

**Hewlett Packard
Enterprise**

HPE **aruba**
networking

AOS-CX 10.13 Update: Application-Based Policy Phase 2

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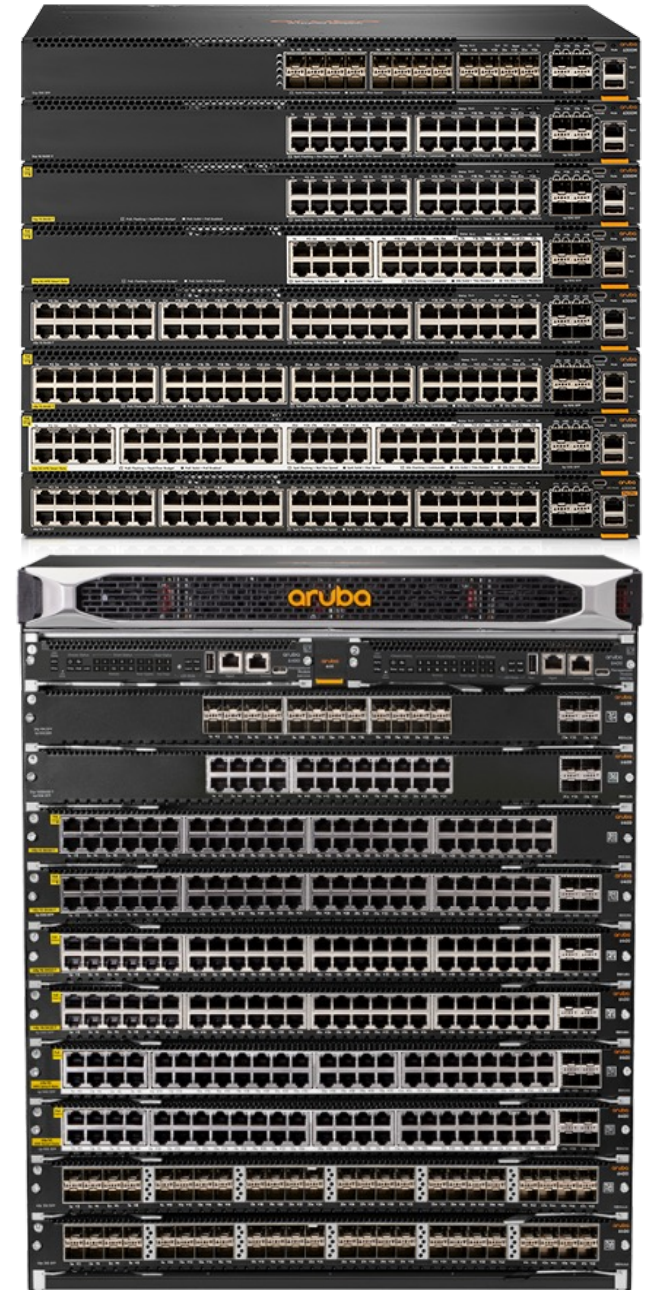


Overview

Application-Based Policy Phase 2

AOS-CX 10.13 enhances the Application-Based Policy feature introduced in the 10.12 release with three additional actions that can be applied to classified application flows:

- Remark to a specific DSCP value
- Change local priority value
- Mirror packets to a specified mirror session



ABP Phase 2

More details

For more details on AOS-CX Application-Based Policy, review the **AOS-CX 10.12 Application-Based Policy** update:

<https://www.youtube.com/watch?v=Hreytt786ls&list=PLsYGHuNuBZcZGFAY-ojv4Ea7JbXKy31Z0>



Details

Application-Based Policy

Platform support

Feature	4100i	6000	6100	6200	6300	6400	8100	8320	8325	8360	8400	9300	10000	OVA
Application-Based Policy	No	No	No	No	Yes	Yes (v2 only)	No	No	No	No	No	No	No	No

- **6300:** All supported 6300F and 6300M models (standalone and VSF stacks)
- **6400:** v2 line cards only (ROX__C part numbers)



ABP Phase 2

DSCP remarking

- The first new ABP policy action is to remark flow packets with the specified DSCP codepoint or predefined class.
- Administrators may specify either one of 12 predefined Assured Forwarding (AF) class values, 8 Class Selector values, Expedited Forwarding, or a specific DSCP codepoint value from 0 to 63.

```
switch(config-pa-abp)# class abp-ip games-v4 action dscp ?
<0-63>  A DSCP codepoint
AF11    DSCP 10 (Assured Forwarding class 1, low drop probability)
AF12    DSCP 12 (Assured Forwarding class 1, medium drop probability)
AF13    DSCP 14 (Assured Forwarding class 1, high drop probability)
AF21    DSCP 18 (Assured Forwarding class 2, low drop probability)
AF22    DSCP 20 (Assured Forwarding class 2, medium drop probability)
AF23    DSCP 22 (Assured Forwarding class 2, high drop probability)
AF31    DSCP 26 (Assured Forwarding class 3, low drop probability)
AF32    DSCP 28 (Assured Forwarding class 3, medium drop probability)
AF33    DSCP 30 (Assured Forwarding class 3, high drop probability)
AF41    DSCP 34 (Assured Forwarding class 4, low drop probability)
AF42    DSCP 36 (Assured Forwarding class 4, medium drop probability)
AF43    DSCP 38 (Assured Forwarding class 4, high drop probability)
CS0     DSCP 0 (Class Selector 0: Default)
CS1     DSCP 8 (Class Selector 1: Scavenger)
CS2     DSCP 16 (Class Selector 2: OAM)
CS3     DSCP 24 (Class Selector 3: Signaling)
CS4     DSCP 32 (Class Selector 4: Realtime)
CS5     DSCP 40 (Class Selector 5: Broadcast video)
CS6     DSCP 48 (Class Selector 6: Network control)
CS7     DSCP 56 (Class Selector 7)
EF      DSCP 46 (Expedited Forwarding)
```

ABP Phase 2

Local priority remarking

- The second new policy action allows remarking flow packets with one of the eight local priority values from 0 to 7.
- Each local priority value is mapped to a specific queue as determined by the applied QoS queue profile; the 6400 factory default queue profile is shown as an example.

```
switch(config-pa-abp)# class abp-ip games-v4 action local-priority ?  
<0-7>    A valid local-priority value
```

```
switch# show qos queue-profile factory-default  
queue_num local_priorities name  
-----  
0          0,1                Bulk Best Effort  
1          2,3  
2          4,5  
3          6,7
```



ABP Phase 2

Mirroring

- The final new policy action is to mirror matched flow packets to a mirror session.
- This action utilizes mirror session 4 and can be used with any supported mirroring destination type (CPU, interface, or tunnel).
 - Any other actions that are applied to packets by the same ABP policy, such as DSCP or local priority remarking, will not be reflected in packets mirrored using this policy action, as they are applied as the packet is forwarded from the ingress interface to the egress interface.

```
switch(config-pa-abp)# class abp-ip games-v4 action mirror ?  
4 A valid mirroring session
```



Configuration

Configuration

Local user role: ABP policy actions

- Create or modify an ABP port access policy.
- As part of the numbered sequence of policy attributes matching defined ABP classes, assign the desired actions to be applied to matched classes:
 - **drop**
 - **dscp**
 - **local-priority**
 - **mirror**
 - If no action is specified, matched class will be permitted.
- Once the policy has been created, validate it using **show port-access abp**

```
switch(config)# port-access abp abp-lur
switch(config-pa-abp)# 10 class abp-ip comms-v4 action dscp AF11 action mirror 4
switch(config-pa-abp)# 20 class abp-ipv6 comms-v6 action dscp AF11 action mirror 4
switch(config-pa-abp)# 30 class abp-ip streaming-v4 action mirror 4
switch(config-pa-abp)# 40 class abp-ipv6 streaming-v6 action mirror 4
switch(config-pa-abp)# 50 class abp-ip catchall-v4
switch(config-pa-abp)# 60 class abp-ipv6 catchall-v6
switch(config-pa-abp)# exit

switch(config)# show port-access abp

Port Access Application Policy User Configured Policy Details:
=====

App Policy Name      : abp-lur
App Policy Type      : local
App Policy Status    : applied

SEQUENCE  CLASS                                TYPE      ACTION
-----
10        comms-v4                                abp-ipv4  dscp AF11 mirror 4
20        comms-v6                                abp-ipv6  dscp AF11 mirror 4
30        streaming-v4                            abp-ipv4  mirror 4
40        streaming-v6                            abp-ipv6  mirror 4
50        catchall-v4                            abp-ipv4  permit
60        catchall-v6                            abp-ipv6  permit
```



Configuration

Downloadable user role: ABP policy actions

- Create or modify an enforcement profile in ClearPass.
- In the downloadable user role attribute, define the port-access ABP policy using the desired actions to be applied to matched application classes, as shown in the local user role configuration example.

Type	Name	Value
1.	Radius:Aruba Aruba-CPPM-Role (23)	class abp-ip comms-v4-dur 10 match any any any app-category unified-communications app any class abp-ipv6 comms-v6-dur 10 match any any any app-category unified-communications app any class abp-ip streaming-v4-dur 10 match any any any app-category streaming app any 20 match any any any app-category any app twitch class abp-ipv6 streaming-v6-dur 10 match any any any app-category streaming app any 20 match any any any app-category any app twitch class abp-ip catchall-v4-dur 10 match any any any app-category any app any count 20 match any any any app-category any app unknown class abp-ipv6 catchall-v6-dur 10 match any any any app-category any app any count 20 match any any any app-category any app unknown port-access abp client-abp-dur 10 class abp-ip comms-v4-dur action dscp AF11 action mirror 4 20 class abp-ipv6 comms-v6-dur action dscp AF11 action mirror 4 30 class abp-ip streaming-v4-dur action mirror 4 40 class abp-ipv6 streaming-v6-dur action mirror 4 50 class abp-ip catchall-v4-dur 60 class abp-ipv6 catchall-v6-dur port-access role abp-dur vlan access 8 app-recognition enable associate abp client-abp-dur



Demo

Additional Resources

Additional Resources

- User Guides
 - AOS-CX 10.13 Security Guide (6200, 6300, 6400 Switch Series)
 - Chapter 16: **Application Recognition and Control**
 - AOS-CX 10.13 Monitoring Guide (6300, 6400 Switch Series)
 - Chapter 9: **Mirroring**
 - AOS-CX 10.13 QoS Guide (6200, 6300, 6400 Switch Series)



Thank you!

