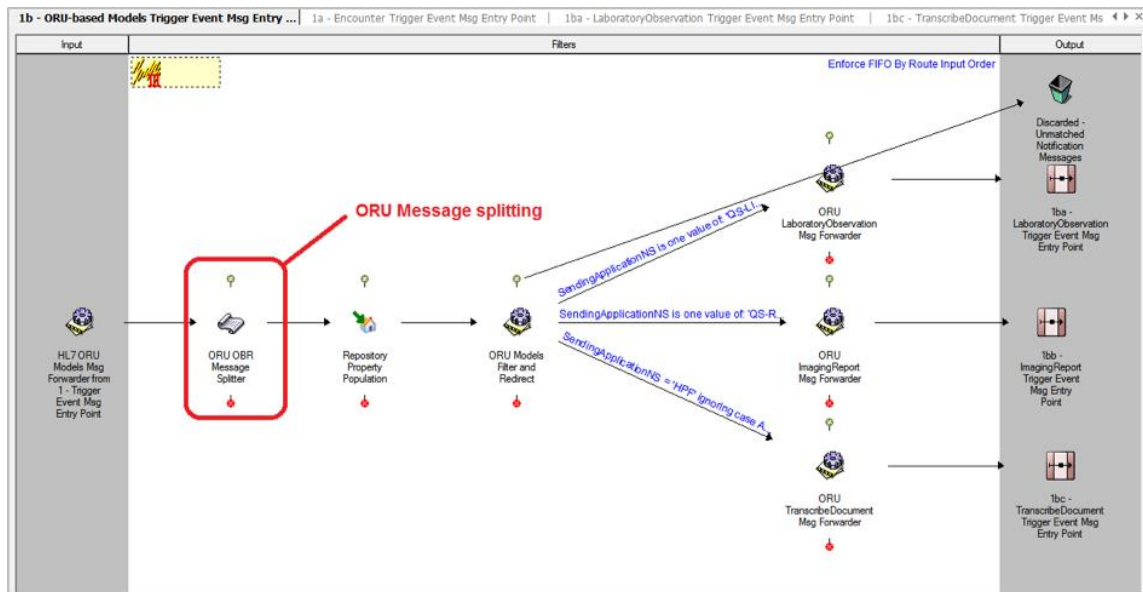
function createSingleObrMessage(readonlyMessage, patientIndex,
obrIndex) {
    log.debug("Creating copy of ORU message for
ObservationMessage[" + patientIndex + "]/ObservationRequest[" +
obrIndex + "]" group");

    var text = readonlyMessage.getField("MSH");
    text += readonlyMessage.getField("ObservationMessage[" +
patientIndex + "]/PatientInformation");
    text += readonlyMessage.getField("ObservationMessage[" +
patientIndex + "]/ObservationRequest[" + obrIndex + "]);
    var dsc = readonlyMessage.getField("DSC");
    if (dsc != null) {
        text += dsc;
    }

    var msg = output.append(readonlyMessage);
    msg.text = text;
    msg.bodyEncoding = readonlyMessage.bodyEncoding;
}

```

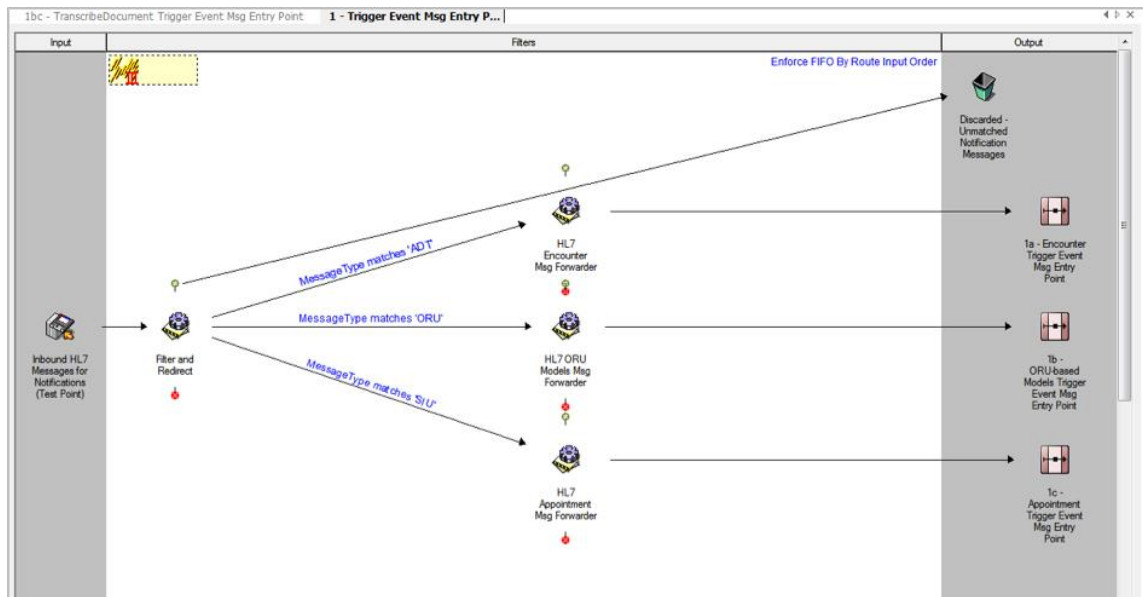
- d. Add a Property Population filter with the name 'Repository Property Population' and create a variable called NOT\_ORU\_Repository that maps to the Rhapsody Variable NOT\_Repository\_Laboratory.
- e. Add a No-operation with the name ORU Models Filter and Redirect.
- f. Add three additional No-operation filters to the right of ORU Models Filter and Redirect and link ORU Models Filter and Redirect to each one using Conditional Connectors:
  - ORU LaboratoryObservation Msg Forwarder with the condition type Filter messages using a message property, Property Name being SendingApplicationNS, Operator Is one of the following values(case insensitive), Operands QS-LIS, SUNQ.
  - ORU ImagingReport Msg Forwarder with the condition type Filter messages using a message property, Property Name being SendingApplicationNS, Operator Is one of the following values(case insensitive), Operands QS-RIS.
  - ORU TranscribeDocument Msg Forwarder with the following conditions:
    - Condition type Filter messages using a message property, Property Name being SendingApplicationNS, Operator Is one of the following values (case insensitive), Operands HPF.
    - Condition type Filter messages using a message property, Property Name being SendingFacilityNS, Operator Is one of the following values (case insensitive), Operands OMC.
- g. Add outputs and join the filters and outputs as depicted in the following screenshot:



7. Expand the Site Specific - Notifications tree element.

8. Edit the 1- Trigger Event Msg Entry Point so that all ORU messages are sent to the 1b - ORU-based Models Trigger Event Msg Entry Point route as shown in the following screenshot and perform the following actions:

- Remove 1ba - LaboratoryObservation Trigger Event Msg Entry Point route from output.
- Remove 1bb - ImagingReport Trigger Event Msg Entry Point route from output.
- Remove 1bc - TranscribeDocument Trigger Event Msg Entry Point route from output.
- Add 1b - ORU-based Models Trigger Event Msg Entry Point route to output.
- Remove HL7 Laboratory Observation Msg Forwarder No-operation filter.
- Remove HL7 Imaging Report Msg Forwarder No-operation filter.
- Remove HL7 Transcribe Document Msg Forwarder No-operation filter.
- Add HL7 ORU Models Msg Forwarder No-operation filter.
- Add Conditional Connector between Filter and Redirect No-operation filter and HL7 ORU Models Msg Forwarder with the condition type Filter messages using a message property, Property Name being MessageType, Operator Regular expression match (GNU), Operand ORU.



9. In 1b - ORU-based Models Trigger Event Msg Entry Point route, join the input and ORU OBR Message Splitter JavaScript filter.
10. In 1ba - LaboratoryObservation Trigger Event Msg Entry Point route, join the input and Laboratory Observation Trigger Event No-operation filter.
11. In 1bb - ImagingReport Trigger Event Msg Entry Point route, join the input and Imaging Report Trigger Event No-operation filter.
12. In 1bc - TranscribeDocument Trigger Event Msg Entry Point route, join the input and Transcribe Document Trigger Event No-operation filter.
13. Apply the mapper changes specified in the attached `MapperChanges.zip` file.
  - Navigate to **View > File Manager....**
  - Add the following mappers from the attached file:
    - NOT-LaboratoryObservationHl7ToXmlMapper-Fixed.mdf.
    - NOT-ImagingReportHl7ToXmlMapper-Fixed.mdf.
    - NOT-TranscribeDocumentHl7ToXmlMapper-Fixed.mdf.
  - In 1ba - LaboratoryObservation Trigger Event Msg Entry Point route, **update** LaboratoryObservation HL7 To XML Mapper Mapper Definition File to the newly added (`*-Fixed.mdf`) mapper.
  - In 1bb - ImagingReport Trigger Event Msg Entry Point route, **update** ImagingReport HL7 To XML Mapper Mapper Definition File to the newly added (`*-Fixed.mdf`) mapper.
  - In 1bc - TranscribeDocument Trigger Event Msg Entry Point route, **update** TranscribeDocument HL7 To XML Mapper Mapper Definition File to the newly added (`*-Fixed.mdf`) mapper.

14. Check in the changes and restart Rhapsody.

## 15. Remove notifications Rhapsody variables:

The configuration in this step is optional.

- a. Login to the Rhapsody server using the Rhapsody IDE.
- b. Open the Rhapsody Variables manager.
- c. Remove the following variables:

○

- NOT\_Repository\_Microbiology
- NOT\_Repository\_Radiology
- NOT\_Repository\_TextLaboratory

## Changes to Rhapsody Routes - Clinical Events Support

With the upgrade to new clinical event-based models (the default configuration), **In to Notifications** routes are no longer required. Customers who decide not to use clinical event support still require these routes.

Details on how to upgrade Notifications routes is described in [Changes to Rhapsody Routes - Handling New Clinical Event-Based Models](#).

## Privacy, Relationships, and Security

This section includes:

- [Patient and Document Privacy](#)
- [Relationship Service](#)
- [Security](#)

### Patient and Document Privacy

#### Overview

Notifications relies on Patient and Information Privacy in Orion Health Platform to control sensitive patient information being delivered to providers. Secure notification messages are delivered only when the evaluated access level is above a certain value.

When an event message is received, a notification is generated if the message matches any of the notification rules. Privacy is then evaluated to determine which recipients are allowed to be notified. The recipient must have:

- A relationship with the patient that corresponds to the incoming event. For example, the recipient is the patient's Primary Care Provider.
- An appropriate level of access to the patient.

To evaluate the access level, Notifications sends the following details to the Privacy Service:

- The Patient's identifier
- The Recipient's identifier
- The event itself

The Privacy Service evaluates privacy rules configured for the patient and the information type and returns the access level to Notifications.

#### Configuring Privacy in Orion Health Platform

For details on how to configure the Privacy Service in Orion Health Platform, refer to [Privacy Service](#) in the *Clinical Infrastructure Implementation Guide*.

Information Type privacy configurations are not fully available when privacy service is in legacy mode. Refer to [Privacy Service in Legacy Mode](#) in the *Clinical Infrastructure Implementation Guide* for details.

When a Non-system Event is created in the **Notifications (Advanced)** configuration, a corresponding Resource Type is created in the **Privacy** configuration. This resource type should be configured to apply the appropriate information type based on the content of the Notification object.

When you configure information typing for Notifications Event Types, ensure that the logic is the same as the information typing for the data type itself. Using the same logic ensures that users are not notified about data they cannot view and are notified of all new data they should view.





In the Resource Type script, your logic can reference information from within the Notification Data Model. For more information about the Notification Data Model, refer to [Configuring Event Data Model](#).

Use the following type of code to access data from within the Data Model in your Resource Type:


```
var content = resource.getEvent().getEventData().getContent();
var labServiceCode =
content.getValueOfAttributeAtPath("eventContent/service/code");
var labServiceCodingSystem =
content.getValueOfAttributeAtPath("eventContent/service/codingSystem");
```

## Privacy Access Level

The following table shows privacy access levels and indicates whether Secure messages are delivered to them.

Access Level	Secure Message Is Delivered	Reason
No Access		Provider does not have access to the information, so they are not notified.
Locked		Provider can see the information exists, but cannot access it, so they are not notified.
Sealed		Provider has to open the privacy seal to see the information, but can eventually access it, so they are notified.
List More		Provider has to open the privacy seal to see that the information exists, but can eventually access it, so they are notified.



Access Level	Secure Message Is Delivered	Reason
Full Access		Provider has unrestricted access to the data, so they are notified.

## Relationship Service

The relationship store service relies on a database view to retrieve relationships between the patient who an incoming event is for and providers.




### Configuring the Relationship Data Source





The relationship data source needs to be configured to connect to a database, which has a Relationship View or Table.

Ensure that patient identity is validated against the EMPI / Demographic source before registering a relationship between that patient and a clinician in the RelationshipStoreGeneric relationship database.

### Relationship View/Table Schema

The following table describes the relationship store view:

Column	Type	Nullable	Description
<b>patientidentifier</b>	VARCHAR2(255 CHAR)		The identifier of the patient. This is the unqualified patient ID combined with the <b>patientnamespace</b> which uniquely identifies the patient involved in the relationship.
<b>patientnamespace</b>	VARCHAR2(255 CHAR)		The namespace or assigning authority that issued the patientidentifier. This is used to scope the <b>patientidentifier</b> to form a unique id for the patient involved in the relationship.
<b>relatedEntityidentifier</b>	VARCHAR2(255 CHAR)		The identifier of the entity that has a relationship with the patient. Generally, this is a provider but could also be an organization or team. As with <b>patientidentifier</b> , this is the identifier part of the ID that is qualified with

Column	Type	Nullable	Description
			<b>relatedEntitynamespace</b> to form the unambiguous ID.
<b>relatedEntitynamespace</b>	VARCHAR2(255 CHAR)		The namespace or assigning authority that issued the <b>relatedEntitynamespace</b> . This is used to scope the <b>relatedEntityidentifier</b> to form a unique identifier or the entity that has a relationship with the patient.
<b>relationshipType</b>	VARCHAR2(255 CHAR)		The code identifying the type of relationship between the patient and the related entity. To be used this must match a relationship type defined in the relationship service. Refer to <a href="#">Additional Constraints</a> for details.
<b>endDate</b>	DATETIME		The date when this relationship ceases to be valid. This is allowed to be null in which case the <b>endDate</b> is inferred from the <b>startDate</b> by applying a validity period determined by the <b>relationshipType</b> .
<b>startDate</b>	DATETIME		The date when this relationship becomes valid. This is allowed to be null in which case the relationship is assumed to be valid at any time until the <b>endDate</b> .

## Additional Constraints

Constraint	Description
Uniqueness	<p>There should be a unique constraint across the following fields:</p> <ul style="list-style-type: none"> <li><b>patientidentifier</b></li> <li><b>patientnamespace</b></li> <li><b>relatedEntityidentifier</b></li> <li><b>relatedEntitynamespace</b></li> <li><b>relationshipType</b></li> </ul>

Constraint	Description
	This is to ensure there is only ever a single relationship between a given patient and entity for a particular relationship type.
Identifier References	Both the patient and related entity identifiers (qualified by their namespaces) are resolved using the Identity Service. Therefore, whatever values are stored in these columns must correspond to the identifiers in the systems that the Identity Service loads from.
Relationship Types	Relationship types need to correspond to the codes of relationship types configured in the Relationship Service. It is permissible to have other relationship types in this view but they will be ignored by the Relationship Service.
Indexes	<p>It is recommended the following be indexed in the underlying store since these are the fields the relationship service filters on:</p> <ul style="list-style-type: none"> <li>• <b>patientidentifier</b> or <b>patientnamespace</b> - It is recommended that there be a composite index on these fields as this is the primary selection criteria.</li> <li>• <b>startDate</b> - It is recommended the start date be indexed as it is used to filter the patient's relationships.</li> <li>• <b>endDate</b> - It is recommended the end date be indexed as it is used to filter the patient's relationships.</li> </ul>

## Security

Merging the configurations of Notifications into Clinical Portal adds a user group **Notifications** to Clinical Portal. By default, this user group has access to the **Notifications Subscription** screen.

For a user or healthcare provider to be able to manage their own subscriptions to notifications, the user has to be added to the **Notifications** user group.

To assign a user to the **Notification** user group, do the following:

1. Log in to Clinical Portal as administrator and navigate to **Concerto > Users**.
2. Search for and select the user you want to assign to the group.
3. In the **User Details** screen, add the group **Notifications** to the **Member Of** list, as shown in the following screenshot:

## User Details

Username	<b>clinician</b>	Inactivity Logout	<input type="text"/>
Authentication	<input type="radio"/> Use external (Windows NT/LDAP) password <input checked="" type="radio"/> Use Clinical Portal password	User Type	<b>Normal</b> Shared
Password Policy	Default Policy <input type="button" value="v"/>	Account Policy	Default Policy <input type="button" value="v"/> <a href="#">Configure</a>
	<input checked="" type="checkbox"/> Force password change on next login	Language	None specified
	<a href="#">Reset Password</a>		
Start Screen	<input type="text"/>		

[Update Preferences](#)

[Discard Changes](#)

### Role Memberships

Roles user performs



Roles user does not perform

Clinical User
RDE Clerical
RDE Doctor
RDE Nurse

### Group Memberships

Member of

Users
Clinicians

Not a member of

Medication History
<b>Notifications</b>
Notifications Admin
Patient Search &

## Utilities

This section includes the following:

- [Message Archive Datasource](#)
- [Audit Logs](#)
- [Enabling Performance Monitoring Using JAMon](#)

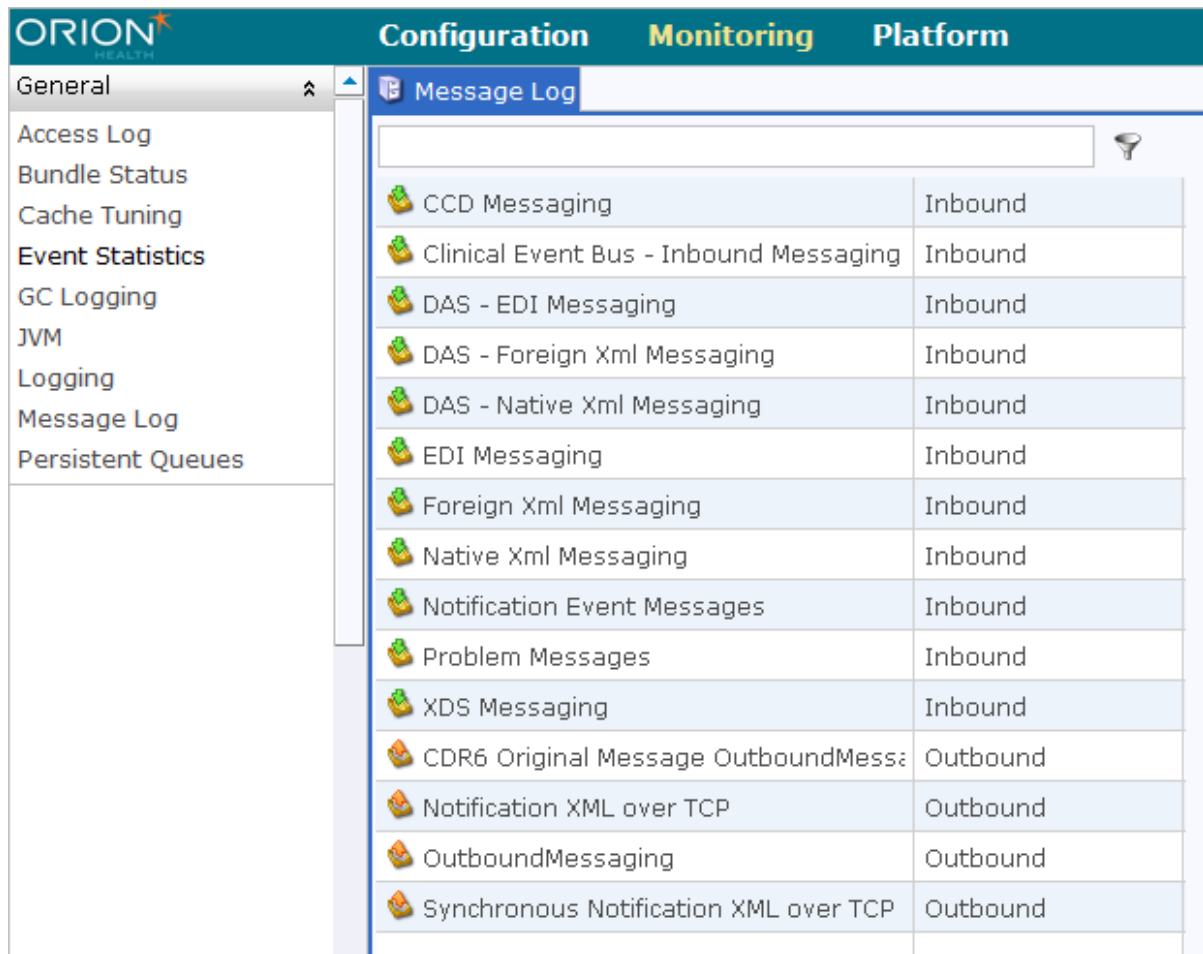
## Message Archive Datasource

Orion Health™ Platform stores a copy of every incoming and outgoing message in a message log. You can use this to investigate problems such as messaging notification or rules evaluation. A message log data source is used to store messages. By default, this data source is based on an embedded database in Orion Health Platform. However, this should have been configured to point to an external Database during the installation process. Oracle® and Microsoft® SQL Server are supported. Refer to the *HIE Installation Manual* for details.

### Accessing the Message Log

To browse the archived messages, do the following:

1. Log in to Orion Health Platform and navigate to **Monitoring > Message Log** to open the **Message Log** tab, as shown in the following screenshot:



The screenshot shows the Orion Health Administration Manual interface. The top navigation bar includes 'Configuration', 'Monitoring', and 'Platform'. The left sidebar lists various configuration options, with 'Message Log' selected. The main content area displays a table of message ports and their directions.

Message Port	Direction
CCD Messaging	Inbound
Clinical Event Bus - Inbound Messaging	Inbound
DAS - EDI Messaging	Inbound
DAS - Foreign Xml Messaging	Inbound
DAS - Native Xml Messaging	Inbound
EDI Messaging	Inbound
Foreign Xml Messaging	Inbound
Native Xml Messaging	Inbound
Notification Event Messages	Inbound
Problem Messages	Inbound
XDS Messaging	Inbound
CDR6 Original Message OutboundMess:	Outbound
Notification XML over TCP	Outbound
OutboundMessaging	Outbound
Synchronous Notification XML over TCP	Outbound

2. Select a message port from the **Message Log** pane on the left to display the **Endpoint Details** in the pane on the right, as shown in the following screenshot:

### Message Logs

Endpoint Details

Message Log

☒ Auto Update
 Message Count:8
 Search

From: 09/14/2011 00:00:00 To: 09/14/2011 23:59:59

Identifier  is  in

Type	Connection	Message Time	Response Time	RC
←	/127.0.0.1:34635	26-Jul-2011 17:00:28	26-Jul-2011 17:00:30	0
←	/127.0.0.1:34635	26-Jul-2011 17:00:26	26-Jul-2011 17:00:28	0
←	/127.0.0.1:34635	26-Jul-2011 17:00:25	26-Jul-2011 17:00:26	0
←	/127.0.0.1:34635	26-Jul-2011 17:00:24	26-Jul-2011 17:00:25	0
←	/127.0.0.1:34635	26-Jul-2011 17:00:22	26-Jul-2011 17:00:24	0
←	/127.0.0.1:34635	26-Jul-2011 17:00:19	26-Jul-2011 17:00:22	0
←	/127.0.0.1:34635	26-Jul-2011 17:00:18	26-Jul-2011 17:00:19	0
←	/127.0.0.1:34635	26-Jul-2011 17:00:12	26-Jul-2011 17:00:17	0

### Message Detail

Message Response Error

No message selected

Message Id:

[Download Message](#)

### 3. Carry out any required actions:

- Start and stop the messaging ports.
- See archived messages for the messaging ports.
- Select a message to display the request and response data of the message, as shown in the following screenshot:

The contents of the <notificationDocument><document> tag is base-64 encoded.



**Clinical Log**
Select a favorite search

User ID   
Patient ID Type   
User Events 

User Authentication  
Login  
Logout  
Account Status Change

  
Other Events 

Account Validation  
Add Role Membership  
Add mapping agent  
Configuration

  
Session

Patient ID   
Application 

Notifications

[Update list](#)  
Concerto Events 

Open Application  
Open Document  
Context Change

  
Date From:  To:   
Result 

☒ All  
☐ Success  
☐ Fail

[Search](#) [Reset](#)  [+](#)

Time	User ID	Event Type	Message	Patient ID	Patient Name	ID Type
12 Sep 10:44	notifications-e...	NotificationDelivery	Message delivered to delivery channel 'EMR'			Patient.Id.MRN
17 Aug 17:19	notifications-e...	NotificationDelivery	Message delivered to primary delivery channel 'DeliveryChannelKey:ConcertoUserMessaging'			Patient.Id.MRN
17 Aug 17:19	notifications-e...	NotificationDelivery	Message delivered to primary delivery channel 'DeliveryChannelKey:ConcertoUserMessaging'			Patient.Id.MRN

## Notification Audit Events

Notification audit event types are listed in the following table:

Audit Event Type	Description
Delivery channel created	Audit the creation of a new delivery channel.
Delivery channel deleted	Audit the deletion of a delivery channel.
Delivery channel updated	Audit changes to an existing delivery channel.
DeliveryConfiguration CREATE	Audit the creation of a new delivery configuration for subscriptions.
DeliveryConfiguration UPDATE	Audit changes to the delivery configuration for subscriptions.
DroppedTriggerEvent	Audit the dropping of an incoming event when the evaluation of notification rule does not result in any notification type.
DroppedNotification	Audit the dropping of a notification which is about to be delivered to a provider who does not have the right to access the information of that patient due to patient privacy.
EventType NEW	Audit the creation of a new event type.

Audit Event Type	Description
EventType UPDATE	Audit the changes to an existing event type.
EventType DELETE	Audit the deletion of an event type.
NotificationDelivery	Audit the success of delivering a notification to a recipient.
NotificationType CREATE	Audit the creation of a new notification type.
NotificationType DELETE	Audit the deletion of a notification type.
NotificationType UPDATE	Audit changes to an existing notification type.
Subscription CREATE	Audit the creation of a subscription.
Subscription DELETE	Audit the deletion of a subscription.
Subscription UPDATE	Audit changes for an existing subscription.
GlobalFormatUpdate	Audit changes to global message formats.

## Audit Event Details

Select an entry in the audit log search result to open the audit log details dialog, as shown in the following screenshot. The details dialog displays additional information about the audit log and a list of audit log parameters.

**Audit Event Details - Windows Internet Explorer**

Parameter List			
<b>ID</b>	1538	<b>Start Time</b>	17 Aug 17:19
<b>Type</b>	NotificationDelivery	<b>Source</b>	Notifications
<b>Message</b>	Message delivered to primary delivery channel 'DeliveryChannelKey:ConcertoUserMessaging'		
<b>Result</b>	Success		
<b>Session ID</b>	0b25ebc5-6817-4085-9a9a-e92450fc4ae0	<b>Terminal ID</b>	127.0.0.1
<b>User ID</b>	notifications-engine	<b>Patient ID Type</b>	Patient.Id.MRN

Audit Event Parameters	
Name	Value
Patient.Id.MRN.MRN	84568-4564
Provider.Id.ProviderId.clinical-portal-user rded	
documentId	HI7ObservationRequest PLA34243^ ^CANNS^ Urine Culture^Midstream Urine^
documentIdType	Orion - Clinical Data Repository/Microbiology Reports
informationAccessLevel	
messageId	Micro3
notificationTypes	7804058b-7702-4add-8361-5df7b7c7231b
patientAccessLevel	FULL_ACCESS

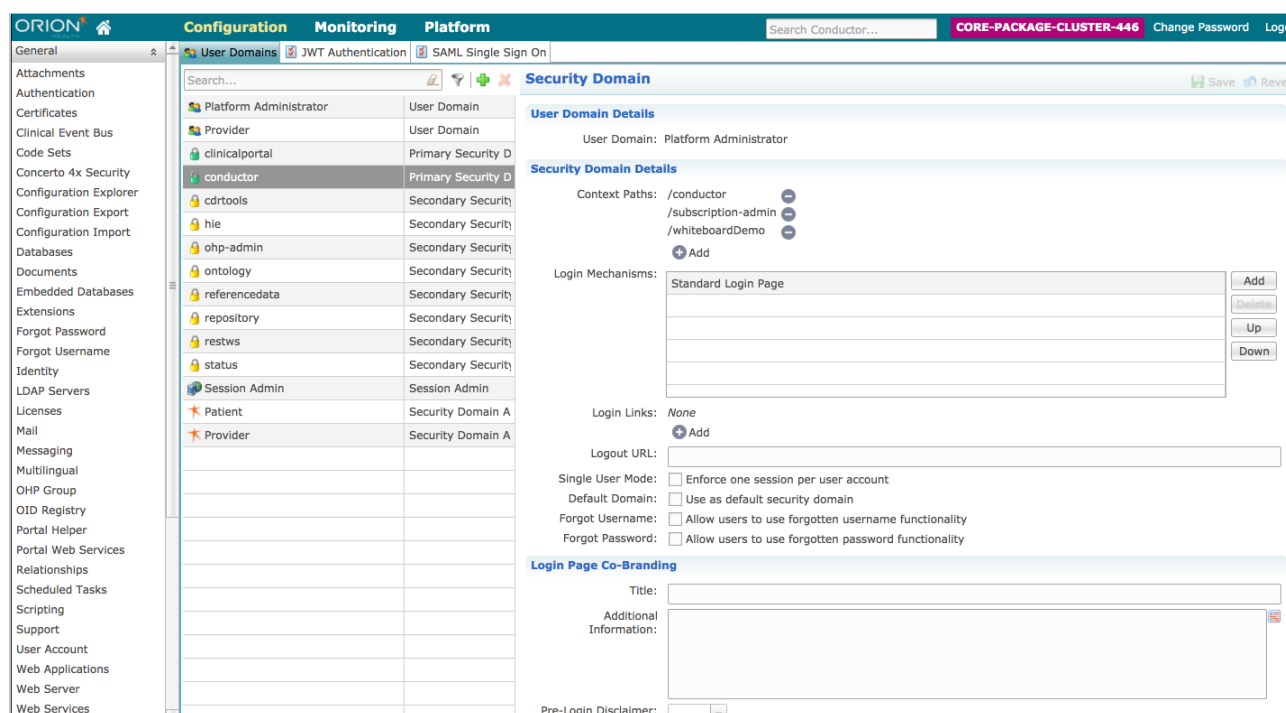
Close

## Enabling Performance Monitoring Using JAMon

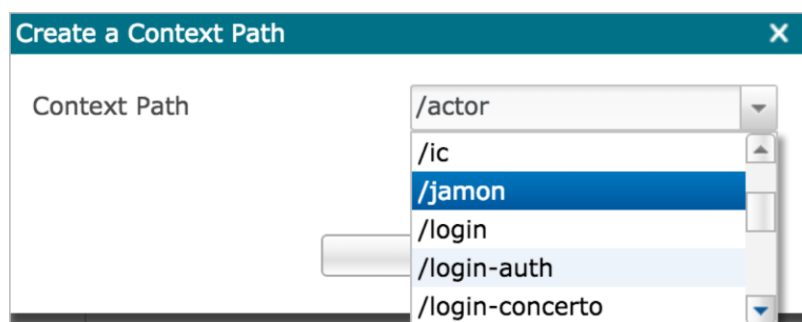
Java Application Monitor (JAMon) is a Java monitoring tool that allows you to monitor the application behavior using the predefined modules such as SQL, HTTP page requests, Log4j, and exceptions.

To enable performance monitoring using JAMon:

1. From Orion Health™ Platform, navigate to **Configuration > Authentication > User Domains** and select the **conductor** security domain from the list.



2. Under the Security Domain Details, select the **+ Add** button and then select **jamon** from the context path list.



3. Open a new browser window and then enter the URL in this format: `http://server name>:<port>/jamon`.

The JAMon home page is displayed.

- 
4. Select the **Enable Monitoring** button to enable performance monitoring using JAMon.

## Notifications REST Services

This page provides information about the Notifications REST Services used by Patient Portal's **Notifications Manager** screen.

The information provided on this page can be used only for Patient Portal.

### REST Services

Path	Method	Parameters	Return type	Description
/subscription-rs/ping	GET	-	String - "OK"	Method to validate whether the service is accessible.
/subscription-rs/enable	POST	EnableSubscriptionDto	String - "OK"	Set global notifications enabled preference for the logged in user.
/subscription-rs/related/save	POST	SaveSubscriptionDto	String - "OK"	Update the subscription preference for the logged in user to the specified identity.
/subscription-rs/related/enable	POST	EnableSubscriptionDto	String - "OK"	Set per patient notifications enabled preference for the logged in user.
/subscription-rs/notifications/related	GET	-	NotificationsDto	Retrieves the subscription notification information including: <ul style="list-style-type: none"> <li>Notification subscription types</li> <li>Delivery methods</li> </ul>

Path	Method	Parameters	Return type	Description
				<ul style="list-style-type: none"> <li>Subscription settings for each relationship the identity is related with</li> <li>User preferences for notification enabled/disabled state: <ul style="list-style-type: none"> <li>Global for the user</li> <li>Specific to each related identity</li> </ul> </li> </ul>

## Sample Response Data Transfer Object (DTO)

```

"payload":{
  "groups":[
    {
      "id":"AppointmentEvent",
      "label":"AppointmentEvent",
      "options":[
        {
          "id":"83a4783e-2554-4dfe-948f-055151309675",
          "label":"appointment cancelled"
        }
      ]
    }
  ],
  "defaultSubscriptions":[
    {
      "notification":{
        {
          "id":"83a4783e-2554-4dfe-948f-055151309675",
          "label":"appointment cancelled"
        },
        "deliveryMethods":[],
        "enabled":false,
        "relationshipType":"Patient"
      }
    }
  ],
  "enabled":true,

```

```

"subscriptions":
{
  "84568-3168@OHCP":
  {
    "subscriptions":[
      {
        "notification":
        {
          "id":"83a4783e-2554-4dfe-948f-055151309675",
          "label":"appointment cancelled"
        },
        "deliveryMethods":[
          "NoDeliveryChannel"
        ],
        "enabled":true,
        "relationshipType":null
      }
    ],
    "enabled":true
  }
}

```

## Subscribing to Notifications for a User

Notifications administrators can subscribe to notifications on behalf of a user.

In the **User Subscriptions** screen of Clinical Portal, administrators can do the following:

- Search for a Notifications user.
- View and update the user subscription details when a user is selected from the **User Subscription** page.

The screenshot displays the 'User Subscriptions' interface. At the top, there's a search section with input fields for 'User ID', 'Full Name' (split into 'First Name(s)' and 'Last Name'), and 'E-mail'. Below these is a 'Search' button and a 'Reset' button. A table below the search section lists subscription details. The table has four columns: 'User ID', 'Full Name', 'E-mail', and 'Description'. One entry is shown with 'rded' as the User ID, 'Notifier, Clinician' as the Full Name, and 'matthew.bang@orionhealth.com' as the E-mail. The left sidebar shows a navigation menu with 'Notifications' selected. The top right corner indicates the page title 'User Subscriptions' and a timestamp '13-Mar-08 53'.

When selecting a user row from **User Subscriptions Search**, the **User Subscriptions** page is displayed. The administrators can do the following:

- View the user's notification subscription page as users would do on the **My Subscriptions** page.
- Update the user's delivery details and subscriptions as users would do on the **My Subscriptions** page.



The screenshot shows the 'rded Clinician Notifier' interface for user 'matthew.bang@orionhealth.com'. The left sidebar contains navigation links: 'Concerto', 'Concerto UI', 'CCOW', 'Monitoring', 'Messaging', and 'Notifications'. The 'Notifications' section is expanded, showing 'User Subscriptions'. The main content area displays the user's email address and a list of notification preferences. A table titled 'Subscriptions for patients I have a relationship with' lists various notification types with checkboxes and delivery options. A warning message at the bottom states: 'Notification type that are greyed out have relationship type subscriptions. Enabling these notifications will result in overwriting the relationship type subscriptions.' Below this is a 'Save' button and a 'Cancel' button. A final note says: 'You can alternatively subscribe to notifications differently for each type of relationship with the patient. Change to subscribe by Relationship Type.'

My EMR: Auckland Central  
My Email Address: matthew.bang@orionhealth.com

By default:

- ☒ Notify By Concerto User Messaging
- ☒ Notify By Email
- ☐ Notify By No Delivery Channel
- ☒ Notify By SMTP Delivery Channel
- ☐ Notify in Daily Summary SMTP Delivery Channel
- ☒ Notify in Daily Summary Email
- ☐ Notify in Daily Summary Concerto User Messaging
- ☐ Notify in Daily Summary No Delivery Channel
- ☐ Send any associated document to My EMR

Choose which notifications you want to receive and where to send them. Daily Summary and Email cannot contain patient information so the detail must be sent elsewhere.  
All notifications are sent as they happen except the Daily Summary, which is sent during the night.

**Subscriptions for patients I have a relationship with**

Notification	Delivery Options
<input checked="" type="checkbox"/> Clinic Appointment Completed	Custom Change
<input type="checkbox"/> Inpatient Admission - EncounterEvent	
<input type="checkbox"/> Inpatient Discharge - EncounterEvent	
<input type="checkbox"/> Patient is admitted to ER - EncounterEvent	
<input type="checkbox"/> Patient is discharged from ER - EncounterEvent	
<input type="checkbox"/> A new document (imaging report) is available - LabEvent	
<input type="checkbox"/> Final Radiology Report is available - LabEvent	
<input checked="" type="checkbox"/> Final Laboratory Result is available - LabEvent	Custom Change
<input checked="" type="checkbox"/> Final Microbiology Result available - LabEvent	Custom Change
<input type="checkbox"/> Interim Microbiology Result available - LabEvent	
<input type="checkbox"/> A new document is available - LabEvent	

**Notification type that are greyed out have relationship type subscriptions. Enabling these notifications will result in overwriting the relationship type subscriptions.**

**Save** **Cancel**

**You can alternatively subscribe to notifications differently for each type of relationship with the patient. Change to subscribe by Relationship Type.**

You last logged in 12-Mar-15 14:41

## Viewing an inactive user's subscriptions

Inactive user subscriptions are read-only. The user's account must not be in the deleted state if you want to update the user subscription details. Refer to [Deleting a User](#) chapter in the *Clinical Portal Administration Manual* for details.

When you change the subscriptions, a `User Subscriptions Changed` system event is triggered and a notification may be sent to the affected user. Refer to [Adding and Deleting Event Types](#) and [Modifying Event Types](#) for information about configuring events.