

# Frequently Asked Questions (FAQ)

## NSE R9.2

Document revisions		
Date	Version Number	Document Changes
2022/02/22	1.0	Document Publication

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### 1. What new features are available in NSE R9.2?

There are 3 areas addressed by the NSE R9.2:

- The major new feature is High-Availability Clustering
- A secondary minor feature is host names for Syslog server addresses
- General bug fixes and software improvement.

Please see the readme document and administration guide for more information.

### 2. What is an essential prerequisite for supporting High-Availability Clustering?

The switch fabric on the subscriber/LAN side of the gateway cluster needs to support LACP with Source MAC (Hospitality) or VLAN (Managed Wi-Fi) load balancing functionality.

### 3. Is there a change to the current High-Availability Failover Module feature?

The current High-Availability Failover Module – also known as Active-Passive Failover – will continue to work the same as it has in the past and will remain as an option for 1:1 gateway redundancy. Note the system will only be able to license one or the other features at a single time. So, either Active-Passive Failover or High-Availability Clustering will be available, not both modules at the same time on the same Gateway.

### 4. How should redundancy be achieved with the new Feature?

Since each node is still limited to the devices licensed, the ability to add redundancy to the network depends on the desired redundancy and the requirements to support failures. This means that if a site needs to normally support 10,000 devices and 13Gbps of throughput a standard cluster would work with just 2 x EG 6000 nodes of 5,000 devices and 7Gbps each. To add redundancy, at least 1 more node would need to be added so that if there was a single failure the full amount of users and bandwidth would still be supported.

### 5. Is Preferred WAN functionality supported with High-Availability Clustering?

Yes, all gateways in the cluster should have the same ISP connections using the same ports. For example, WAN for all nodes is connected to ISP1 while ETH1 for all nodes is connected to ISP2. All port names should match in the cluster so when a preferred WAN is assigned by RADIUS authentication the same port name is used for all nodes and assignment of the user will follow.

### 6. Are VLANs supported with High-Availability Clustering?

Yes, as with all other networks the VLANs should be trunked to the Nomadix subscriber interfaces from the LACP ports that connect all nodes to the switch fabric.

### 7. How many Nomadix gateways can be combined in a High-Availability Cluster?

The number of gateways supported is determined by the number of LACP aggregation ports on the switches connected to the cluster. Please refer to the networks equipment documentation.

### 8. Do the previous Clustering and High-Availability Failover features still work?

Yes, both the previous clustering and High-Availability Module – also known as Active-Passive Failover – features will continue to work in the same way as before. However, the new High-Availability Clustering Module is an improvement over these. Note the system will only be able to license one or the other High-Availability feature at a single time so they cannot work simultaneously. If the new High-Availability Clustering feature is licensed, then the gateway will not have access to the previous Clustering or Active-Passive Failover features.

### 9. Is there a new licensed module for the High-Availability Clustering feature?

Yes, please see the latest price list for module price and licensing cost.

### 10. What platforms is High-Availability Clustering available on?

Only the EG platforms will have the ability to enable the High-Availability Clustering feature (EG 1000, EG 3000L, EG 3000, and EG 6000).

### 11. Should all nodes in a cluster match their licensing?

Yes, all nodes in a High-Availability Cluster should have matching gateway models, device count, bandwidth, and additional modules for proper functionality and redundancy.

### 12. Is there a single place to see all users on a High-Availability Cluster?

Yes, each gateway (node) in the cluster can show all devices that are present in the cluster, when the 'Show Cluster Subscribers' is enabled on the Current subscriber table UI page. (Subscriber Administration -> Current)

### 13. Can a previous High-Availability Failover pair be changed to a High-Availability Cluster?

Yes. First please check the networks infrastructure supports the LACP requirements for the High-Availability Clustering feature. Then, all the device and bandwidth licenses and any additional modules that were purchased for the primary gateway will need to be purchased for the secondary unit. Also, both units will need to add the High-Availability Clustering Module. Note if the new High-Availability Clustering feature is licensed, then the gateway will not have access to the previous Clustering or Active-Passive Failover features.

### 14. Can High-Availability Clustering include multiple Subscriber ports in a single gateway node?

No, only one Subscriber LAGG port set to CLS can be configured on a Nomadix High-Availability Cluster node. WAN ports are not limited in this way and multiple WAN ports or even a LAGG setup for the WAN interface can be implemented with High-Availability Clustering.

### 15. How should DHCP scopes be configured across the cluster?

Each node of the cluster will need to have unique DHCP addresses. Support for features like subnet based DHCP scopes or other configurations where there are multiple scopes managed by the cluster the configuration gets a little more complex. Each node in the cluster will need to have a scope with the same subnet as are configured on each of the other nodes. Each scope will need to be configured with non-overlapping addresses though. For example:

- Node 1 has two scopes: 192.168.10.0 with addresses 192.168.10.5-125 and 10.10.0.0 with addresses 10.10.0.5-10.10.1.250.
- Node 2 will need to have two matching scopes as well: 192.168.10.0 with addresses 192.168.10.130-250 and 10.10.0.0 with addresses 10.10.5.5-10.10.15.130

**16. Which network infrastructure equipment meet the prerequisites for High-Availability Clustering?**

Below are examples of switches that have been examined by Nomadix for their LACP compatibility:

Switch Model	Switch OS	LAG Port Limit	Load Balancing	LACP Timeout Configurable
Aruba 2530	ArubaOS 16.06	8	L2/L3/L4-based src/dst packet info is used	N
Aruba 2540	ArubaOS 16.05	8	L2/L3/L4-based src/dst packet info is used	N
Aruba 2930F, 2930M	ArubaOS 16.08	8	L2/L3/L4-based src/dst packet info is used	N
Aruba 6100, 6200, 6300, 6400, 8320, 8325, 8360, 8400	AOS-CX 10.06	up to 16	I2-src-dst, I3-src-dst, I4-src-dst	Y
Cisco Catalyst 2960-X	IOS 15.2(2)E4	8	dst-ip, dst-mac, src-dst-ip, src-dst-mac, src-ip, src-mac	N (although manual says Y)
Cisco Catalyst 9300L	IOS 16.12.3a	8	dst-ip, dst-mac, dst-mixed-ip-port, dst-port, extended, src-dst-ip, src-dst-mac, src-dst-mixed-ip-port, src-dst-port, src-ip, src-mac, src-mixed-ip-port, src-port	Y
Extreme X435	EXOS 30.5	8	address-based L2, L3, L3_L4 src/dst packet info is used	Y
HPE OfficeConnect 1820	PT.02.06	4, 8	* Src MAC, VLAN, Ethertype, Incoming Port * Dst MAC, VLAN, Ethertype, Incoming Port * Src/Dst MAC, VLAN, Ethertype, Incoming Port * Src IP and Src TCP/UDP Port Fields * Dst IP and Dst TCP/UDP Port Fields * Src/Dst IP and TCP/UDP Port Fields	N

Switch Model	Switch OS	LAG Port Limit	Load Balancing	LACP Timeout Configurable
HPE FlexNetwork 5130	R32xx	8	destination-ip, destination-mac, destination-port, ingress-port, source-ip, source-mac, source-port	Y
HPE 5900, 5920	R24xx	32	destination-ip, destination-mac, destination-port, ingress-port, source-ip, source-mac, source-port	Y
Ruckus ICX 7150-7850	FastIron 08.0.95	8, 16	not configurable; method used for load sharing depends on the device type and traffic type (L2 or L3)	Y

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