SonicWall HA Deployments and Licensing Explained

High Availability

SonicWall has three types of High Availability which are detailed below.

SonicWall High Availability is available on all SonicWall UTM Appliances apart from the Soho and all wireless units.

Only the Primary SonicWall needs to be configured (in some cases you may need to log in to the Backup appliance and turn off the PortShielding feature).

The Primary SonicWall is the only appliance that needs to have the Security Services licensed.

When the appliances have been registered correctly in the same MySonicWall account they will share the licences across both appliances.

All settings and licencing are synchronised across both Appliances.

Stateless (Active/Passive)

Stateless High Availability is the most basic kind of HA. When the Active SonicWall appliance fails, the Idle appliance becomes the Active appliance, dropping all active connections and then renegotiating the connections.

Stateful (Active/Passive)

With Stateful High Availability, when the Active SonicWall appliance fails, the Idle appliance becomes the Active appliance caching most of the active connections without the need to renegotiate the connections due to the use of the Virtual MAC feature.

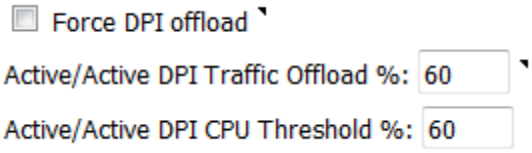
Below is a list of all the connection types that with be synchronised as the Active appliance fails to the Idle unit when it becomes active.

Information that is Synchronized	Information that is not Synchronized
VPN information	Dynamic WAN clients (L2TP, PPPoE, and PPTP)
Basic connection cache	Deep Packet Inspection (GAV, IPS, and Anti Spyware)
FTP	IPHelper bindings (such as NetBIOS and DHCP)
Oracle SQL*NET	SYNFlood protection information
Real Audio	Content Filtering Service information
RTSP	VoIP protocols
GVC information	Dynamic ARP entries and ARP cache timeouts
Dynamic Address Objects	Active wireless client information
DHCP server information	wireless client packet statistics
Multicast and IGMP	Rogue AP list
Active users	
ARP	
SonicPoint status	
Wireless guest status	
License information	
Weighted Load Balancing information	
RIP and OSPF information	

Active/Active DPI (Active/Passive + Active/Active for DPI Services) *

Active / Active DPI works in the same way as Stateful HA but with the extra ability to share the Deep Packet Inspection traffic across both appliances. The firewall, NAT, and other modules are processed on the active firewall

The default settings are as below based on Traffic or CPU load of the Primary Appliance, however this can be manually set under the Internal Settings page to change the threshold or to force all the DPI traffic to be offloaded to the Idle Appliance.



SonicWall Appliance Model and Licensing

Model	Stateful HA	A/A DPI	Clustering
TZ 300/350	N/A	N/A	N/A
TZ 400	N/A	N/A	N/A
TZ 500	• Expanded License • Stateful HA Upgrade License	N/A	N/A
TZ 600	• Expanded License • Stateful HA Upgrade License	N/A	N/A
NSA 2400 **NSA 2600** **NSa 2650**	• Expanded license 01-SSC-7090 • HA license 01-SSC-7095	N/A	N/A
NSA 3500 **NSA 3600** **NSa 3650**	• Expanded license 01-SSC-7091 • HA license 01-SSC-7094	N/A	Expanded From 6.2.9 Firmware 01-SSC-7091
NSA 4500 **NSA 4600** **NSa 4650**	Included	N/A	Expanded From 6.2.9 Firmware 01-SSC-4037
NSA E5500 **NSA 5600** **NSa 5650**	Included	Expanded 01-SSC-4480	Expanded 01-SSC-4480
NSA E6500 **NSA 6600** **NSa 6650**	Included	Expanded 01-SSC-4481	Expanded 01-SSC-4481
SM 9200/ NSa 9250	Included	Included	Included
SM 9400/NSa 9450	Included	Included	Included
SM 9600/NSa 9650	Included	Included	Included
		Capture ATP is not supported for A/A DPI deployments	

For High Availability Configurations guides see links below.

Tips for High Availability (HA) setup
https://www.sonicwall.com/en-us/support/knowledge-base/170504379328065

How to Replace a Primary or Secondary High Availability (HA) unit
https://www.sonicwall.com/en-us/support/knowledge-base/170505579151355

Associating an Appliance at First Registration on MySonicWall for High Availability
https://www.sonicwall.com/en-us/support/knowledge-base/170503915384601

* Not to be confused with Active/Active Clustering where in some scenarios both or more appliances have to be fully licensed.

SonicWall HA Clustering

- In HA Clustering both firewalls (‘Cluster Nodes’) are processing traffic. There are several deployment methods and caveats as stated below.
- A ‘Cluster Node’ can be either a single Appliance or Two Appliances in Stateful HA or Active/Active DPI.
- There can be a Maximum of up to 4 Cluster Nodes (8 Appliances in total)
- You would choose this method for extra redundancy and throughput.
- This method requires the use of additional network devices for load balancing using VRRP.
- For the Full Mesh option utilising the redundant ports, it is recommended to use different colour cables to avoid confusion.

Licensing Cluster Scenarios

- The licensing is dependent on the configuration e.g. in a deployment of Active/Active two unit cluster as shown in the image below, both appliances need to be fully licensed **.

- In an Active/Passive HA Four Unit Cluster where each Node Cluster comprises of a Primary and Backup appliance, just the Primary Appliances need to be fully licensed **.

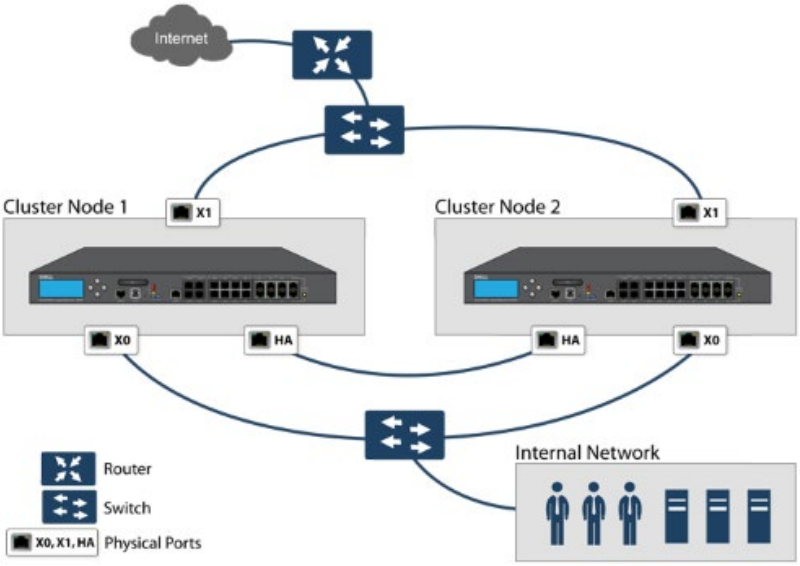
- In an Active/Active DPI HA Four Unit Cluster where each Node Cluster comprises of a Primary and Backup appliance, just the Primary Appliances need to be fully licensed **.

  ** from Firmware version 6.2.9 firmware the NSA 3600 and 4600 are supported for Active/Active Clustering, The NSA5600 and NSa5650 require the Expanded license for the Active/Active DPI and Clustering options.

Active/Active Two Unit cluster

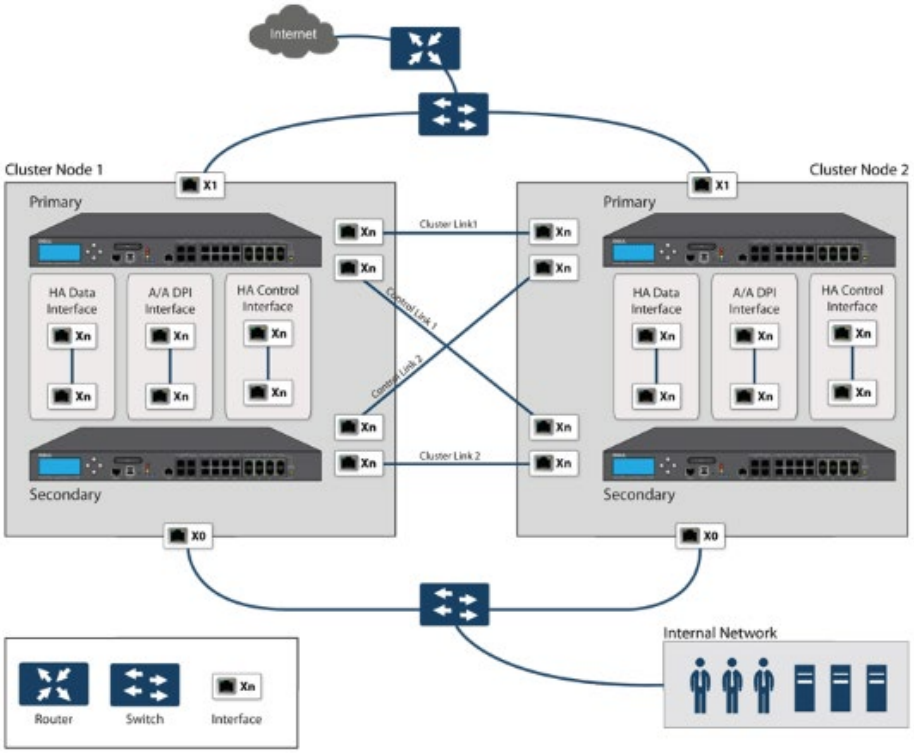
The most basic deployment is the Active/Active two-unit cluster as shown below, where both appliances are fully licensed and processing traffic.

The configuration is managed on the Master Cluster Node (Cluster Node 1). If this fails then all traffic will be processed on Cluster Node 2. This method involves no Backup appliances in the individual Cluster Nodes so therefore the Active/Active failover is Stateless so all network connections will be reset and VPN tunnels will be renegotiated.



Active/Active DPI HA Four Unit Cluster

For larger deployments, the cluster can include up to eight firewalls configured as four Cluster Nodes (or HA pairs). Within each Cluster Node, Stateful HA keeps the dynamic state synchronized for seamless failover with zero loss of data or a single point of failure. Stateful HA is not required, but is highly recommended for best performance during failover.Active/Active DPI HA Four Unit Cluster



Feature Caveats

When Active/Active Clustering is enabled, only static IP addresses can be used on the WAN.

The following features are not supported when Active/Active Clustering is enabled:

- DHCP Server
- L3 Transparent Mode
- L2 Bridging / L2 Transparent Mode
- Dynamic DNS
- Wire Mode

The following features are only supported on Virtual Group 1:

- SonicWall GVC
- SonicOS SSL VPN
- IP Helper

For more information on SonicWall Clustering see here:

http://help.sonicwall.com/help/sw/por/6950/26/2/4/content/HA_AAClusteringConfig.html