

How to Set Up a High Availability Cluster

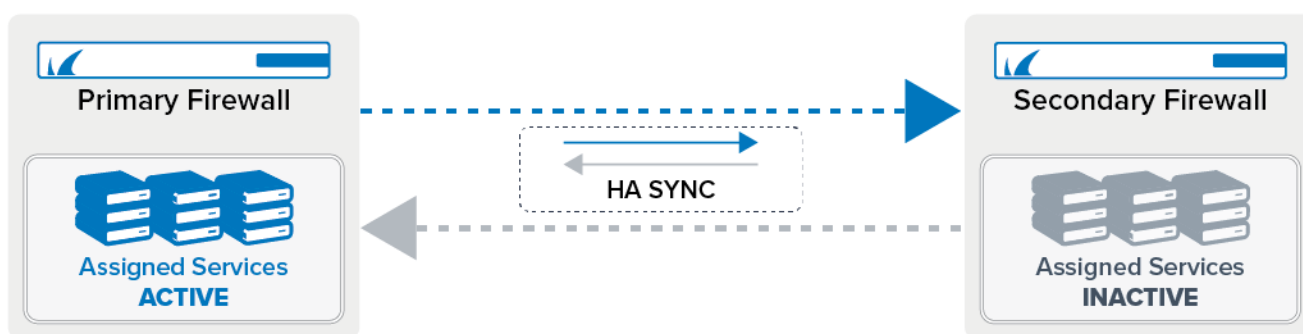
<https://campus.barracuda.com/doc/17609/>

On a hardware level, both systems in a high availability (HA) cluster must be the same model, but do not have to be the same revision. On the firmware level, the HA cluster is designed to temporarily work with different firmware versions, because updating an HA cluster must always be done sequentially. During the update, for example, the firmware version numbers 8.3.x can work with 9.0.x. Also, the time period for updating an HA pair should be kept as low as possible because the feature set of two major firmware versions is usually divergent.

For instructions on how to configure an HA cluster using different revisions of the same appliance model, see [How to Restore the High Availability Cluster Configuration after an RMA](#).

The functionality of stand-alone and managed high availability clusters are the same. However, the configuration differs. For a stand-alone HA cluster, the primary firewall downloads the licenses for both firewalls, and when the secondary firewall is joined to the HA cluster, the license for the secondary firewall is transferred over. The licenses are bound to the MAC addresses of the primary and secondary firewall. The primary firewall is also the configuration master for all configurations, except for the Network page. All configurations and session information are synced from the primary firewall to the secondary firewall. To protect against failure of network components, you can use a dedicated private link as a secondary HA connection.

Stand-Alone HA Cluster



Before You Begin

- Connect the primary firewall and secondary firewall to a network switch.






Step 1. (Virtual only) Verify the Product Type


Set the product type matching your license if you are using a virtual Barracuda CloudGen Firewall.


This is not necessary on hardware appliances.

1. Go to **CONFIGURATION > Configuration Tree > Box > Box Properties**.
2. Click **Lock**.
3. Select the model from the **Product Type** list. E.g., **CloudGen Firewall VF50**
4. Select the model from the **Hardware Model** list.

Product and Model

OS Platform	NG Firewall	
Product Type	NG Firewall VF50	
Hardware Model	NG Firewall VF50	
Encryption Level	Full-Featured-Encryption	
Storage Architecture	Hard disk <input type="checkbox"/> Other 	

 To activate the unit: open 'Status' page and see 'Appliance' section.

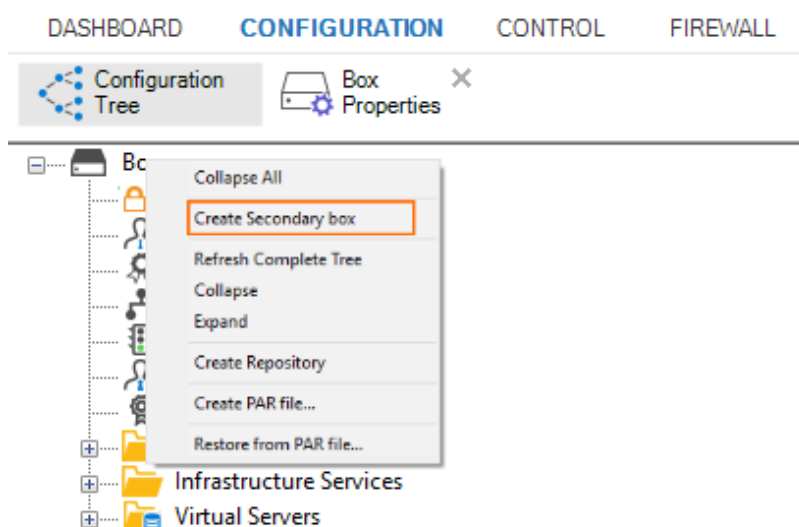
 A set SF model is required for activation on commodity hardware and legacy appliances.

5. Click **Send Changes** and **Activate**.

Step 2. Create the Secondary Firewall

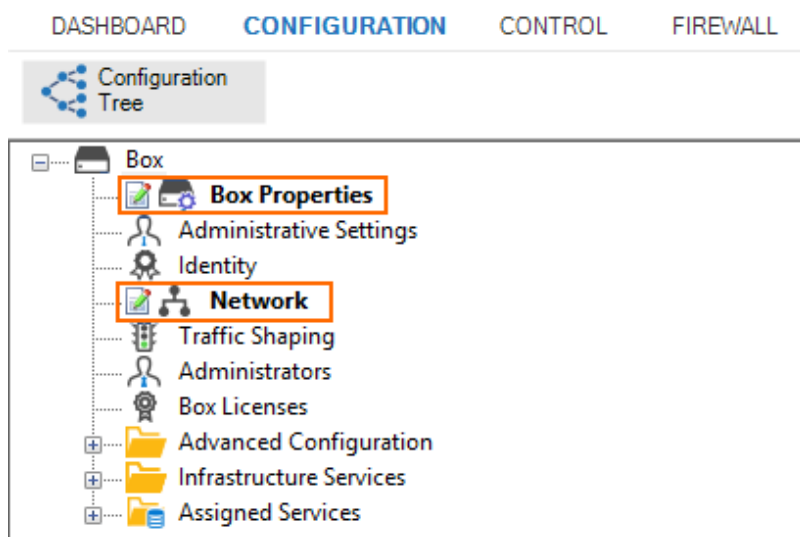
On the primary firewall, create the configuration for the secondary HA firewall.

1. Go to **CONFIGURATION > Configuration Tree > Box**.
2. Right-click **Box** and select **Create Secondary box**.



3. The **Box Properties** and **Network** nodes are replaced by new a node, each suitable for an HA

configuration.



4. Open the **Network** page.
5. Enter the **Management IP (MIP)** for the secondary firewall. The MIPs of the HA pair must be in the same subnet.

Device Name

Hostname

Management IP and Network

Interface Name Other

Management IP (MIP)

Secondary Management IP (MIP)

Associated Netmask

Responds to Ping

6. If you have configured networks using additional local IP addresses on the primary firewall,
 1. Expand the **Configuration Mode** menu and select **Switch to Advanced**.
 2. Scroll down to **Additional Local IPs** and edit each entry:
 - Enter an **IP Address** from the available network for the secondary firewall.
7. Click **Send Changes** and **Activate**.

Step 3. Create the PAR File for the Secondary Firewall

On the primary firewall, export the PAR file for the secondary firewall.

1. On the primary firewall, create the PAR file:
2. Go to **CONFIGURATION > Configuration Tree > Box**.
3. From the **Config Tree**, right-click **Box** and select **Create PAR file for Secondary box**.
4. Save the PAR file to your local hard disk drive.

Step 4. Import the PAR File on the Secondary Firewall

On the secondary firewall, import the boxha.par PAR file created on the primary firewall.

1. Go to **CONFIGURATION > Configuration Tree > Box**.
2. From the **Config Tree**, right-click **Box** and select **Restore from PAR file**.
3. Click **OK**.
4. Select the **box_secondary.par** file created in Step 3 and click **OK**.
5. Click **Activate**.

Step 5. Activate the New Network Configuration for the Secondary Firewall

On the secondary firewall, activate the network configuration.

1. Go to **CONTROL > Box**.
2. In the left navigation pane, expand **Network** and click **Activate new network configuration**.
3. Select **Failsafe** as the activation mode.
4. In the left menu, expand **Operating System** and click **Reboot Box**.

Step 6. Activate the New Network Configuration for the Primary Firewall

On the primary firewall, activate the network configuration.

1. Go to **CONTROL > Box**.
2. In the left navigation pane, expand **Network** and click **Activate new network configuration**.
3. Select **Failsafe** as the activation mode.
4. In the left menu, expand **Operating System** and click **Reboot Box**.

Step 6. Install Licenses

You must install licenses on both firewalls. For instructions, see [How to Activate and License a Standalone High Availability Cluster](#).

Next Steps

Configure a Private Uplink

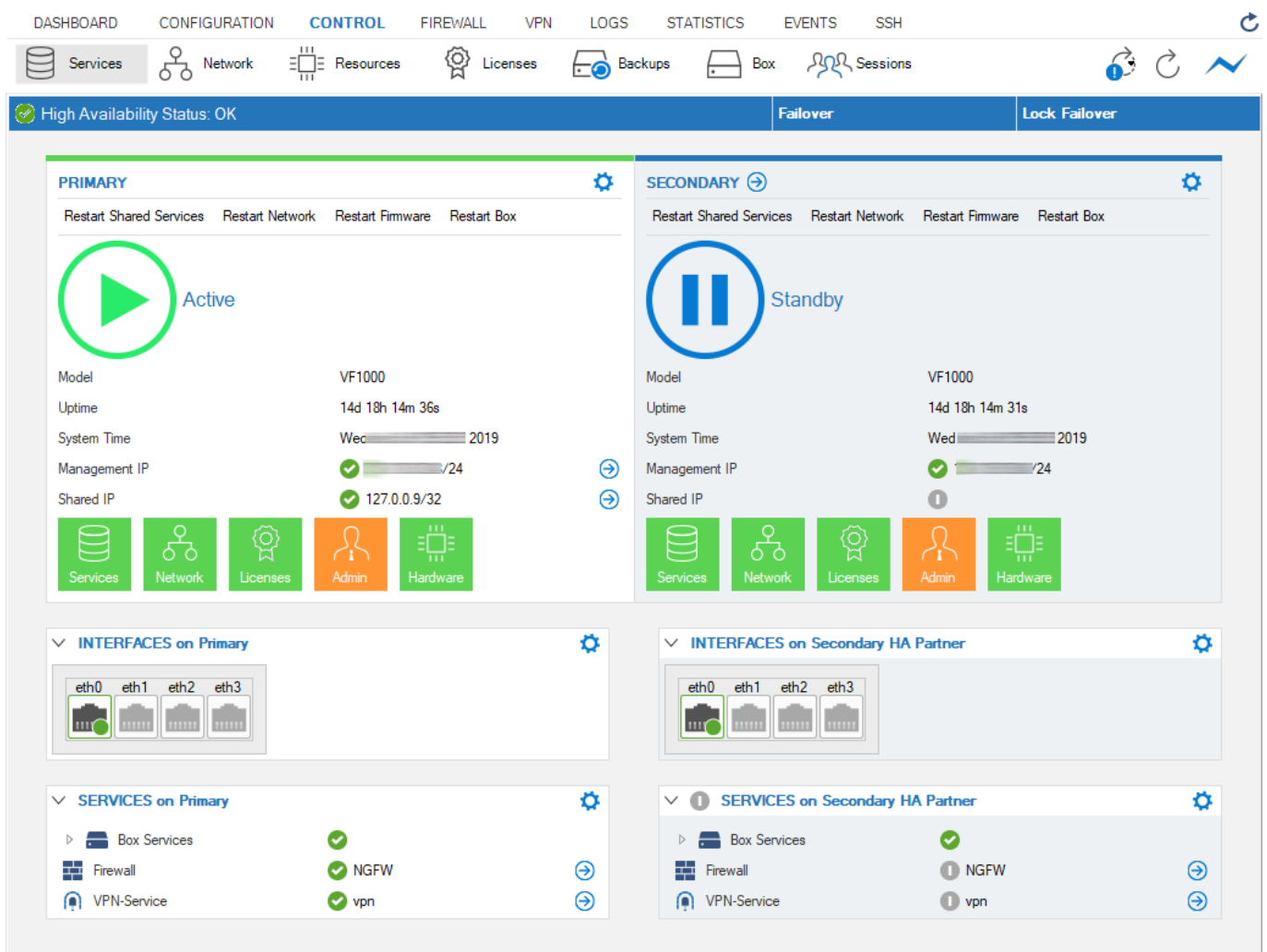
To avoid the switch connecting the primary and secondary firewall from becoming the single point of failure for the HA cluster, configure a private uplink for HA sync. Connect both firewalls with a crossover cable. Each firewall receives an additional management IP address in the /30 subnet used for the private uplink. The HA sync can use the private uplink as an alternative to the normal connection between the management IPs, or it can use both links simultaneously.

For more information, see [How to Configure a Private Uplink for a High Availability Cluster](#).

Check the Service HA Status

Check the services' status on both HA firewalls to verify that they have been correctly assigned.

1. Go to **CONTROL > Services**.





When the primary firewall goes down, the secondary firewall changes its status to Primary and replaces the primary firewall with all its functionalities. Immediately after the failover, the services on the primary are blocked:

DASHBOARD CONFIGURATION **CONTROL** FIREWALL VPN LOGS STATISTICS EVENTS SSH

Services Network Resources Licenses Box Sessions Refresh if active Refresh (F5) Disconnect

High Availability Status: HA Takeover Blocked Failover **Unlock Failover**

PRIMARY	SECONDARY
Restart Shared Services Restart Network Restart Firmware Restart Box	Restart Shared Services Restart Network Restart Firmware Restart Box
 Blocked	 Active
Model VF1000 Uptime 12d 20h 59m 20s System Time Mon 2019 Management IP /24 Shared IP	Model VF1000 Uptime 12d 20h 59m 15s System Time Mon 2019 Management IP /24 Shared IP 127.0.0.9/32
Services Network Licenses Admin Hardware	Services Network Licenses Admin Hardware
INTERFACES on Primary eth0 eth1 eth2 eth3	INTERFACES on Secondary HA Partner: MSpannagelDHA-HA eth0 eth1 eth2 eth3
SERVICES on Primary Box Services ✓ Firewall ✓ NGFW VPN-Service ✓ vpn	SERVICES on Secondary HA Partner: MSpannagelDHA-HA Box Services ✓ Firewall ✓ NGFW VPN-Service ✓ vpn

When clicking **Unlock Failover**, the services on the primary will be put into standby mode:


DASHBOARD CONFIGURATION **CONTROL** FIREWALL LOGS STATISTICS EVENTS SSH

Services Network Resources Licenses Box Sessions Refresh if active Refresh (F5) Disconnect

High Availability Status: Backup Appliance has taken Over Failover Lock Failover

PRIMARY

Restart Shared Services Restart Network Restart Firmware Restart Box




Standby

Model: VF1000
Uptime: 43m 56s
System Time: Mon 2019
Management IP: ✓ /24
Shared IP: !

Services
Network
Licenses
Admin
Hardware

SECONDARY

Restart Shared Services Restart Network Restart Firmware Restart Box



Active

Model: VF1000
Uptime: 45m 10s
System Time: Mon 2019
Management IP: ✓ /24
Shared IP: ✓ 127.0.0.9/32

Services
Network
Licenses
Admin
Hardware

INTERFACES on Primary

eth0
eth1
eth2
eth3

INTERFACES on Secondary HA Partner: 801-final-HA1-HA

eth0
eth1
eth2
eth3

SERVICES on Primary

Box Services ✓

Firewall ! NGFW

SERVICES on Secondary HA Partner: 801-final-HA1-HA

Box Services ✓

Firewall ✓ NGFW

Figures

1. ha_sync_80.png
2. HA_set_product_type.png
3. HA_create_secondary_box.png
4. HA_nodes_for_secondary_created.png
5. HA_enter_management_IP_for_secondary.png
6. HA_in_default_state_01.png
7. HA_failover_to_secondary.png
8. HA_secondary_is_active.png

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