



Cisco Secure Network Analytics

Network Visibility Module (NVM) Configuration Guide 7.5.1



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Introduction

Overview

Use this guide to configure Cisco Secure Network Analytics (formerly Stealthwatch) and the Cisco AnyConnect Secure Mobility Client Network Visibility Module (NVM) to enable:

- Storing and viewing of NVM fields
- Existing policy violation rules to trigger from NVM flows
- NetFlow detections based on NVM traffic
- Creating Custom Security Events based on the endpoint connections



Secure Network Analytics with NVM supports IPXIF/NetFlow v10 over UDP, but it does not support DTLS.

Requirements

- AnyConnect v4.7 and later
- Secure Network Analytics v7.5.1.

You no longer need to purchase an Endpoint license for NVM telemetry starting with v7.5.1.



NVM traffic is now included along with NetFlow when calculating Flow Rate (FPS) licensing requirements. For more information about licensing, refer to the [Smart Software Licensing Guide 7.5.1](#).

Data Store Capabilities

Cisco Secure Network Analytics Data Store provides:

- Full visibility to the endpoint, including on-network and off-network data
- Visibility to any NVM fields from the Endpoint Traffic (NVM) report in the Report Builder app
- A minimum of 30 days of storage of NVM data
- Improved processing and query performance
- NetFlow detections based on NVM traffic
- Creating Custom Security Events based on the endpoint connections

The following table provides performance estimates for a standard enterprise traffic profile (most customers):

Flows per second (FPS)		Number of FC 4210s	Number of DS 6200s/ 31 Days Storage
NetFlow	NVM		
300,000	150,000	1	3



There are several factors that may affect your specific performance, such as number of hosts, average size of flows, and more. While we do our best to represent the data as fairly and accurately as possible, your environment may experience different limits.

Configuration

Configure NVM profile on AnyConnect



The AnyConnect Profile Editor is available through Cisco Adaptive Security Device Manager (ASDM) or as a standalone offering. For more information about how to use the AnyConnect Profile Editor, refer to the [AnyConnect Administrator Guide](#).

1. Verify you have installed the Network Visibility Module.



2. Open the Network Visibility Module Profile Editor.
3. In the **Collector Configuration** section, enter the **IP Address** and **Port** of your Flow Collector.

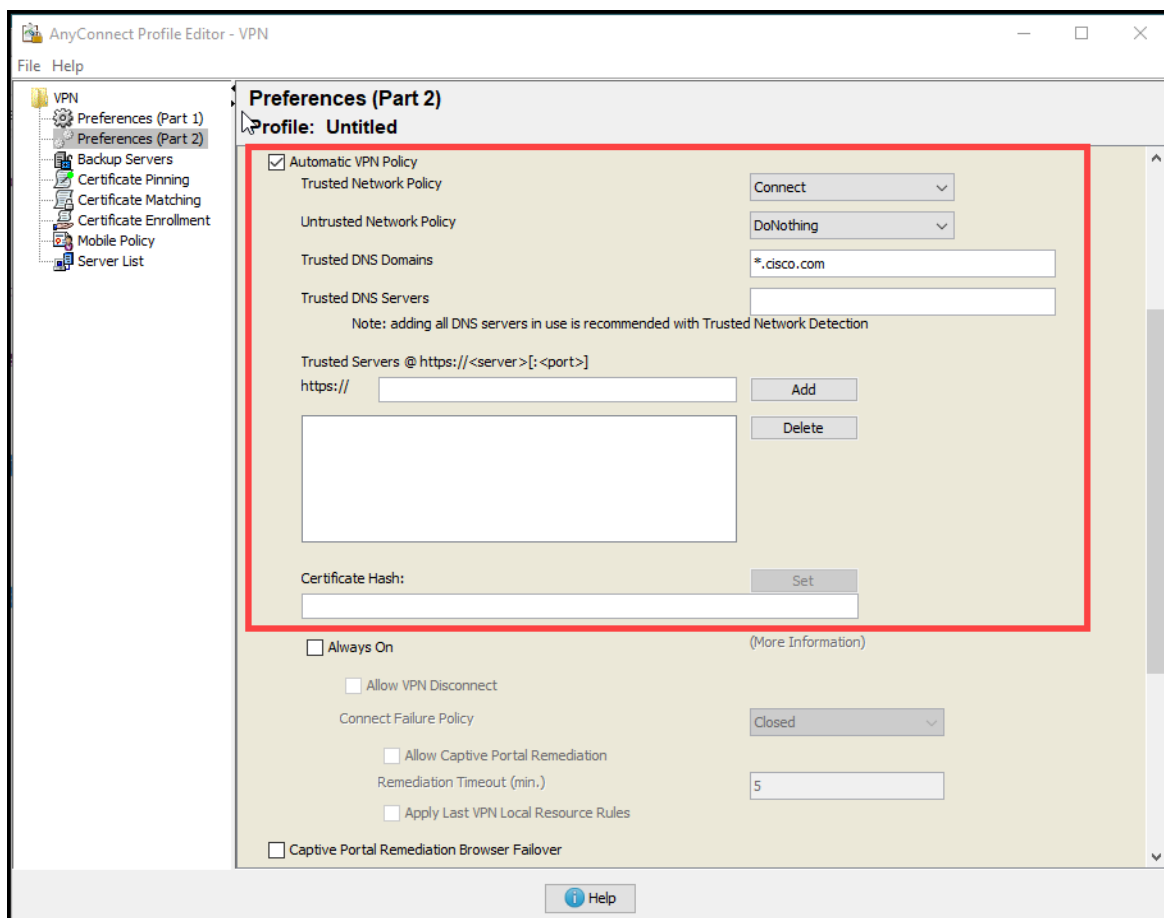
We recommend you use port 2030 rather than the default port, 2055. If port 2030 is already in use, you may use any non-reserved port. You will use this port in the [Configure the Flow Collector](#) section.

Do not use ports 2055, 514, or 8514.

4. Select **File > Save** to save your NVM Profile.
5. Close the NVM Profile Editor.
6. Open the VPN Profile Editor.
7. Click on **Preferences (Part 2)**.
8. Check the **Automatic VPN Policy** check box.
9. For **Trusted Network Policy**, select **Connect** from the drop down.
10. For **Untrusted Network Policy**, select **DoNothing** from the drop down.
11. Enter your **Trusted DNS Domains**, **Trusted Servers**, and **Certificate Hash**.



- The Trusted DNS Domain should be the same domain that the Flow Collector is running on. Wildcards (*) are supported for DNS suffixes.
- The Trusted Servers should be the IP addresses of the DNS servers on the network.



12. Select **File > Save** to save your preferences.
13. Close the AnyConnect Profile Editor.

Configure the Flow Collector to Ingest NVM Traffic

Using First Time Setup (Data Store Only)

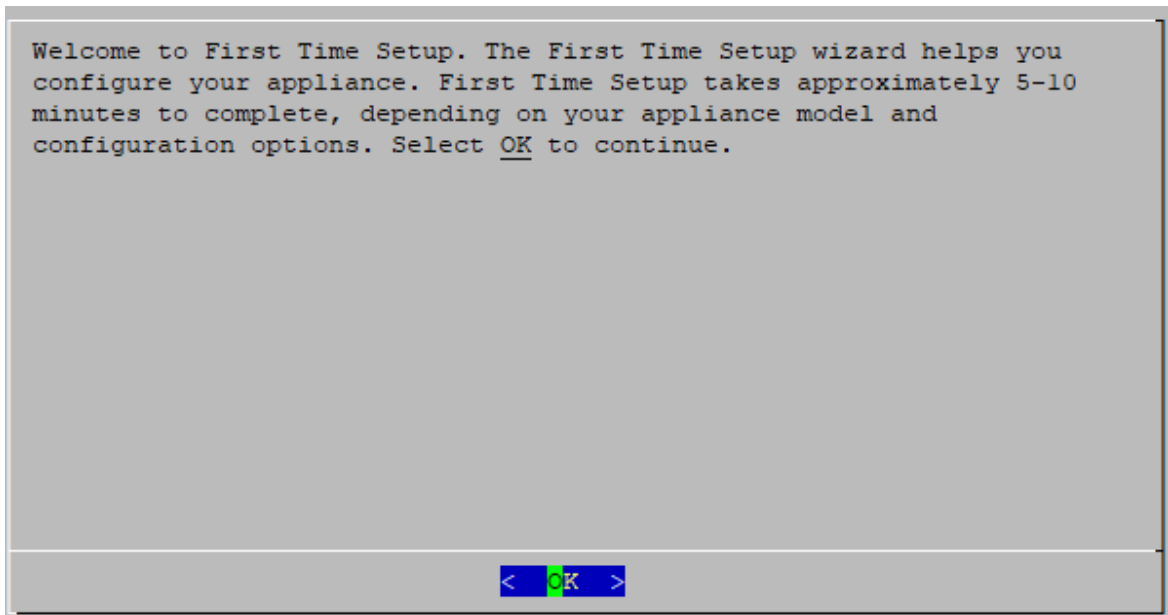
To enable ingest of NVM traffic on a new Flow Collector with Data Store, complete the following steps:

1. Follow the instructions in the applicable [appliance installation guide](#) for your Flow Collector. Then, use the [System Configuration Guide](#) for more detailed instructions on appliance configuration of multiple telemetry types.
2. Access the virtual machine console. Allow the virtual appliance to finish booting up.
3. Log in through the console.
 - **Login:** sysadmin
 - **Default Password:** lan1cope
 - You will change the default password when you configure the system.
4. Review the failed login attempts information. Select **OK** to continue.

```
Login information:
The user root has no failed login attempts.
Last login information:
root pts/0 10.0.7.10 Wed Nov 24 16:43 still logged in
root pts/0 10.0.7.10 Wed Nov 24 16:08 - 16:10 (00:02)
```

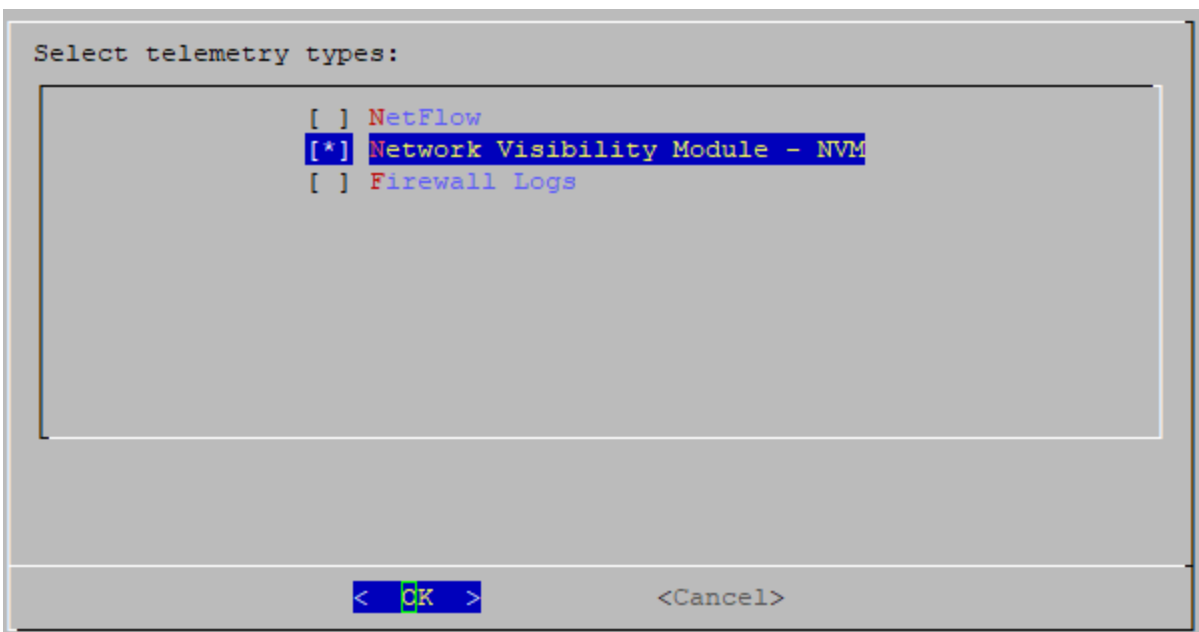
< OK >

5. Review the First Time Setup introduction. Select **OK** to continue.



6. Select **Network Visibility Module - NVM** from the telemetry types list. Select **Yes** to continue.

i All telemetry types are selected by default.

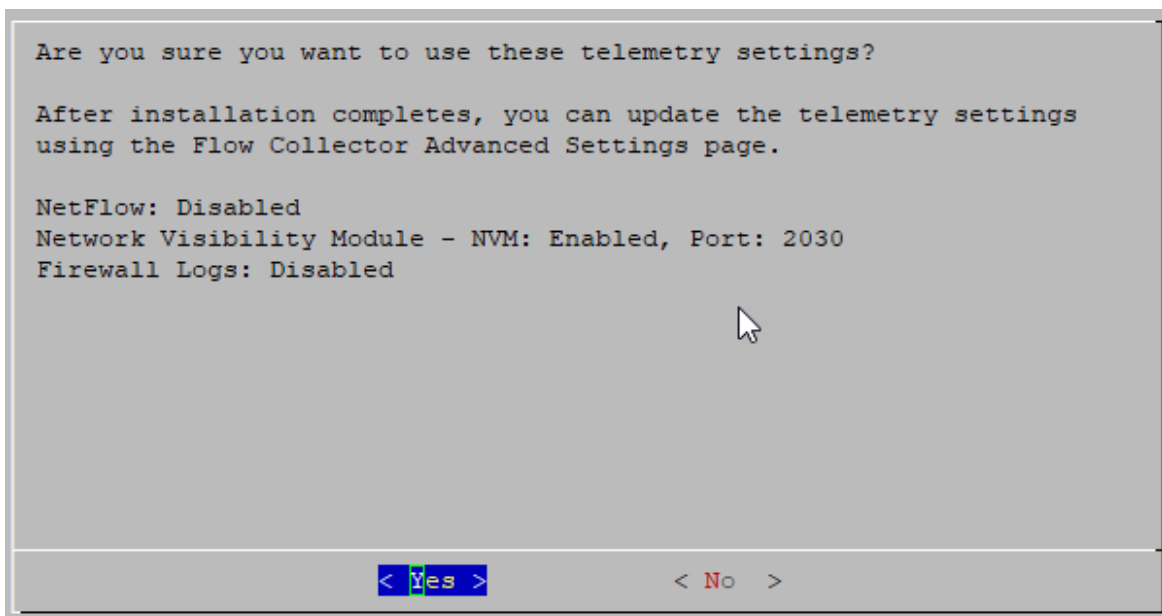


7. Enter the UDP port for Network Visibility Module - NVM. Select **OK**.

Set the value to the port specified in step 2 of the [Configure NVM profile on AnyConnect](#) section. Port 2030 is the default port. Do not use ports 2055, 514, or 8514.

! Make sure your telemetry ports are unique. If you configure duplicate telemetry ports, the ports will be reset to their internal defaults to avoid loss of flow data. For example, if NetFlow and NVM are exported to the same telemetry port, each device exporting NVM data will create an exporter on the Flow Collector and exhaust the exporter resources in the Flow Collector engine, resulting in loss of flow data.

8. Confirm your settings. Select **Yes** to continue.



9. Follow the on-screen prompts to finish the virtual environment and restart the appliance.

Using the Flow Collector Advanced Settings



Make sure to install the [latest Flow Collector NetFlow rollup patch](#) before you begin this procedure.

To enable ingest of NVM traffic on a Flow Collector that has already been configured, complete the following steps:

1. Log in to your Manager.
2. From the main menu, select **Configure > Global > Central Management**.
3. On the Inventory page, click the **⋮ (Ellipsis)** icon for your Flow Collector, then select **View Appliance Statistics**. The Flow Collector Admin interface opens.
4. Select **Support > Advanced Settings**.



If a field is not shown, click the **Add New Option** field. For more information about editing advanced settings on the Flow Collector, refer to the *Advanced Settings* Help topic.

5. In the **enable_nvm** field, set the value to **1**. This field defaults to **0**.
6. In the **nvm_netflow_port** field, set the value to the port specified in step 2 of the [Configure NVM profile on AnyConnect](#) section. For example, port **2030**.



Make sure your telemetry ports are unique. If you configure duplicate telemetry ports, the ports will be reset to their internal defaults to avoid loss of flow data. For example, if NetFlow and NVM are exported to the same telemetry port, each device exporting NVM data will create an exporter on the Flow Collector and exhaust the exporter resources in the Flow Collector engine, resulting in loss of flow data.

7. In the **nvm_to_flow_cache** field, set the value to **1** to capture network-based detections of NVM ingest flows. This field defaults to **0**.
8. In the **nvm_filter_untrusted_flows** field, set the value to **1**. When you activate this field, it filters out untrusted traffic from network-based detections and averts possible issues such as conflicting IP addresses. This field defaults to **0**.

Parameter	Value	Checkbox
max_periods_with_drops	4	<input type="checkbox"/>
max_valid_ping_len	90	<input type="checkbox"/>
min_asymmetric_flows	50	<input type="checkbox"/>
min_emails_per_period	30	<input type="checkbox"/>
min_threat_confidence_level	10	<input type="checkbox"/>
nat_fw_subnet_len	24	<input type="checkbox"/>
nvm_age_limit_days	0	<input type="checkbox"/>
nvm_endpoint_retention_minutes	1440	<input type="checkbox"/>
nvm_filter_untrusted_flows	1	<input type="checkbox"/>
nvm_interface_retention_minutes	1440	<input type="checkbox"/>
nvm_netflow_port	2030	<input type="checkbox"/>
nvm_to_flow_cache	1	<input type="checkbox"/>



If you have Data Store and set the **nvm_filter_untrusted_flows** field value to **1**, untrusted traffic is filtered out but remains stored in the NVM tables used to build the Endpoint Traffic (NVM) report. If you don't have Data Store, the untrusted traffic is not retained.

9. Click **Apply**.
10. When the confirmation message displays, click **OK**.

Configure the Flow Collector for Off-Network Cached Flows (Optional)

Use the following instructions to configure cache flow processing for collecting off-network NVM traffic.



Collecting off-network NVM traffic impacts system performance. Do not enable this configuration if you do not need to collect or analyze this data.

If you enable the configuration and your system performance is impacted, adjust the throttle rate (refer to the [AnyConnect Administrator Guide](#)) and/or decrease the `nvm_age_limit_days` (refer to the instructions in this section).

Before you start this procedure, make sure you finish the previous procedures. You will continue this configuration on the Flow Collector Advanced Settings page. If the Flow Collector is closed, log in to it directly, or:

1. Log in to your Manager.
2. From the main menu select **Configure > Global > Central Management**.
3. On the Inventory page, click the **⋮ (Ellipsis)** icon for your Flow Collector, then select **View Appliance Statistics**. The Flow Collector Admin interface opens.
4. Select **Support > Advanced Settings**.
5. Update the following fields:
 - **process_old_nvms_flows:** Enter 1 to enable cached flows to be processed by the Flow Collector.
 - **nvms_age_limit_days:** Enter the maximum age (number of days) to collect cached flows by the Flow Collector. For example, if you enter 7, cached flows up to 7 days old will be processed. If you enter 0 (zero), then **all** cached flows will be processed. For best performance, set a limited number of days.



If a field is not shown, click the **Add New Option** field. For more information about editing advanced settings on the Flow Collector, refer to the *Advanced Settings* Help topic.

6. Click **Apply**.
7. When the confirmation message is shown, click **OK**.

Verification

Depending on your Secure Network Analytics deployment, you will see NVM data in a Flow Search or Report Builder.

Flow Search (Non Data Store Only)


1. Log in to your Manager.
2. From the main menu, select **Investigate > Flow Search**.
3. Run a Flow Search.
4. On the Flow Search Results, filter the table by the **Subject Process Name** to verify you are getting NVM flows.

Opening Report Builder (Data Store Only)

Report Builder provides three NVM-related reports for Secure Network Analytics with a Data Store:

- **NVM Database Ingest Trend**, provides a notification when your data has successfully reached the database ingest
- **NVM Collection Trend**, shows flow rate arrival at the Flow Collector from NVM
- **Endpoint Traffic (NVM)**, displays the most recent 300 records based on the end time



For more information about these reports, click the  **(Help)** icon to access the Help for Report Builder.

For example, to view the Endpoint Traffic (NVM) report:

1. Log in to your Manager.
2. From the main menu, select **Report > Report Builder**.
3. Click **Create New Report** and select **Endpoint Traffic (NVM)**.
4. Click **Run**.
5. Verify the report is showing NVM traffic.

Contacting Support

If you need technical support, please do one of the following:

- Contact your local Cisco Partner
- Contact Cisco Support
- To open a case by web: <http://www.cisco.com/c/en/us/support/index.html>
- To open a case by email: tac@cisco.com
- For phone support: 1-800-553-2447 (U.S.)
- For worldwide support numbers:
<https://www.cisco.com/c/en/us/support/web/tsd-cisco-worldwide-contacts.html>

Change History

Document Version	Published Date	Description
1_0	July 24, 2024	Initial version.

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