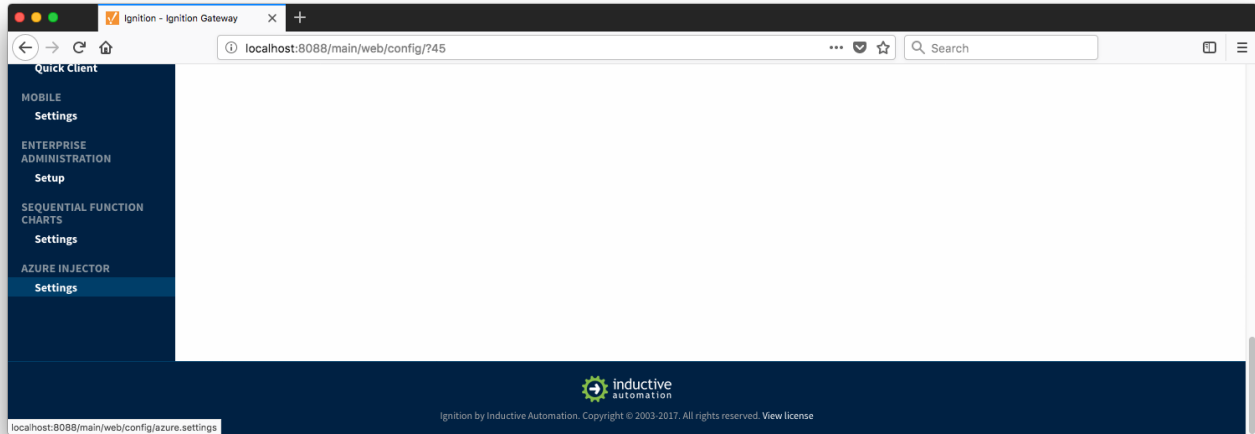


# AZI: Configuration

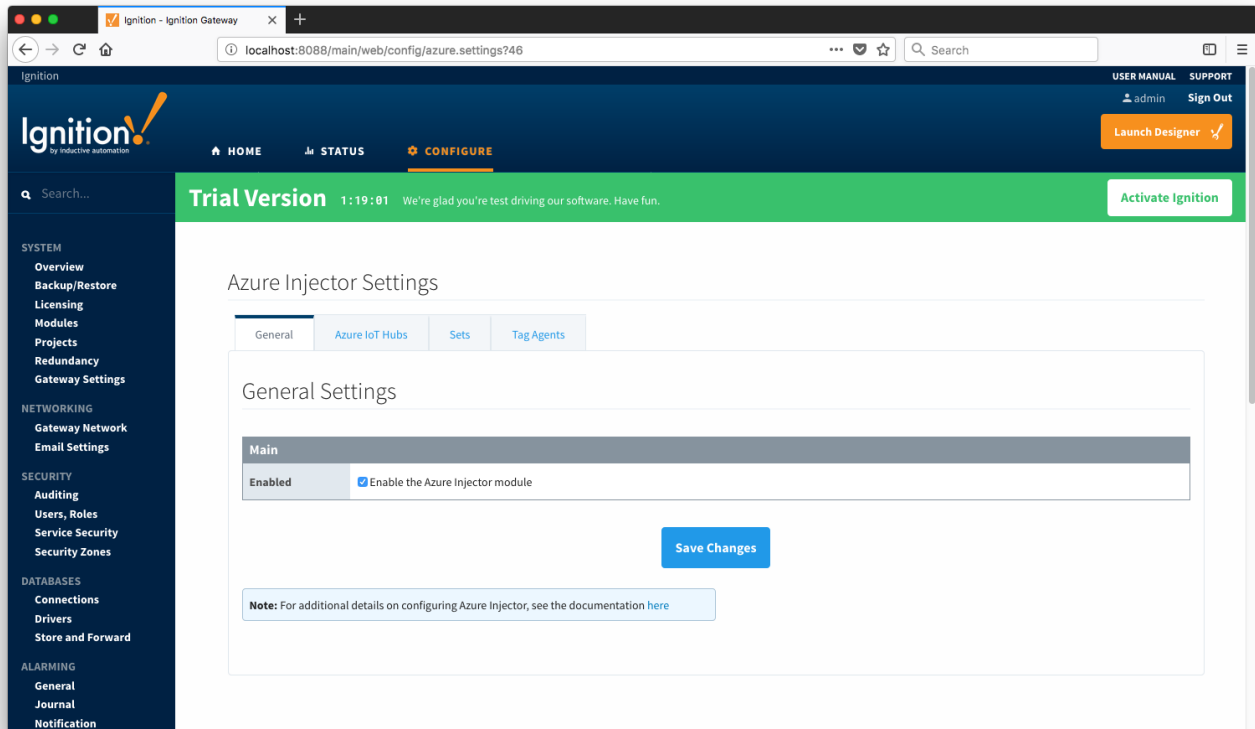
The Azure Injector module provides the ability to push Tag data to an Azure IoT Hub. The settings configuration for this module are located under the Configure tab of the Ignition Gateway web UI.



Once in the configuration section there are four tabs: General, Azure IoT Hubs, Sets, and Tag Agents. Each of these tabs is described in detail in the following sections.

## General

The first tab contains the general settings for the Azure Injector module.



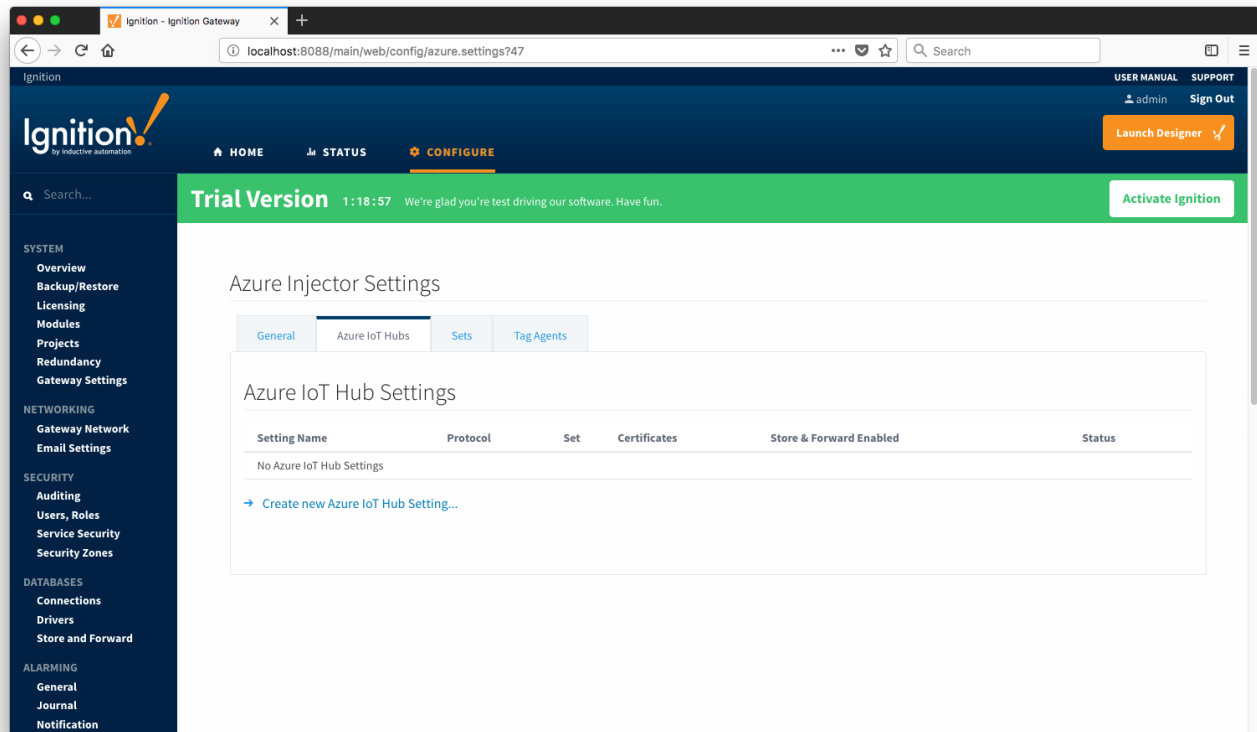
The general configurations options available on this tab are listed below:

## Main

- **Enabled**
  - Sets whether the module is enabled or disabled. If disabled, the Tag Agents will not run and now data will be pushed to any configured endpoints.

## Azure IoT Hubs

The next tab is the list of Azure IoT Hub endpoints that the module should connect to to push tag data.



One or more Azure IoT Hub endpoints can be configured on this tab. The configuration options for an Azure IoT Hub connection are listed below.

### Main

- **Setting Name**
  - This is a friendly name of the Azure IoT Hub used to easily identify it. This must also be unique.
- **Connection String**
  - This is the Azure IoT Hub connection string used to connect. This string can be one of the following:
    - An IoT Hub connection string with the following format:
      - `HostName=<Host Name>;SharedAccessKeyName=<Key Name>;SharedAccessKey=<SAS Key>`
    - An IoT Hub's Event Hub-compatible connection string with the following format:
      - `Endpoint=<ENDPOINT>;SharedAccessKeyName=<Key Name>;SharedAccessKey=<KEYVALUE>`
    - An IoT Hub device connection string with the following format:
      - `HostName=<Host Name>;DeviceId=<Device Name>;SharedAccessKey=<Device Key>`
      - **Note: If using MQTT as the protocol (next section), this is the connection string format that must be used.**
- **Protocol**
  - The protocol to use when connecting to the Azure IoT Hub. It can be one of the following:
    - MQTT
      - **Note: If using MQTT as the protocol, the connection string (previous section) must be a 'device' connection string.**
    - HTTPS
    - AMQPS
    - AMQPS\_WS
- **Set**
  - The Set to associate this Azure IoT Hub connection with.
- **Certificates**
  - The server certificates to use if required.

### Store & Forward

- **Store & Forward Enabled**
  - Whether to enable Store & Forward capabilities for this endpoint
- **Store & Forward Type**
  - The type of the Store & Forward mechanism
- **Message Capacity**
  - The Maximum number of messages to store before dropping the oldest historical messages
- **Flush Period**
  - The period of time to wait (in milliseconds) between sending when flushing messages

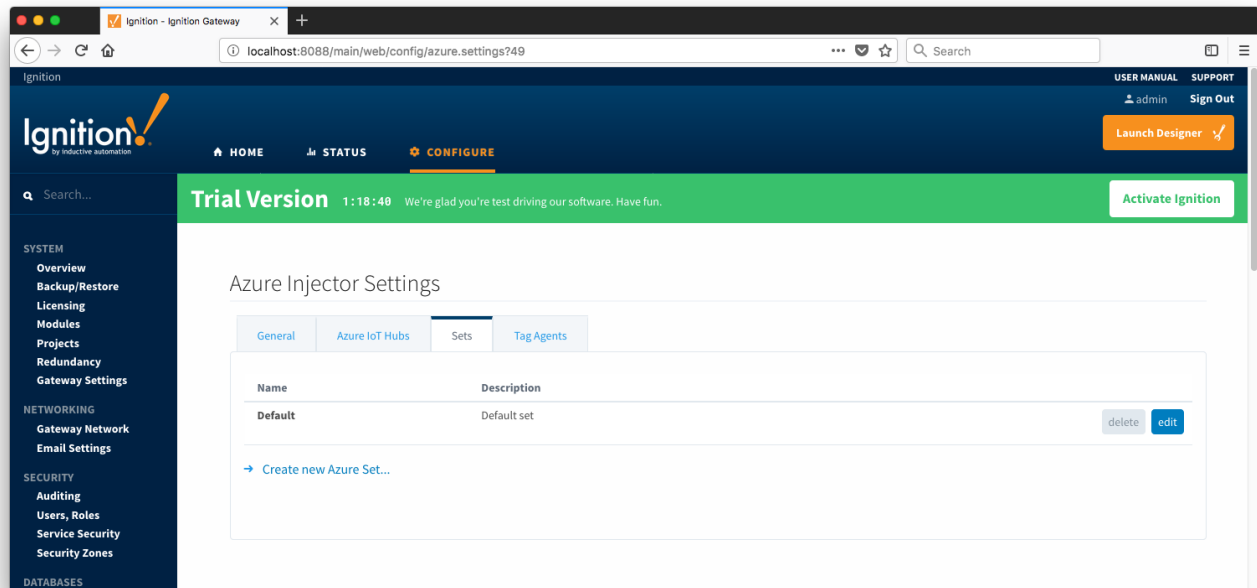
Clicking on the "Create new Azure IoT Hub Setting..." link will bring up the following form for adding a new Azure IoT Hub endpoint.

The screenshot shows the Ignition Gateway web interface. The top navigation bar includes 'HOME', 'STATUS', and 'CONFIGURE'. A green banner indicates a 'Trial Version' with a timer at 1:18:50. The left sidebar lists various system settings categories. The main content area is titled 'Azure Injector Settings' and contains a 'New Azure IoT Hub Setting' form. The form has four tabs: 'General', 'Azure IoT Hubs', 'Sets', and 'Tag Agents'. The 'General' tab is selected, showing the following fields:

- Main**
  - Setting Name**: A text input field with a placeholder 'A friendly name for this Azure IoT Hub setting'.
  - Connection String**: A text input field with a placeholder 'The connection string used for establishing a connection with the IoT Hub.'
  - Protocol**: A dropdown menu set to 'MQTT' with a description 'The IoT Hub client protocol (default: MQTT)'.
  - Set**: A dropdown menu set to 'Default' with a description 'The Set this IoT Hub is associated with'.
  - Certificates**: A 'Browse...' button and a text field showing 'No file selected.' Below it is a 'Files:' label and an empty file list.
- Store & Forward**
  - Store & Forward Enabled**: A checkbox labeled 'Enable Store and Forward capabilities for this stream (default: false)'.
  - Store & Forward Type**: A dropdown menu set to 'Choose One' with a description 'The Type of this Store & Forward mechanism'.

## Sets

The Sets tab contains a list of Azure Sets. Each set represents a grouping of Azure IoT Hub endpoints. When a set is referenced by a Tag Agent the Agent will push Tag data to all Azure IoT Hub endpoints contained within that Set. The Sets are disjoint, meaning that a single Azure IoT Hub endpoint cannot be in more than one set. Out of the box the Azure Injector module will have one "Default" set defined.

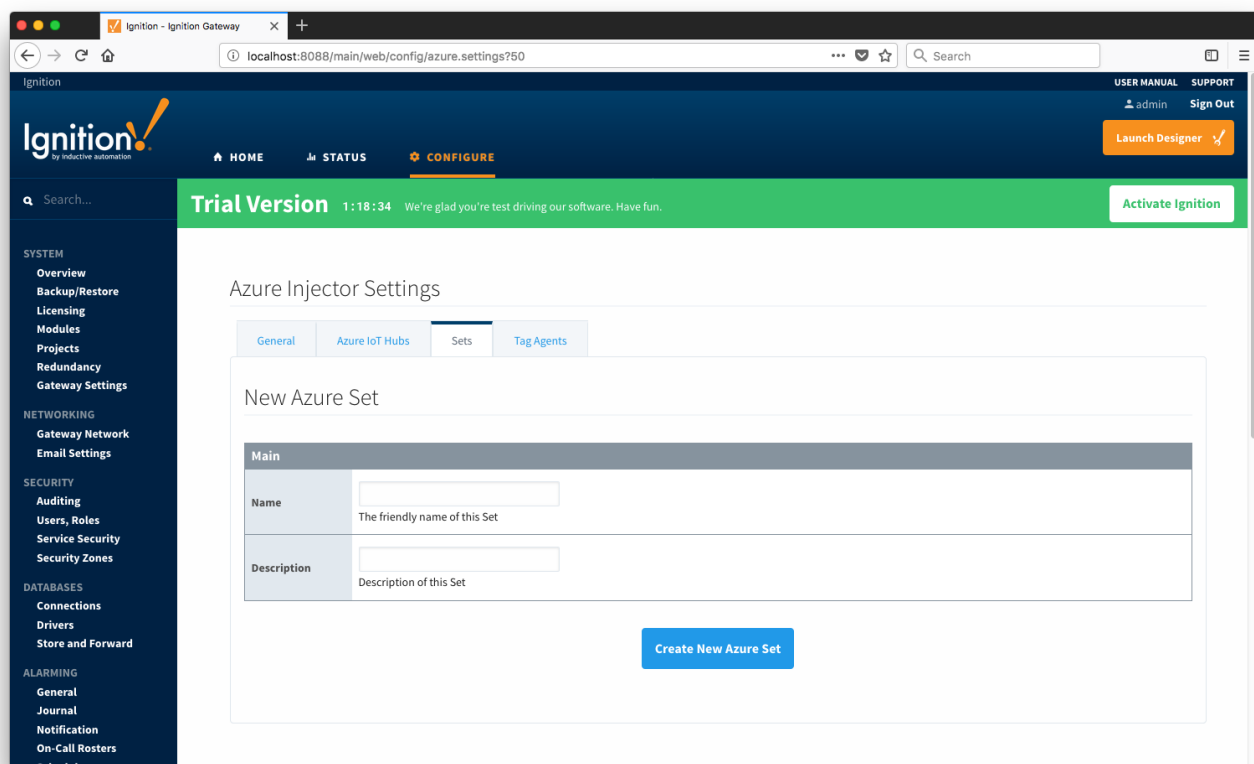


Additional Sets can be configured for situations where multiple Tag Agents will need to push to different Azure IoT Hub endpoints. The configuration options for Sets are listed below.

## Main

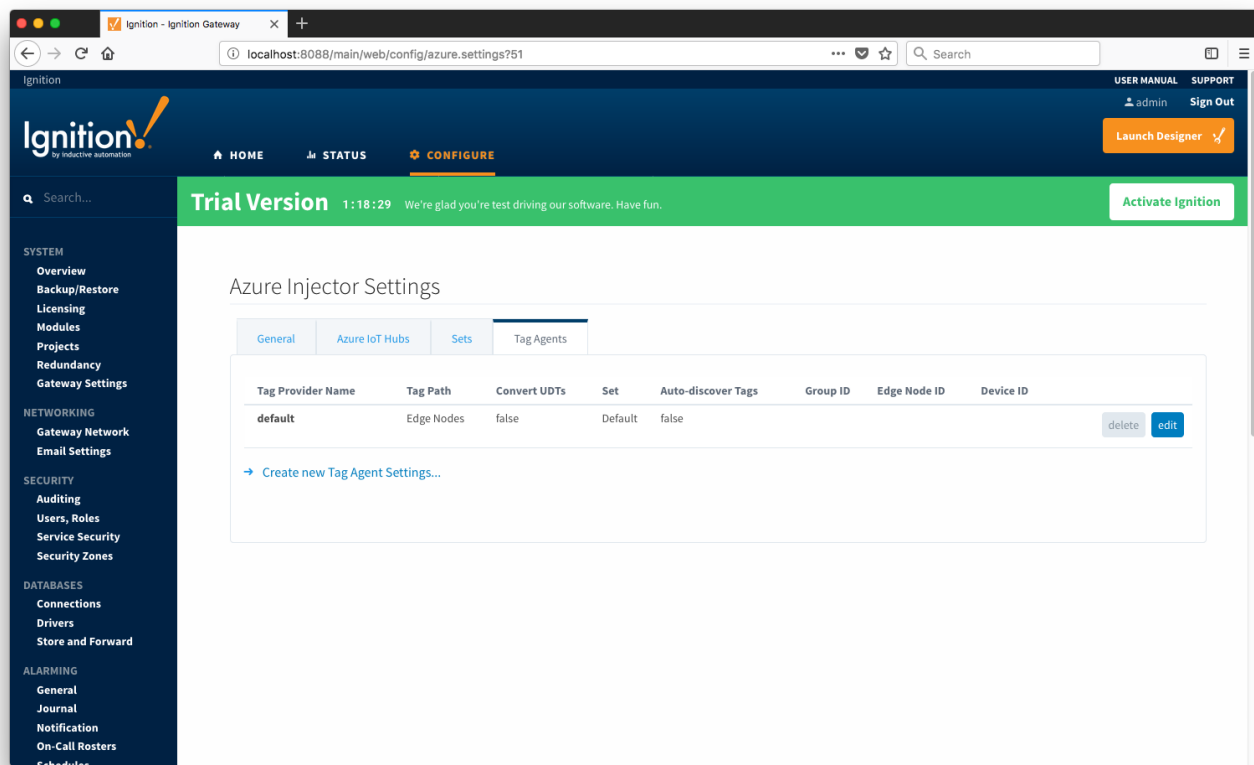
- **Name**
  - This is the friendly name of the set used to easily identify it.
- **Description**
  - This is a friendly description of the set.

Clicking on the 'Create new Azure Set...' link will bring up the following form to add a new Set.



## Tag Agents

Tag Agents are the workers within Azure Injector that monitor tag events, convert them to a JSON representation, and push them to one or more Azure IoT Hub endpoints. Out of the box the Azure Injector module will have one "default" Tag Agent defined.



Tag Agents are configured to point to a single folder. All Tags within that folder will be monitored by the Tag Agent.

## Agent Settings

- **Tag Provider Name**
  - The name of the Tag provider containing the tags.
- **Tag Path**
  - An optional folder path under the Tag provider where the root folder of the Tags can be found.
- **Tag Pacing Period**
  - The buffer period, in milliseconds, that Tag events will be aggregated into a single payload before pushing.
- **Convert UDTs**
  - Whether to convert UDT members to normal Tags before publishing. If enabled the Tags representing the UDT member will retain their member path prefixed by the UDT Instance name.
- **Set**
  - The Set of Azure IoT Hub endpoints that the Tag Agent will push to.
- **Auto-discover Tags**
  - Whether newly added tags should be dynamically scanned and their values pushed. This field is disabled by default. It should remain disabled while manually editing tags and/or their configurations. It should only typically be enabled in systems where tags are created in real time.

## Sparkplug Settings

- **Group ID**
  - An ID representing a logical grouping of MQTT Edge Of Network (EoN) Nodes and Devices into the infrastructure.
- **Edge Node ID**
  - An ID that uniquely identifies the MQTT Edge Of Network (EoN) Node within the infrastructure.
- **Device ID**
  - An optional ID that uniquely identifies a Device within the infrastructure.

The Sparkplug settings are optional and allow for an additional customization of how the Tag Agent scans and discovers tag within the specified Tag Path. Here is a brief description of how the Agent scans/discovers folders based on the different combinations of potential Sparkplug Settings.

- If all three IDs are left blank the Agent will assume the following folder structures follow the Tag Path:
  - `<groupFolder>/<edgeNodeFolder>/<deviceFolder>/<tags>`
  - `<groupFolder>/<edgeNodeFolder>/<tags>`
- If only the Group ID is specified the Agent will assume the following folder structure follows the Tag Path:
  - `<edgeNodeFolder>/<deviceFolder>/<tags>`
  - `<edgeNodeFolder>/<tags>`
- If the Group ID and the Edge Node ID are specified the Agent will assume the following folder structure follows the Tag Path:
  - `<deviceFolder>/<tags>`
  - `<tags>`
- If the Group ID, Edge Node ID, and the Device ID are specified the Agent will assume the following folder structure follows the Tag Path:
  - `<tags>`

As you can see, the Sparkplug settings can be used to either hard-code these IDs, or leave them blank so that the Agent will scan and discover them based on the tag tree layout.

Clicking on the 'Create new Tag Agent Settings..' link will bring up the following form to add a new Tag Agent.

Ignition - Ignition Gateway

localhost:8088/main/web/config/azure.settings?52

Search

Ignition

USER MANUAL

SUPPORT

admin

Sign Out

Launch Designer

HOME

STATUS

CONFIGURE

Trial Version

1:18:22

We're glad you're test driving our software. Have fun.

Activate Ignition

Search...

SYSTEM

Overview

Backup/Restore

Licensing

Modules

Projects

Redundancy

Gateway Settings

NETWORKING

Gateway Network

Email Settings

SECURITY

Auditing

Users, Roles

Service Security

Security Zones

DATABASES

Connections

Drivers

Store and Forward

ALARMING

General

Journal

Notification

On-Call Rosters

Schedules

TAGS

History

Realtime

OPC-UA SERVER

Certificates

Devices

Settings

OPC CONNECTIONS

Servers

Quick Client

Azure Injector Settings

General

Azure IoT Hubs

Sets

Tag Agents

New Tag Agent Settings

Agent Settings

Tag Provider Name

The Name of the tag provider

Tag Path

A path to the root folder where the tag tree starts (optional)

Tag Pacing Period

The waiting period in milliseconds after an initial tag change event before pushing all changed tags

Convert UDTs

Converts UDT members to normal Tags

Set

Default

The Set this Agent is associated with

Auto-discover Tags

Dynamically discovers Tags and Folders as they are created without requiring a Refresh

Sparkplug Settings

Group ID

An ID representing a logical grouping of Edge Nodes and Devices (optional)

Edge Node ID

An ID representing an Edge or Network (EoN) Node (optional)