Washington DC Telecommunications Service Operations Management

Last updated: 02/01/2024

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Telecommunications Service Operations Management

Proactively monitor the health of your networks and services that helps to prevent potential downtime. Streamline your response with Event Management and Operational Intelligence.

Telecommunications Service Operations Management (TSOM) integrates with monitoring tools such as Event Management and Operational Intelligence to simplify operations and provides an end-to-end service view across telecommunications technology domains. The TSOM uses the TM Forum Alarm Management API to automate the collection, correlation, and analysis of vast network event data across disparate domains. It provides front and back-office teams with a single end-to-end service health view.

Handling the external events using Telecommunications API notification

Use the Telecommunications API notification to receive the external events that occurring in the customer network system so that you can promptly respond to them in the Now Platform.
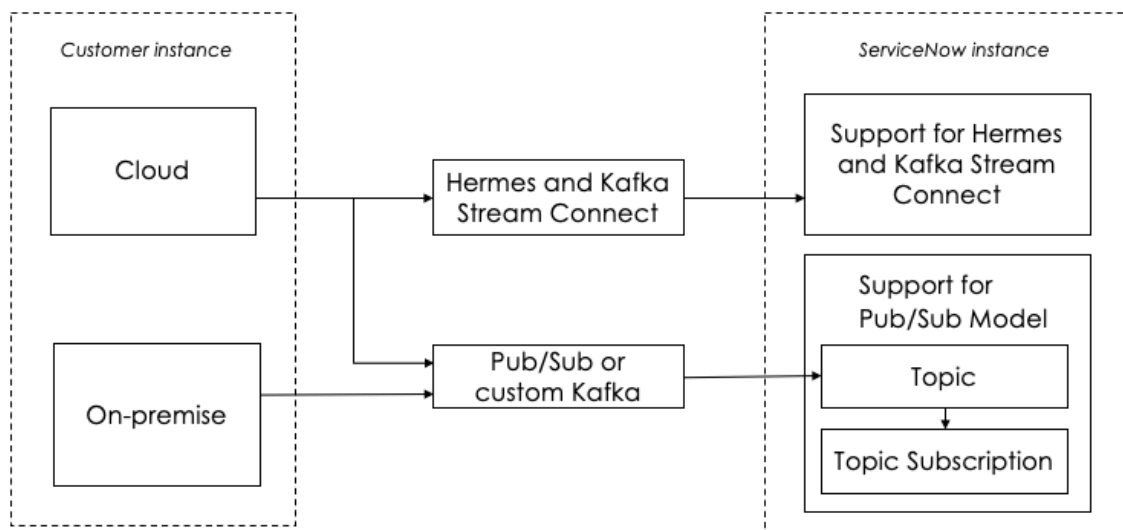
Overview

Telecommunications API notification is a feature available in the Telecommunications Alarm Management Open API application. The Telecommunications API notification enables ServiceNow to receive the incoming notifications that occurring in the external network system and responds to them in a timely manner. It enables the broadcasting of events to the external systems through platform capabilities by eliminating the need for point to point connections.

Telecommunications API notification receives incoming notifications from the external systems that are subscribed on your network. When the notifications are received from the external system, you can create the events for the responses by using the Event Management application. Based on the collected information, the Event Management provides dashboards showing a consolidated view of all service-impact events.

Telecommunications API notification data model

The following diagram shows the components in the data model for the Telecommunications API notification.

API notification data model

The Telecommunications API notification enables ServiceNow to receive incoming notifications through the event-driven architectures such as the Publisher/Subscriber (Pub/Sub) subscription model, Hermes, and Kafka Stream Connect. While cloud customers have the flexibility to select between both architectures, on-premise customers are limited to using their own Kafka or Pub/Sub subscription model.

- To learn more about Stream connect for Apache Kafka Stream, see Using Stream Connect for Apache Kafka ↗ .

- To learn more about Hermes Messaging Service, see Hermes Messaging Service ↗ .

In the Pub/Sub model, incoming notifications are categorized into topics. You use ServiceNow to publish the incoming notifications to these topics, and subscribers (customers) have the flexibility to select the topics to which they want to subscribe. This process enables subscribers to select only those messages that align with their interests. For example, if there are 10 topics for incoming messages from the external system, a customer can opt to subscribe to two of them based on their requirement. Consequently, when notifications are received from the external system, events are generated specifically for the two topics to which the customer has subscribed.

Modeling the Telecommunications API notification workflow

The following steps help to configure the Telecommunications API notification in the ServiceNow instance.

1. Create a topic: You can create topics either by manually typing the external message details or automatically collecting the available topics from the external system.

2. Create a topic subscription: You subscribe to the available topics for incoming notifications from the external system, based on the customer preference. Additionally, you generate the callback URL and register the subscription.

3. Activate the endpoint of the Telecommunications Alarm Management Open API connection: To receive responses from the external system, activate the subscribed endpoints of the Telecommunications Alarm Management Open API connection in the Flow Designer.

4. Provide the callback URL to the external system for receiving notifications. Customer can also reuse the callback URL. When requests from TMF 688 hit the Callback URL, it initiates the *Default Alarm Event Notification Trigger* flow to create an event.

To learn more about the functions to handle Event Notification Management Open API requests that are triggered by external trigger definitions to create, update, and delete events, see Event Notification Management Open API ◲ and TMFTopicEventAPIUtilOOB - Scoped ◲.

This workflow creates an event in the Event Management application. To learn more about using Event Management, see Event Management ◲.

Create a topic

Create a topic and publish the incoming notifications from the external system to the topic. By creating the topics, subscribers can select the topics to which they want to subscribe.

Before you begin
Make sure that the Telecommunications Alarm Management Open API (sn_ind_tmf642) application is installed with the Now Platform.

Role required: admin, sn_api_notif_ mgmt.topic_creator

About this task
You can create topics either by manually typing the external message details or automatically collecting the available topics from the external system. When you create a topic, it creates a record in the Topic [sn_api_notif_mgmt_topic] table.

Procedure

1. **All** > **Telecom API Notification** > **Topics**.

2. Select **New**.
   If you've integrated with an external system, you can select **Get Topics** to get the available topics automatically. This action triggers the *Event Alarm Notification API* subflow. To learn more about the functions that enable you to query and manipulate records in the topic, see TopicUtilOOB - Scoped ◲.

3. On the form, fill in the fields.

   #### Topic form

Field	Description
Topic id	Unique topic id.
Topic name	Name of the topic.
Type	Type of topic. Select one from the following: ◦ Ingress: Option for inbound notification. ◦ Egress: Option for outbound notification.
Header query	Encoded header query parameters. To learn more about the query parameters that follow the TMF 688 standards, see the TM Forum ◲.
Content query	Encoded content query parameters.

Field	Description
	To learn more about the query parameters that follow the TMF 688 standards, see TM Forum ↗.
Description	A brief description about the topic.

4. Select **Submit**.

Result
A topic is created.

What to do next
You can create the topic subscription according to the customer requirement.

Create a topic subscription

Subscribe to the topic in the Now Platform that you want respond to the incoming notification from the external system. By subscribing to the topic, the subscriber receives the notifications based on the topics that you subscribe to.

Before you begin

- Make sure that the Telecommunications Alarm Management Open API (sn_ind_tmf642) application is installed with the Now Platform.

- Create topics for the incoming notifications.

Role required: admin, sn_api_notif_mgmt.subscription_creator

About this task
You subscribe to the available topics for the incoming notifications from the external system, based on the customer preference. You generate the callback URL to share with the customers. When a request from an external system hits the callback URL, it initiates the creation of an event in the Event Management application.

Additionally, you register the topic subscription to start receiving the incoming notifications. When you create a topic subscription, it creates a record in the Topic Subscription [sn_api_notif_mgmt_subscription] table. To learn more about the methods to query and manipulate records in the Topic Subscription, see TopicSubscriptionUtilOOB - Scoped ↗.

Procedure

1. All > **Telecom API Notification** > **Subscription**.

2. Select **New**.

3. On the form, fill in the fields.

Topics Subscription form

Field	Description
Topic	Topic that you want to subscribe.
CallbackURL	The callback URL that you're sharing with the external system to capture the incoming notification. The URL is generated

Field	Description
	automatically when you select **Generate CallbackURL**.
Filter query	Encoded content query parameters from the topic. You can also modify the filter query. To learn more about the query parameters that follow the TMF 688 standards, see TM Forum ⬈.
Registration status	Status of the Topic registration with the external system. By default, it's **Unregistered**. If the process is successful, the field value changes to **Registered**. Otherwise it's **Error**.
Registration message	Registration status message from the external system.
Subscription id	Unique subscription id from the external system.

4. Get the callback URL by selecting **Generate CallbackURL**.

5. Register the subscription by selecting **Register**.

Result
A trigger definition is created for the callback URL and the topic is registered to the external system.

What to do next
In the Flow Designer, you activate the endpoints of the Telecommunications Alarm Management Open API connection.

Activate the endpoint of the Telecommunications Alarm Management Open API connection

Activate the endpoint of the Telecommunications Alarm Management Open API connection. By activating the endpoint, you receive the incoming notifications from the external system for the topic that you registered.

Before you begin

• Create the topic and subscribe to it to receive the incoming notifications.

• Generate a callback URL and register the topic subscription.

Role required: admin

About this task
You activate the subscribed endpoints of the Telecommunications Alarm Management Open API connection in the Flow Designer to receive responses from the external system.

Procedure

1. Navigate to **All** > **Process Automation** > **Flow Designer**.

2. On the **Connections** tab, select **Telecommunications Alarm Management Open API**.

3. Open the endpoint record that you want to activate.

4. Select **Activate**.

Telecommunications API notification user roles

Administrators can assign user roles to grant access to the API notification database tables. The following standard roles for the Topic [sn_api_notif_mgmt_topic] and Topic Subscription [sn_api_notif_mgmt_subscription] tables are included in the ServiceNow system.

Telecommunications API notification roles

Role	Description
sn_api_notif_ mgmt.topic_subscription_viewer	Role that enables with read access to the Topic and Topic Subscription tables.
sn_api_notif_ mgmt.topic_creator	Role that enables with create, read, and edit access to the Topic table.
sn_api_notif_mgmt.subscription_creator	Role that enables with create and read access to the Topic Subscription table.
sn_api_notif_mgmt.subscription_admin	Role that enables with the following permissions: • Create and read access to the Topic and Topic Subscription tables. • Change the status of registration to deregister a topic subscription.