How to: Configure FastL4 ePVA settings for deployment through BIG-IP Next Central Manager

Overview

The embedded Packet Velocity Acceleration (ePVA) chip is a hardware acceleration Field Programmable Gate Array (FPGA) that delivers high-performance Layer 4 (L4) IPv4 throughput. The use of an FPGA allows the ePVA firmware to be updated, as required, for future upgrades and hot fixes.

The default (HTTP) template does not support FastL4 ePVA settings; creating a custom template is required.

Prerequisites

- Installation of BIG-IP Next Central Manager is complete.
- Installation of BIG-IP Next on a VELOS platform - F5OS-C VELOS release v1.61 - is complete.

Procedure

Create a custom template and deploy an application service to support FastL4 ePVA settings.

1. Log in to BIG-IP Next Central Manager.
2. Click the **Workspaces** menu (upper-left corner).
3. In the left pane, click **Applications** > **Application Templates**.
4. Select the check box next to the name of an existing template. **Example**: `http`
5. Click **Clone**.
6. For **Name**, type a new name. **Example**: `clone_http_evpa`
7. In the **Template Body**, make Changes to two places - **(1)** and **(2)**.
    1. In the **Template Body**, find the **Location to add**.

2. Copy the **Code to add** and paste into **Location to add/<—Add here—>**.

(1)

Location to add:

```
 FastL4_idleTimeout:
   title: Idle Timeout
   description: FastL4 Idle Timeout
   type: integer
   minimum: 0
   maximum: 3600
   default: 600
   dependencies: { enable_FastL4: true }
   uiMetaCM:
     order: 31
     column: 3
     columnName: Protocols & Profiles
 <---Add here--->
```

Code to add:

```
FastL4_pvaAcceleration:
  title: PVA acceleration
  description: Specifies the preferred acceleration mode for the Packet Velocity ASIC (PVA), if
  type: string
  enum:
      [
        'full',
        'assisted',
        'none',
        'dedicated',
      ]
   default: full
   dependencies: { enable_FastL4: true }
   uiMetaCM:
     order: 37
     column: 3
     columnName: Protocols & Profiles
FastL4_pvaDynamicServerPackets:
   title: PVA Dynamic Server Packets
   description: Indicates the number of server packets before dynamic ePVA hardware re-offloadin
   type: integer
   minimum: 0
   maximum: 10
   default: 0
   dependencies: { enable_FastL4: true }
   uiMetaCM:
     order: 38
     column: 3
     columnName: Protocols & Profiles
FastL4_pvaDynamicClientPackets:
   title: PVA Dynamic Client Packets
   description: Indicates the number of client packets before dynamic ePVA hardware re-offloadin
```

```
    type: integer
    minimum: 0
    maximum: 10
    default: 1
    dependencies: { enable_FastL4: true }
    uiMetaCM:
      order: 39
      column: 3
      columnName: Protocols & Profiles
```

(2) Location to add:

```
{{/enable_TCP_Profile}}
{{#enable_FastL4}}
    "l4Profile_{{virtualName}}": {
        "class": "L4_Profile",
        "idleTimeout": {{FastL4_idleTimeout}},
        "looseClose": {{FastL4_looseClose}},
        "looseInitialization": {{FastL4_looseInitialization}},
        "resetOnTimeout": {{FastL4_resetOnTimeout}},
        "tcpCloseTimeout": {{FastL4_tcpCloseTimeout}},
        "tcpHandshakeTimeout": {{FastL4_tcpHandshakeTimeout}},
<---Add here--->
```

Code to add:

```
"pvaAccelerationMode": {{FastL4_pvaAcceleration}},
"pvaDynamicCientPackets": {{FastL4_pvaDynamicServerPackets}},
"pvaDynamicServerPackets": {{FastL4_pvaDynamiClientPackets}}
```

8. Click **Save**.
   In the right pane, the new template is created and displays.

9. In the left pane, navigate to: **Applications** > **My Application Services**.
10. Click **Add Application**.
11. Type an **Application Service Name**. Example: `app_epva`
12. For **What kind of Application Service are you creating?**, select **From Template**, and then click **Select Template**.
13. From the **Application Template** list, select a template. Example: `clone_http_evpa`
14. Click **Start Creating**.
    No Virtual Servers Configured displays.
15. Click **Start Creating**.
16. Click **Pools**, and then type a **Pool Name**. Example: `pool1`
17. Click **Virtual Servers**, and then type a **Virtual Server Name**. Example: `vs1`.
18. From the **Pool** list, select a **Pool**. Example: `pool1`
19. Retain the default for **Virtual Port**: `80`.
20. For **Protocols & Profiles**, click the icon next to **SNAT MIRRORING**.
21. Select **Enable FastL4**.
22. From the **PVA acceleration** list, select **Assisted**.
23. From the **PVA Dynamic Server Packets** list, select a number. Example: `3`.
24. From the **PVA Dyanmic Client Packets** list, select a number. Click **Save**. Example: `4`.
    No Instance/Locations displays.
25. Click **Start Adding**.
26. Click the **Select All** check box. Retain the default: **big-ip-next**.
27. Click **+ Add to List**.
28. For **Virtual Address**, type a valid IP address.

29. From the **Members** list, select **+ Pool Members**.
30. Click **+ Add Row**.
31. Type a **Name** and **IP address**, and click **Save**.
32. Click **Actions** > **Validate**. Validated displays with a check icon.
33. Click **View Results**.
34. Verify:

    Example

    ```
    "l4Profile_vs1" {
      "class": "L4_Profile",
    ...
    "pvaAccelerationMode": "assisted",
    "pvaDynamicClientPackets": 3,
    "pvaDynamicServerPackets": 4,
    ```

35. Click **Exit**.
36. Click **Deploy Application Service**, and then click **Yes, Deploy**.
37. To confirm a successful deployment, click the name of an application service (**Example**: `app_epva`), and then click **Action** > **Deploy/Underploy**.

    Verify:
    The **Instance/Location** has a check icon before it; the **Virtual Server**, **Virtual Address**, and **Pool** display. **Example**: `vs1`, `<IP address>`, and `pool1`.