

# Functional Specification for Profiler IPv6 support - Phase 3

## Introduction

It's known that IPv4 address are in limited number and the world is moving towards adopting IPv6. This feature is being done for a customer who currently has dual stack and it is expected to move fully to IPv6 in next 4-5 years.

This is a continuation of [Functional Specification for Profiler IPv6 support](#). In phase 3 we extend IPv6 support for

1. DHCP Collector

## References

Epic : [!\[\]\(e3f8612927870f2e0f9f5989e6dd3064\_img.jpg\) PROFILER-3203](#) - Getting issue details... STATUS

## Functionality

### Overview

This RLI explains admin workflow, process workflow and classification workflow.

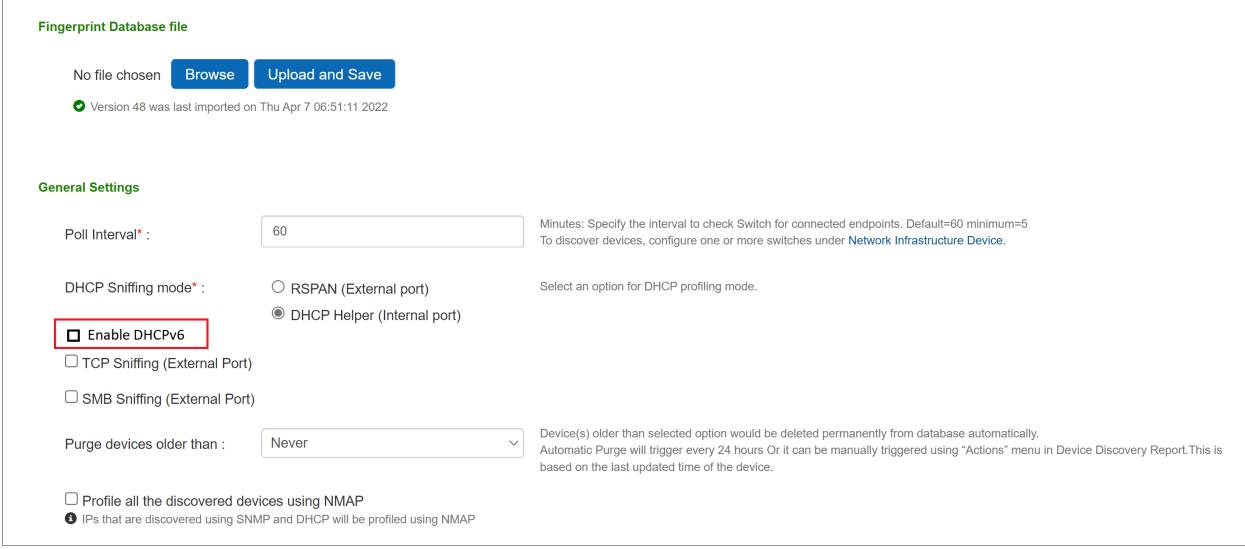
It also covers the DDR report display.

#### Admin Workflow

##### **To enable DHCPv6 functionality from Profiler basic configuration page.**

Enabling DHCPv6Collector by checking checkbox in UI. "Profiler Configuration > Settings > Basic Configuration >Enable DHCPv6 packet capturing".

Figure 1: (Checkbox in basic configuration page to enable the collector)



The screenshot shows the 'General Settings' section of the Profiler Basic Configuration page. At the top, there is a 'Fingerprint Database file' section with a 'Browse' button and an 'Upload and Save' button. Below this, a message states 'Version 48 was last imported on Thu Apr 7 06:51:11 2022'. The 'General Settings' section contains the following fields:

- 'Poll Interval\*' input field set to '60' with a note: 'Minutes: Specify the interval to check Switch for connected endpoints. Default=60 minimum=5. To discover devices, configure one or more switches under Network Infrastructure Device.'
- 'DHCP Sniffing mode\*' radio buttons:
  - RSPAN (External port)
  - DHCP Helper (Internal port)with a note: 'Select an option for DHCP profiling mode.'
- A red box highlights the ' Enable DHCPv6' checkbox.
- Other sniffing options:
  - TCP Sniffing (External Port)
  - SMB Sniffing (External Port)
- 'Purge devices older than:' dropdown menu set to 'Never' with a note: 'Device(s) older than selected option would be deleted permanently from database automatically. Automatic Purge will trigger every 24 hours Or it can be manually triggered using "Actions" menu in Device Discovery Report. This is based on the last updated time of the device.'
- Checkboxes at the bottom:
  - Profile all the discovered devices using NMAP
  - IPs that are discovered using SNMP and DHCP will be profiled using NMAP

Figure 2: (Checkbox to enable DHCPv6 sniffing over external port)

**Fingerprint Database file**

No file chosen [Browse](#) [Upload and Save](#)

Version 48 was last imported on Thu Apr 7 06:51:11 2022

**General Settings**

Poll Interval* :	<input type="text" value="60"/>	Minutes: Specify the interval to check Switch for connected endpoints. Default=60 minimum=5 To discover devices, configure one or more switches under <a href="#">Network Infrastructure Device</a> .
DHCP Sniffing mode* :	<input type="radio"/> RSPAN (External port)      Select an option for DHCP profiling mode. <input checked="" type="radio"/> DHCP Helper (Internal port)	
<input checked="" type="checkbox"/> Enable DHCPv6		
DHCPv6 Sniffing mode* :	<input type="radio"/> RSPAN (External port) <input checked="" type="radio"/> DHCP v6 Helper (Internal port)	
<input type="checkbox"/> TCP Sniffing (External Port)		
<input type="checkbox"/> SMB Sniffing (External Port)		
Purge devices older than :	<input type="text" value="Never"/> Device(s) older than selected option would be deleted permanently from database automatically. Automatic Purge will trigger every 24 hours Or it can be manually triggered using "Actions" menu in Device Discovery Report. This is based on the last updated time of the device.	
<input type="checkbox"/> Profile all the discovered devices using NMAP <small>IPs that are discovered using SNMP and DHCP will be profiled using NMAP</small>		

## User Workflow

None.

## Feature Details

This feature provides :

1. Packet sniffing of DHCPv6 packets over IPv6
2. An additional DHCPv6 collector is launched by the profiler, to listen on port 546 to capture SOLICIT, REQUEST and INFORM packets
3. By default, this collect would listen on internal port (int0), provided IPv6 is enabled and configured on the device
4. Additional option to enable sniffing on external port can be enabled based on user requirement

## Goals

1. To discover IPv6 link-local and IPv6 global address of an endpoint
2. To classify the newly discovered devices using classification - ie. detect OS, Manufacturer and Category

## Exceptions

1. DHCPv6 is a passive collector, similar to DHCPv4. However, enabling of the feature will be controlled by admin.

## Limitations

1. Classification may not be highly accurate in the initial phase due to limited fingerprints

None

## Non Goals

IPv6 should be enabled on internal port.

Functional competitive data

## User Interface

### Display of IPv6 information on DDR:

1. Existing column of "IP Address" is changed to "IPv4" and new column name "IPv6" has been introduced.  
Figure 3:


2. DHCPv6 showing IPv6 address of the device.

Figure 4:

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3. IPv6 history is maintained under history tab.

Figure 5:

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## Manageability

SNMP

None

## Software Feature Licensing

No change, Same license as Profiler.

## Software Packaging

This RLI is packaged as part of PPS Profiler.

## Installation/Upgrade considerations

None

## Clustering considerations

This feature works with Active Passive Cluster currently supported by Profiler. No A/A cluster support since Profiler doesn't support it.

No additional configurations need to make this feature work in a cluster.

## IVS considerations

N/A

## XML import/export considerations

The local profiler configuration shall be XML import/exportable.

## Delegation considerations

N/A

## Supportability (Serviceability, Diagnose-ability and Fault Handling)

Serviceability and Diagnose-ability

Fault Handling

None

## Logging considerations

No new logging introduced.

## Scaling and Performance

### Target Scaling

This RLI should not degrade the present scalability of the overall system

### Target Performance

New process for DHCPv6 introduced. Slight impact on classification based on number of devices detected.

## Client performance requirements and targets (platform specific where applicable)

## Compatibility Issues

N/A

## Security Considerations

N/A