High Availability

High Availability is adopted in the network that requires fault tolerance and backup mechanism. Two similar devices are used to be the backup for each other. One of these devices is employed for major network transmitting, and the other redundant device will take over when the master device fails to assure that network transmitting and services never break down. Therefore, administrators will have more opportunity and time to deal with the master device problems.

Besides general HA, Qno also provides advanced HA function that enables two devices to operate simultaneously. It brings full cost efficiency without making another device idle. It does not have to be the same model. All of Qno devices which support HA can achieve the function.

High Availability	Enable: Activate HA function.
	Disable: Disable HA function.
Mode	(1) Hardware Backup Mode
	It is the general backup mode. The master device takes responsibility of network transmitting and the other one is set as idle. When the master device fails transmitting, it will send out the message to the idle device for taking over network transmitting immediately.
	(2) Two devices are operating simultaneously
	Two devices operate outbound linking simultaneously, but they are still separated as

Master device and Backup device. In normal situation, Master device is major DHCP IP issuer, and Backup device will disable DHCP issuing automatically. When Master device fails transmitting, the Backup device will take over all outbound links and enable DHCP server to provide IP addresses.

Following is the description of the two different modes.

Hardware Backup

※ **Operation-Master Mode**	Indicates the master device will operate for all outbound links. When the master device fails transmitting, the backup device will take over.
Status	"Status- Normal" indicates the device operates well.
Status of the backup device	Indicates status of backup device. If the status is normal, administrators can login the device remotely to manage. (Remote Management should be enabled). "Status- Abnormal" indicates the backup device can not be detected or does exist, and need to inspect the backup device actual status.

Operation-Backup Mode	Indicates the backup device will take over when the master fails

transmitting. WAN and LAN IP setting in backup device should be the same as those of master device. The backup device should not be in charge of network transmitting and DHCP server.

※ If the original LAN IP addresses are issued by Master device, DHCP server setting of Backup device should be the same as Master device. The Backup device can keep DHCP functioning and there will be no LAN disconnection.

LAN IP of the backup device	Input LAN IP of Master mode, which is backed up.
MAC Address of the backup device:	Input Master device MAC address, which is backed up.
Status	"Status- Normal" indicates the status is idle. Master device operates normally. "Status- Backup" indicates the device takes over all the network transmitting. The status will return to "Normal" when Master device boots normally and send a message to the backup device. Then, the status will return to Normal, which the backup device remains idle.

Two devices are operating simultaneously:

Operation-Master Mode	Besides operating network with another device, Master device is also the DHCP server to issue LAN IP addresses. Although Slave device also supports outbound linking, its DHCP server is disabled.
WAN Backup **(The Checked WANs are not working in this device.)**	The checked WANs will works in the other device. For an example, if WAN1 and WAN2 work in this device, and WAN3 and WAN4 work in the other device, WAN3 and WAN4 should be checked.
LAN Gateway Backup	Input LAN IP of Slave device. The IP should be different from LAN IP of Master device.

MAC Address of the backup device	Input LAN MAC of Slave device. It should be different from LAN MAC of Master device.
Status	"Status-Normal" means both two devices operate normally. "Status-Backup" indicates Slave mode has problems, and the device enables backup to take over WAN

Operation-Slave Mode	Although working with master device, Backup device's DHCP server is disabled. LAN users need to transmit traffic through the WAN on Slave device. You should add LAN IP of Slave device into Master device DHCP server default gateway, which is DHCP server IP address. For example, if the DHCP server's IP of Master device is 192.168.1.1, and the subnet mask is 255.255.255.0, Salve device should be in the same subnet, ex. 192.168.1.2.
WAN Backup **(The Checked WANs are not working in this device.)**	The checked WANs will works in another device. For an example, if WAN1 and WAN2 work in this device, and WAN3 and WAN4 work in another, WAN3 and WAN4 should be checked.
LAN Gateway Backup	Input the LAN IP of Master device. It should be different from Slave device's IP. (Must be in the same subnet.)
MAC Address of the backup device	Input the LAN MAC of Master device. It should be different from Salve device's LAN MAC.
Status	"Status-Normal" indicates both devices work normally; "Status-Backup" indicates the Backup device is enabled for backing up Master device to take over WAN connection and DHCP issuing function.