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 : 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)

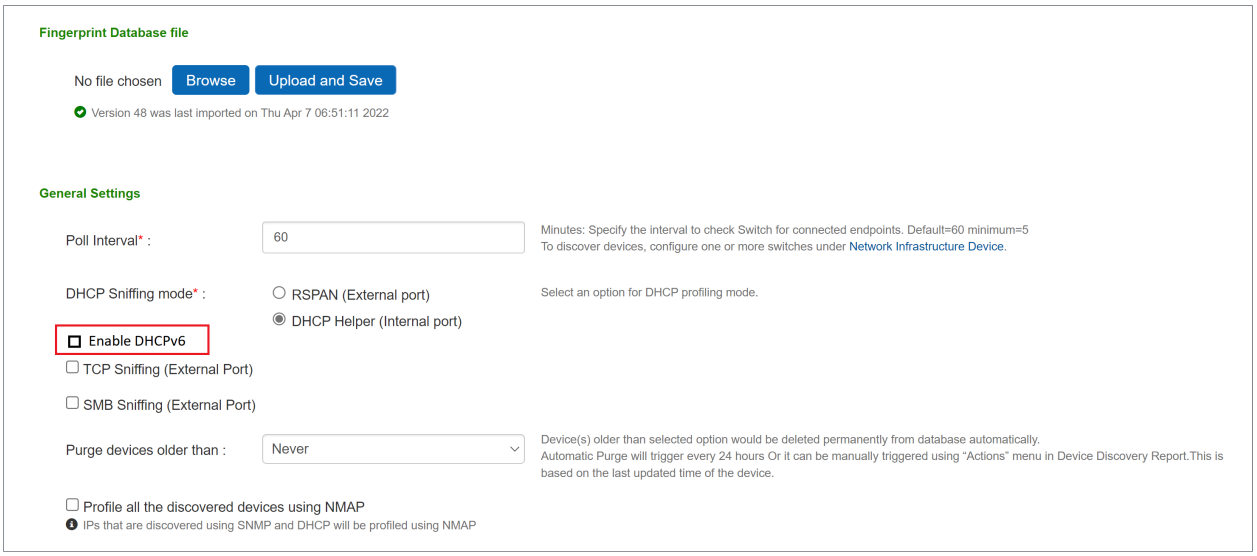
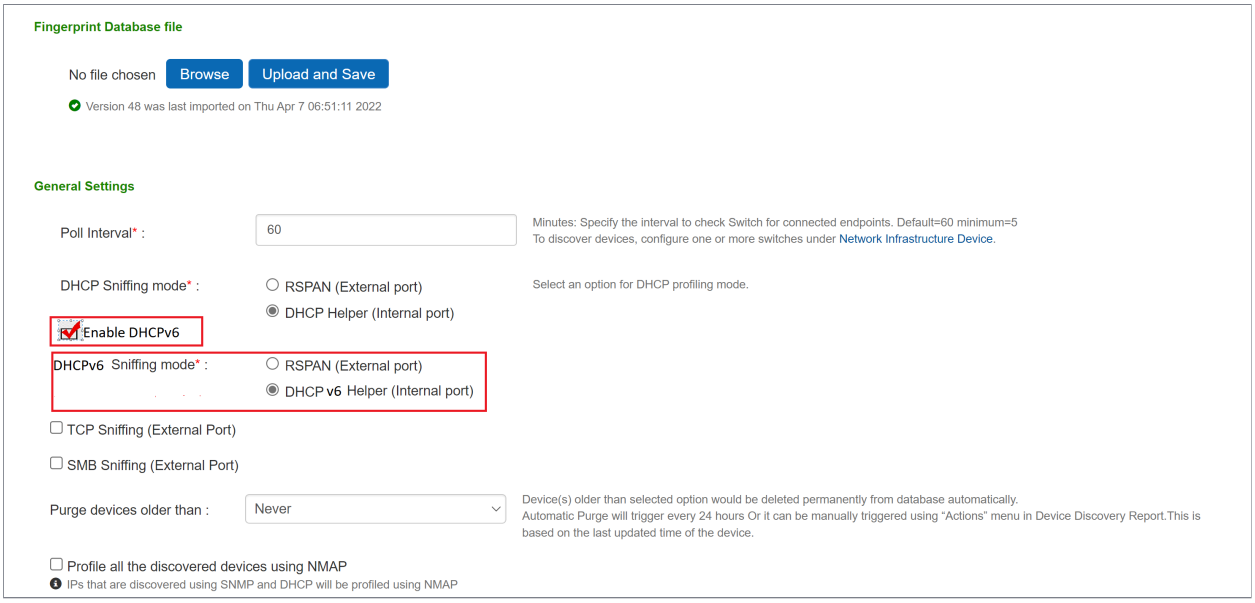


Figure 2: (Checkbox to enable DHCPv6 sniffing over external port)



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:

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