Hewlett Packard Enterprise

HPE aruba networking

AOS-CX 10.13 Update:
HTTPS measurement with IPSLA

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Nov,2023

IPSLA Overview

Before 10.12.1000

- IP SLA can measure network performance using UDP echo, UDP jitter TCP connect, HTTP, and ICMP echo
- IP SLA Nodes can be distributed within a LAN as well as across WAN.

From 10.12.1000

- IP SLA now has the ability to utilize **HTTPS**.
- Transparent IPSLA sessions that can be created by Central and will not be persistent over reboots.

IPSLA Overview

Why is IPSLA over Https Important ?

- In the context of a firewall ACL that permits only HTTPS and not HTTP, this restriction is often implemented to enforce a higher level of security.

- If a firewall or access control list (ACL) permits only HTTPS traffic, IPSLA must support HTTPS to comply with these security measures.

- If IPSLA measurements were conducted over HTTP in such an environment, it would violate the security policy, and the firewall might block or reject the communication.

Transparent IPSLA sessions –Non-persistent over reboots

- Driven by the requirements of high-availability networks,
- Minimize administrative overhead
- Maintaining continuous and consistent network monitoring in dynamic environments.

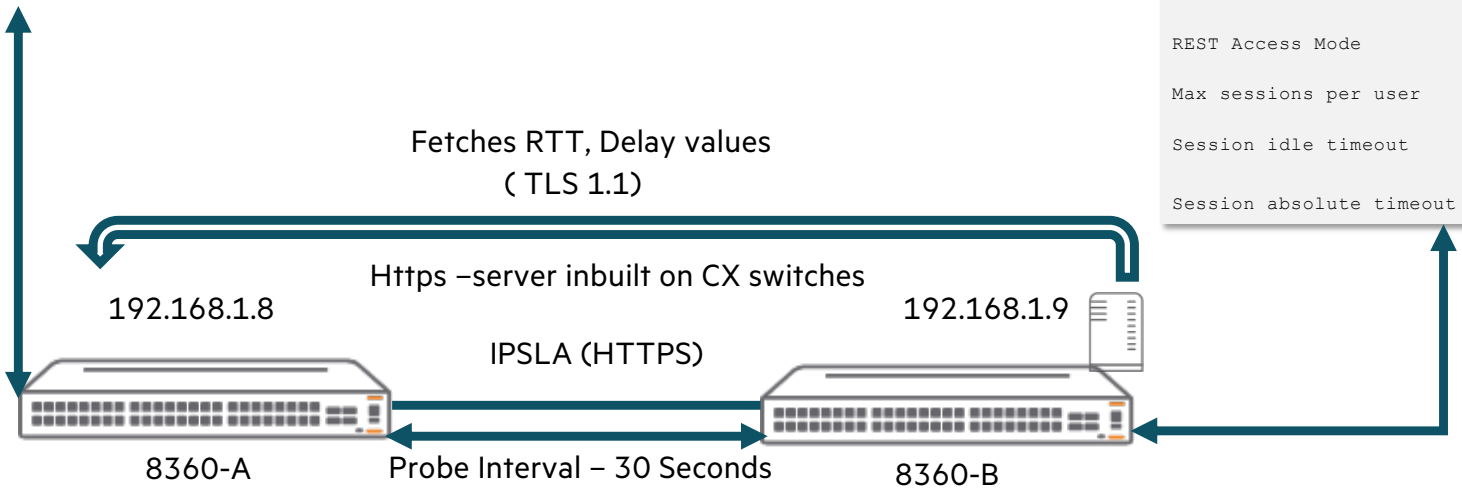
This approach enhances the reliability, responsiveness, and scalability of the network infrastructure.

Configuration - CLI

Tested on two Aggregate 8360's With IP 192.168.1.8 and 192.168.1.9

```
Bldg3-Agg-8360-A(config)# ip-sla test1
Bldg3-Agg-8360-A(config-ip-sla-test1)# https get https://192.168.1.9 probe-interval 30
Bldg3-Agg-8360-A(config-ip-sla-test1)# start-test
```

```
Bldg3-Agg-8360-B# show https-server

HTTPS Server Configuration
---------------------------
 VRF                      : default, mgmt

 REST Access Mode         : read-write

 Max sessions per user    : 6

 Session idle timeout     : 20

 Session absolute timeout : 480
```



SafeLogic OpenSSL library (version 1.0.2zd 15 Mar 2022) is used for IPSLA support over HTTPS
We do not perform server certificate validation.

Configuration – CLI (Persistent)

```
Bldg3-Agg-8360-A(config-ip-sla-test1)# show ip-sla test1 results
```

```
SLA Name                : test1
Status                  : running
SLA Type                : https
VRF                     : default
Source IP               :
Source Interface        :
Domain Name Server      :
Probe Interval(seconds) : 30
HTTPS Request Type      : get
HTTPS URL               : https://192.168.1.9
Cache                   : Enabled
HTTPS Proxy URL         :
HTTP Version Number     : 1.0

IP-SLA session status
IP-SLA Name                          : test1
IP-SLA Type                          : https
Destination Host Name/IP Address     : NA
Destination Port                     : NA
Source IP Address/IFName             :
Source Port                          :
Status                               : running
```

```
IP-SLA Session Cumulative Counters
Total Probes Transmitted             : 8504
Probes Timed-out                     : 0
Bind Error                           : 0
Destination Address Unreachable      : 0
DNS Resolution Failures              : 0
Reception Error                      : 0
Transmission Error                   : 0

IP-SLA Latest Probe Results
Last Probe Time                      : 2023 Nov 16 11:28:09
Packets Sent                         : 1
Packets Received                     : 1
Packet Loss in Test                  :
0.0000%


Minimum RTT(ms)                      : 1
Maximum RTT(ms)                      : 1
Average RTT(ms)                      : 1
DNS RTT(ms)                          :
TCP RTT(ms)                          : 0
TLS RTT(ms)                          : 0
```

Configuration – Rest API (Non-persistent)


```
{
  "name": "https-sla2",
  "enable": true,
  "persistence": "volatile",
  "https_sla": {
    "type": "get",
    "url": "https://192.168.1.8",
    "version_number": "1.1"
  },
  "type": "https",
  "vrf": "/rest/v10.13/system/vrfs/default"
}
```


```
IP-SLA session status
IP-SLA Name                          : https-sla2 (non-persistent)
IP-SLA Type                          : https
Destination Host Name/IP Address     : NA
Destination Port                     : NA
Source IP Address/IFName             :
Source Port                          :
Status                               : running


IP-SLA Session Cumulative Counters
Total Probes Transmitted             : 11
Probes Timed-out                     : 0
Bind Error                           : 0
Destination Address Unreachable      : 0
DNS Resolution Failures              : 0
Reception Error                      : 0
Transmission Error                   : 0


IP-SLA Latest Probe Results
Last Probe Time                      : 2023 Nov 20 12:36:39
Packets Sent                         : 1
Packets Received                     : 1
Packet Loss in Test                  : 0.0000%


Minimum RTT(ms)                      :  1
Maximum RTT(ms)                      :  1
Average RTT(ms)                      :  1
DNS RTT(ms)                          :
TCP RTT(ms)                          :  0
```

Configuration – Rest API

Responses

Curl

```
curl -X POST "https://10.6.10.5/rest/v10.13/system/ipsla_sources" -H  "accept: */*" -H  "Content-Type: application/json" -H  "x-csrf-token: nnzxyBIsvrAz9e210UKDJw==" -d "{\"name\":\"https-
sla1\",\"enable\":true,\"persistence\":\"volatile\",\"https_sla\":{\"type\":\"get\",\"url\":\"https://10.0.0.2\",\"version_number\":\"1.1\"},\"type\":\"https\",\"vrf\":\"/rest/v10.13/system/vrfs/default\"
```

Request URL

```
https://10.6.10.5/rest/v10.13/system/ipsla_sources
```

Server response

Code	Details
201	Response headers

```
cache-control: no-cacheno-store
connection: keep-alive
content-length: 0
content-security-policy: script-src 'self' 'unsafe-inline'; object-src 'none'; font-src *; media-src 'none'; form-action 'self';
date: Mon20 Nov 2023 20:13:10 GMT
location: /rest/v10.13/system
server: nginx
strict-transport-security: max-age=31536000; includeSubdomains;
x-content-type-options: nosniff
x-frame-options: SAMEORIGIN
x-xss-protection: 1; mode=block
```

Responses

Code	Description	Links
201	Created	*No links*

Demo

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Thank you

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