radware

Alteon
34.x

Alteon Level 1 Lab Manual High Availability

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Objectives

After viewing the **High Availability** eLearning module and completing this lab, you should be able to:
Configure Active and Backup Alteon devices for High Availability failover.

Overview

In this lab you will set up a redundant network for high availability (HA).
The single-switch configuration is enhanced by a second switch to provide High Availability (HA) based on enhanced configuration on Alteon OS v30.2 (or higher). The legacy-mode high availability (VRRP) is coverd in Alteon Level 2 training. For more information on HA, refer to *Alteon Application Guide*.

You'll configure HA for active Alteon (Active = A) and backup Alteon (Backup = B) devices.
High availability is maintained as follows: if the active device fails and no longer passes traffic, the backup device takes over. This minimizes downtime on a critical network.

For technical support, ask your local trainer or email to RadwareVirtualLab@radware.com

Lab Configuration Details – Alteon HA

Alteon Remote Lab Overview

Alteon Configuration Information

Management:

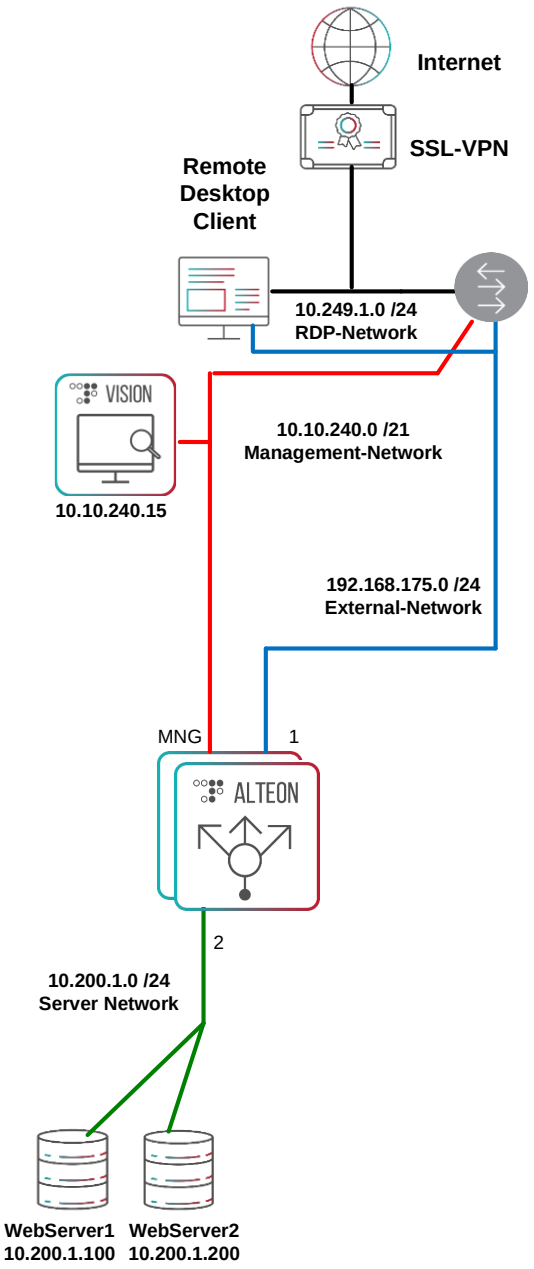
Alteon-A:	**10.10.240.11**
Alteon-B:	**10.10.240.12**
Netmask:	**255.255.248.0**
Gateway:	**10.10.240.254**

External Network

Port / If:	**1**
VLAN:	**11**
Alteon-A:	**192.168.175.11**
Alteon-B:	**192.168.175.12**
Netmask:	**255.255.255.0**
Gateway 1:	**192.168.175.254**
Floating IP:	**192.168.175.1**

Server Network

Port / If:	**2**
VLAN:	**14**
Alteon-A:	**10.200.1.11**
Alteon-B:	**10.200.1.12**
Netmask:	**255.255.255.0**
Floating IP:	**10.200.1.254**
Proxy IP:	**10.200.1.15**



Lab Preparations:

Before you begin this lab:

1. Review Lab Configuration Details - Alteon HA (lab layout on the previous page). For convenience, print the topology.
2. Verify that configuration of management port IP is correct.

Lab Activities

Here is a summary of the activities you'll perform in this High Availability Lab:

- Verify and configure (active) Alteon A:
  - Verify Switching & Configure Routing Basic Setup
  - Add interface peer IPs
- Configure (backup) Alteon B:
  - Verify Management IP on Device B
  - Configure Switching & Routing Minimal Setup
- Configure High Availability on A
  - Enable HA Switch Mode
  - Select advertisement interfaces
  - (Opt) Configure Session Mirroring
  - (Opt) Configure Failover Trigger
- Configure Synchronization for A to B

Verify and Configure Setup on Active (Device A)

1. Connect to Alteon Active Device A

The following 5 steps are the basic setup you configured in the SWITCHING & ROUTING STANDARD SETUP -- Standard Layer 2 and Layer 3 setup. These were performed for Device A.

2. Verify the creation of two VLANs on Active Alteon (Device A); add ports.

Verify L2 VLANs	
Physical Port	**VLAN ID**
1	11
2	14

3. Verify that the Spanning Tree Group (STG) is turned off.

4. Configure Layer 3 (L3) IP interfaces. Configure interface Peer IP addresses additionally.

Configure Layer 3 IPs = Alteon A				
IF ID	**IP Address**	**Mask**	**Peer IP**	**VLAN ID**
1	192.168.175.11	255.255.255.0	192.168.175.12	11
2	10.200.1.11	255.255.255.0	10.200.1.12	14

GUI:

Configuration → Network → Layer 2 → VLAN

a. Verify VLANs.

Configuration → Network → Layer 2 → Spanning Tree → Spanning Tree Group

a. Verify Spanning Tree Group 1.

Configuration → Network → Layer 3 → IP Interfaces

Double click on each interface and add peer IP address.

5. Verify default gateway 192.168.175.254

GUI:

b. Configuration → Network → Layer 3 → Gateways

c. Double click on gateway 1 to verify.

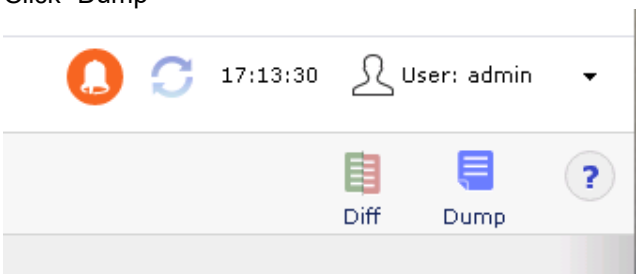
6. Check configuration.

CLI:

```
cc
```

GUI:

Click “Dump”



7. Test device connectivity.

Ping Default Gateway IP address. Ping Server(s) IP address(es).
If all Pings fail, reboot your Alteon device.

Configure Setup on Backup (Device B)

1. Connect to Alteon-B Device.
2. L2 VLAN and System configuration can't synchronize. Therefore, you need configure these parameters.
3. Disable VLANs 1-6 and STG 1.
4. Configure Layer 2 (L2), create same two VLANs and add ports as for first Alteon done.
5. Add one interface config for configuration synchronization
6. Add configuration synchronization peer and parameter.
7. These steps are very similar to configuration of Alteon-A. Therefore, we skip details for configuration.

1. Customize the prompt for your Alteon.

   Go to **Configuration → System → SNMP** System Name: **Alteon-B**

   Go to **Configuration → System → Management Access → Management Protocols → CLI** Prompt: **Hostname**

2. Lengthen Alteon idle timeout to 9999 minutes so the device does not idle out.
   Go to **Configuration → System → Management Access**

3. Set service access
   By default, all services except Network-HSM using data port stack for communication. We change use management port stack.
   Go to **Configuration → System → Management Access → Management Traffic Routing**

4. Set time sync by NTP.
   Set primary NTP to IP address 10.10.240.254, time zone none and offset to +00:00 and turn it on and check setup.
   Go to **Configuration → System → Time and Date**

5. Set Domain Name Server Primary IP Address to 10.10.240.254.
   Go to **Configuration → System → DNS Client**

6. Set Syslog Server Host 1 IP Address to 10.10.240.1.
   Go to **Configuration → System → Logging and Alerts**

7. Set VLAN 11 to port 1 and VLAN 14 to port 2, disable all other VLANs
   Go to **Configuration → Network → Layer 2 → VLAN**

8. Turn off Spanning Tree Group (STG).
   Go to **Configuration -> Network -> Layer 2 -> Spanning Tree -> Spanning Tree Group**

9. Define Layer 3 (L3) IP interfaces. For sync we use the Server Network.
   IF ID 2, IP Address 10.200.1.12 /24, VLAN 14 and Peer IP 10.200.1.11
   Local Go to **Configuration → Network → Layer 3 → IP Interfaces**
   Apply changes

10. Setup Configuration Sync.

For communication set Peer IP 10.200.1.11

Go to **Configuration → Network → High Availability → Configuration Sync**

a. Select **Peers** and press **+** button.
b. **Enable** Peers
c. Peer ID set **1**
d. IP Address **10.200.1.11**
e. **Submit** changes
f. Select **Modules to Sync**
g. Remove all and add selection for **IP Interfaces, Port, Gateways, PIP, Certificates**
h. Certificate and Authentication passphrase we set to **radware1** *Use in real world use a stronger password.*
i. **Submit** and **Apply** changes

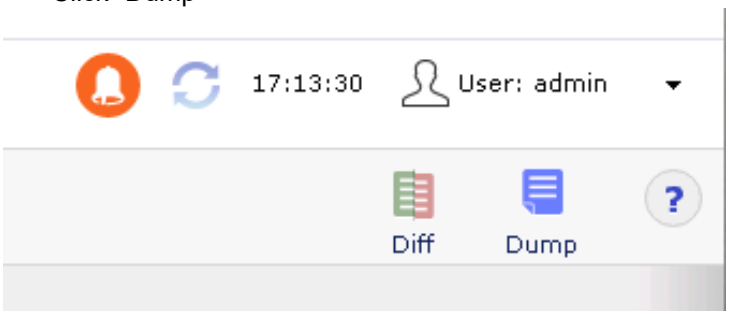
IMPORTANT: **Do not sync at this time.**

11. Verify configuration of both Alteon.

For communication

GUI:

Click “Dump”



Connect by SSH or console
cc or /cfg/dump command

12. Test device connectivity.

Ping opposite Server Net IP interface of Alteon-A, and both Server IP addresses.

Configure High Availability on Device A & B

IMPORTANT: In this lab, we will synchronize HA configuration from Device A to Device B
-- as a result, we configure HA on Device A and set on Alteon-B only required communication parameters.

Configure Synchronization on Active (Device A) and setup HA

IMPORTANT: In this lab, we will synch these HA configuration steps from Device A to Device B -- as a result, we only configured HA on Device A.

Ensure connection to Active A.

You may still be connected.
Define Peer IP address for Active A

a. Use Peer ID = 1
b. Use Peer IP address = 10.200.1.12

IP Address is for the peer Alteon. Only data ports --not management IP -- are valid for sync.
Any interface IP would work BUT of Radware Lab, use the IP address for IF 2 from Backup B.

GUI:

1. Setup Configuration Sync.

   For communication set Peer IP 10.200.1.12
   Go to **Configuration → Network → High Availability → Configuration Sync**

   a. Select **Peers** and press **+** button.
   b. **Enable** Peers
   c. Peer ID set **1**
   d. IP Address **10.200.1.12**

   e. **Submit** changes
   f. Select **Modules to Sync**
   g. Remove all and add selection for **IP Interfaces, Port, Gateways, PIP, Certificates**
   h. Certifcate and Authentication passphrase we set to **radware1** *In real world use a stronger password.*
   i. **Submit, Apply** and **Save** changes

   Click **Sync** button on top. After a couple of seconds check on Alteon-B the interface and default gateway configuration. Is now interface 1 and 2 as well gw1 available? Config at Alteon-B is applied and saved by synchronization.
   If you like sync config by only applying a new config turn on automatic sync at Modules to Sync menu. We recommend doing it.

   Alteon-A: Configuration → Network → High Availability → Configuration Sync

   a. Select **Modules to Sync**
   b. **Check** Automatic Sync
   c. Click **Submit** and **Apply** and **Save**

2. Test device connectivity.

Ping both opposite IP interface of each Alteon, Default Gateway and both Server IP addresses.

HA Pre-Step: Assign Floating IPs

A floating IP address is a virtual IP address that is identical for both devices in the HA pair. It must be on the same subnet as the interface and must be different from any other defined **IP.**

Assign a floating IP address for each interface on **Device A**; Device B will receive this IP via configuration synchronization which we already configured in this lab.

Configure Floating IP for each interface	
Interface ID	**Floating IP Address**
1	192.168.175.1
2	10.200.1.254

GUI:

a. **Configuration → Network → High Availability → Floating IP**
b. Click **+** [to add new Floating IP]
c. Check **Enable Floating IP**
d. Enter **ID**, **Floating IP**, and **IP Interface**
e. Click **Submit**

HA: Enable HA Mode – Device A

1. Enable High Availability: Switch Mode.

GUI:

a. **Configuration → Network → High Availability**
b. Select **High Availability Mode**: Switch HA
c. Keep all other parameters like On Failure at default values.

2. Assign Advertisement interfaces.

GUI:

a. In **Advertisement Interfaces** tab:
b. Select **Interfaces 1 and 2** and **click >** to add to Selected

3. Configure Stateful Failover (optional)

a. Click on **Stateful Failover** tab
b. Select Unicast Session Mirroring (select 1 as primary and 2 as secondary interface), Persistent Sessions, Dynamic Data Store, or TLS Session Ticket Encryption Key (radware1 as passphrase).
c. Click **Submit, Apply** and **Save** Apply is slow down since we need to sync config with Alteon-B.

Validate your Configuration

Check - Test

a. Status is visible in window top left using access by any browser. HA-Status Master | Backup
b. Status is visible top left > More using access by Cyber Controller. HA-Status Active | Backup
c. Monitoring -> Network -> High Availability -> State

Validate your synchronization on Device A as well on Device B.

d. Test the configuration.
e. Start a continuous ping from VPN RDP machine. **ping 192.168.175.1 -t**.
f. At current Master Alteon click on **Backup** to switch manually HA master.
g. **Monitoring → Network → High Availability**
h. Click on **Backup**

Continuous ping on RDP client fails for 1 or 2 requests and is continued on new master again.

On current Master we can simulate a port outage. Disable physical port 1.

a. **Configuration → Network → Physical Ports → Port Settings**
b. **Double click port 1** set status to **Disable** for Enable Port .

Continuous ping on RDP client fails for 1 or 2 requests and is continued on new master again.

c. **Enable** this port again.

After successful testing of High Availability (HA) is complete,

a. **Save** configuration
b. At Remote Client computer use the **Ctrl+C** keys to stop the continuous ping.

Export each configuration file to use as backup.

Name files: ALTEON-A_BACKUP_HA and ALTEON-B_BACKUP_HA . At Cyber Controller is this config available as ALTEON-A_BACKUP_HA and ALTEON-A_BACKUP_HA and Alteon-B_Minimum-Configuration.

For questions, contact training@Radware.com