Hewlett Packard Enterprise

HPE aruba networking

AOS-CX 10.13 Update: Auto enable RPVST during VLAN creation

Priyadarshini Senthil Kumar, Technical Marketing Engineer

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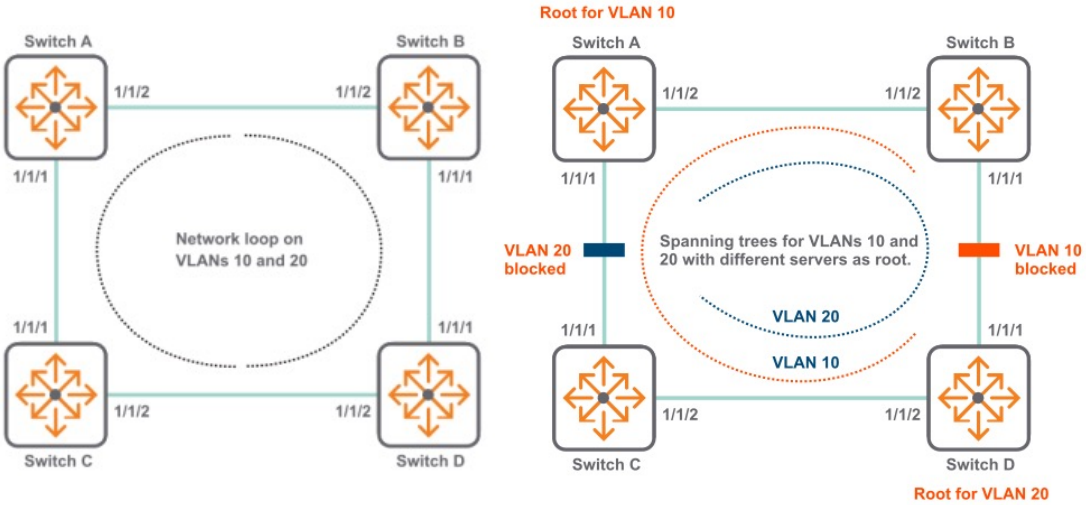
Overview

Overview

- Spanning tree protocols are used to prevent loops from occurring when multiple paths exist between the switches. They are also used to provide redundancy, enabling data to use an alternative path when one link to a device fails.

- Rapid Per VLAN Spanning Tree (RPVST) is an updated implementation of STP that allows to create one **spanning tree topology for each VLAN** and ensures that only one active, loop-free path exists between any two nodes on a given VLAN.



Sample topology with and without RPVST

Overview – Feature enhancements

Prior to 10.12.1000

User must enable RPVST instance for the specified Vlans configured in the switch

```
Vlan 1,2,100

# spanning-tree

# spanning-tree vlan 1,2,100

# spanning-tree mode rpvst
```

In 10.12.1000 & above

RPVST auto VLAN feature allows for the enable/disable RPVST instance on both pre-existing and newly created VLANs

```
# spanning-tree

# spanning-tree mode rpvst auto-vlan-enable
```

Use Cases

Use Cases

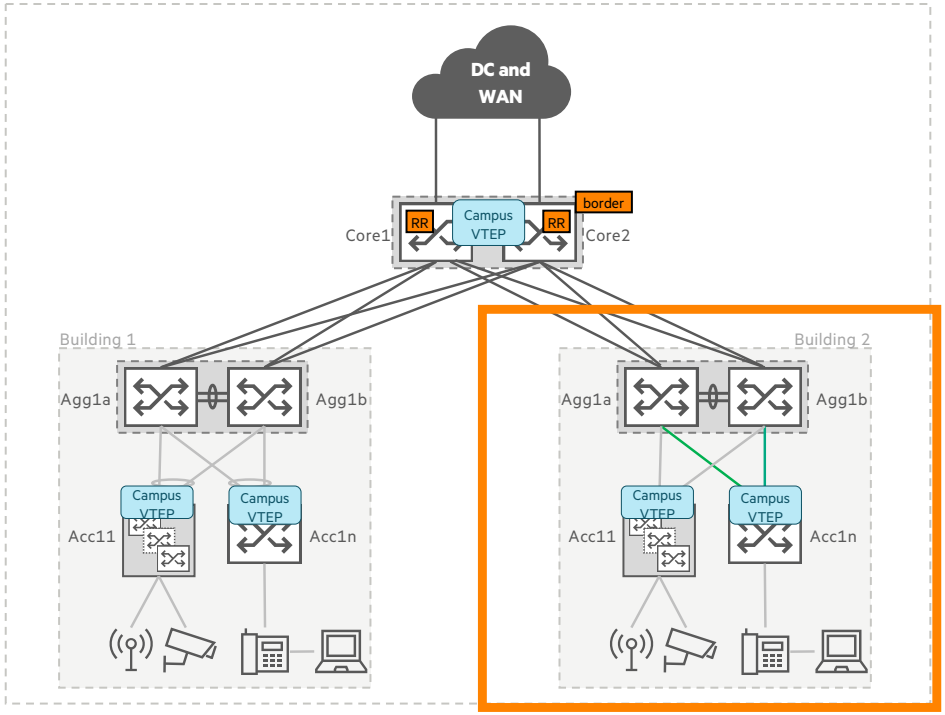
Network Scalability & Optimization

Simplifies management

Easy RPVST deployments in Multi-VLAN environments

On-par with other vendors

Campus Architecture with Aggregate & Access platforms



Details

Details

- **auto-vlan-enable** command enables RPVST instances for all the VLANs specified under the capacities field of each switch

```
Bldg2-Acc-4100i# show capacities rpvst


System Capacities: Filter RPVST
Capacities Name                                                                                                    Value
-------------------------------------------------------------------------------------------------------------------------
Maximum number of RPVST VLANs configurable on the system                                                              32
Maximum number of RPVST VPORTs supported in a system                                                                 512
```

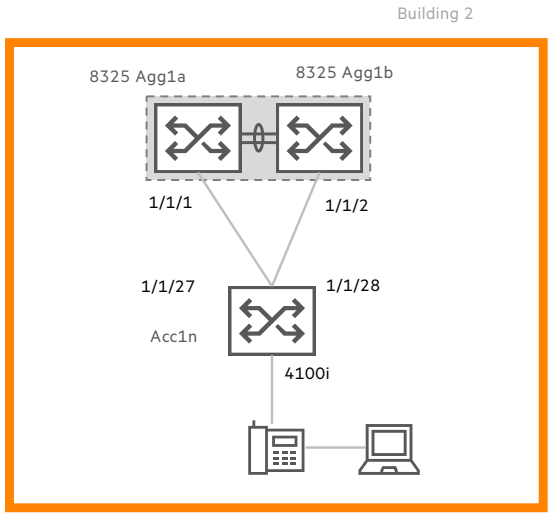
```
Bldg2-Acc-4100i# show capacities-status rpvst


System Capacities Status: Filter RPVST
Capacities Status Name
                                                                                    Value   Maximum
-----------------------------------------------------------------------------------------------------
Number of RPVST VLANs currently configured                                              7      32
Number of RPVST Vports currently configured                                            39     512
```

Configuration

Configuration - CLI

Auto enablement of RPVST with vlan list

```
Vlan 1-1000

# spanning-tree

# spanning-tree mode rpvst auto-vlan-enable

# [Spanning-tree will only run on vlans 1-32 max supported
limit]
```



Auto enablement of RPVST without vlan list

```
# spanning-tree mode rpvst auto-vlan-enable

Vlan 2-100

# [spanning-tree will run on vlan 1-32 max supported limit]
```

This command enables RPVST globally on new and existing Vlans

Configuration - CLI

Disabling auto vlan enable (exclusion list)

```
# Vlan 1-1000

# spanning-tree vlan 25-32 disable

# spanning-tree mode rpvst auto-vlan-enable
```

Here STP instance will be enabled for the following Vlans 1-24, 33-40 (with respect to 4100i)

Configuration - CLI

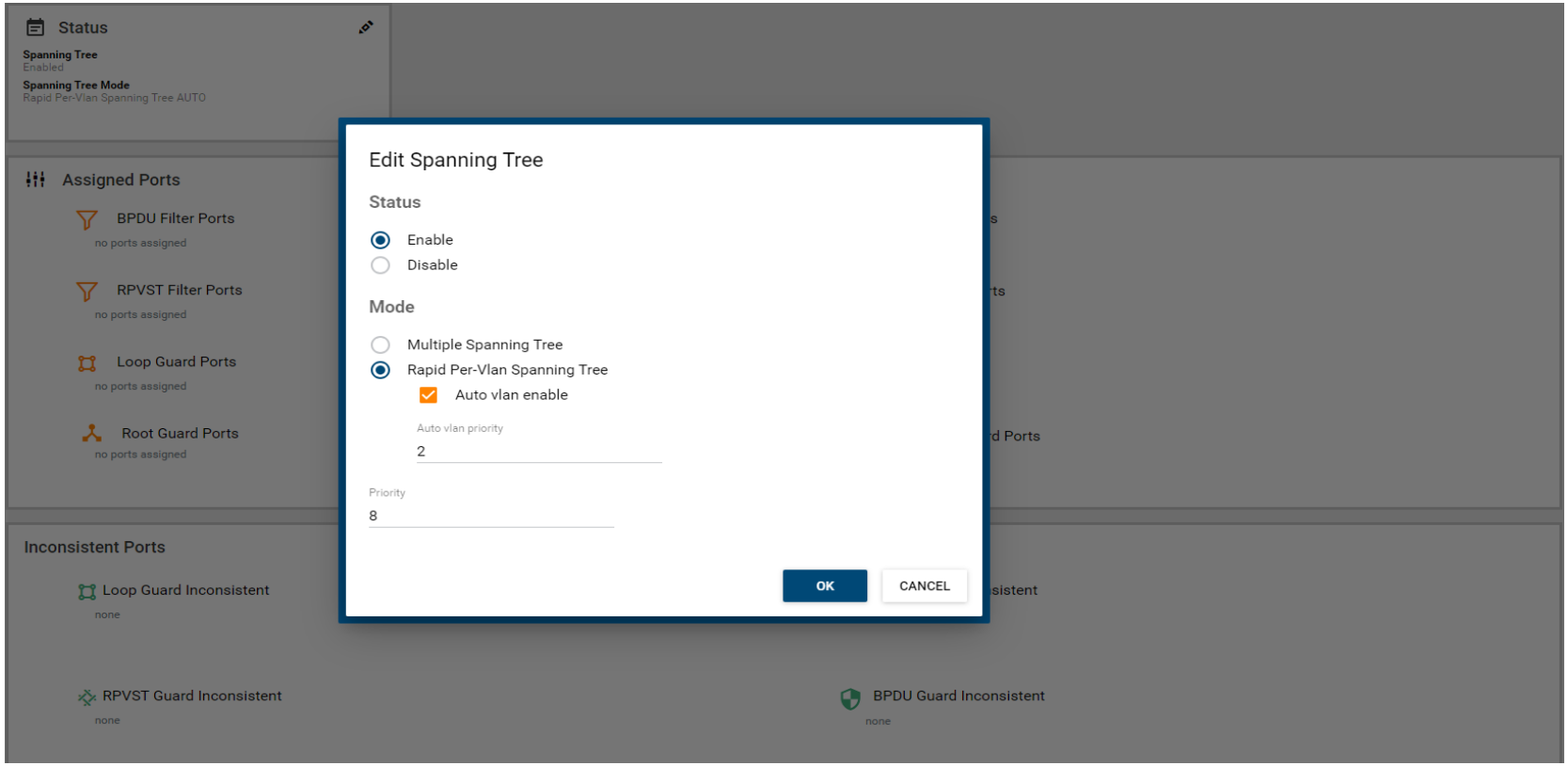
Configuring global STP timer values – Priority value

```
Vlan 1-1000

# spanning-tree

# spanning-tree mode rpvst auto-vlan-enable priority 2
```

Configuring global STP timer values – forward-delay ,hello-time ,max-age ,max-hops

```
Vlan 1-1000

# spanning-tree

# spanning-tree mode rpvst auto-vlan-enable

spanning-tree vlan 1-32

spanning-tree vlan 1-32 forward-delay 10

spanning-tree vlan 5 hello-time 7

spanning-tree vlan 6 max-age 10
```

Configuration – Web UI



Best Practices

Best Practices

- It is recommended to not allow more Vlans or vPorts to be used than the maximum shown with command **show capacities rpvst & show capacities-status rpvst**

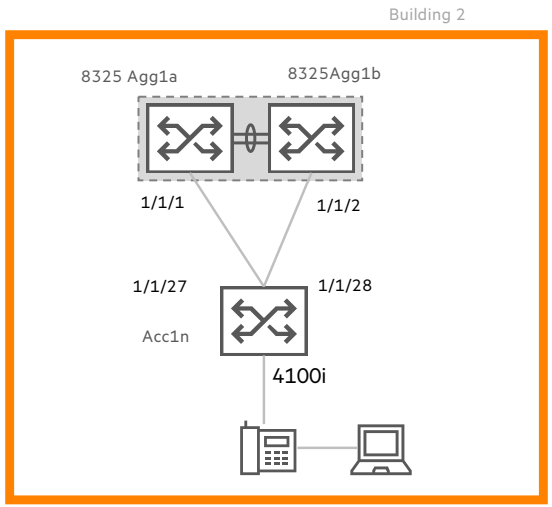
- Only select the VLANs required on a specific link for the allowed list based on the requirement on each port.

  -For example, for a link using VLANs 10,11,12 and 15 use command vlan trunk 10-12,15

- Vlans can still be created after the mentioned capacities, but RPVST is not applied above the scaled limit.

Demo

Feature Demo



- Creating Vlans on all three switches and enabling RPVST Auto mode.
- Checking for default spanning-tree mode in the switch
- Check for the RPVST after enabling them using the Global command on all three switches
- Assign priority values for specific and through config context globally.

Thank you

aruba_switching_tme@hpe.com

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