

FAQ Guide

i-MO 310 & 540 Series *Bonding Routers*



# FAQ Guide

*for the i-MO 310 & 540 Series Appliances*

OptiBond™



Advanced Bandwidth  
Technologies



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## **i-MO OptiBond™ - answers to frequently asked questions.**

### ***How many cellular links can I have?***

An i-MO appliance can have up to three 3G or 4G modems installed which will support three simultaneous connections (one per modem).

### ***Does i-MO support 4G/LTE?***

i-MO can be equipped with up to three 4G/LTE modules.

### ***What 3G modes are supported?***

The 3G/UMTS and 4G/LTE modules support HSPA+ with download speeds up to 21.1Mbps and upload speeds of 5.76Mbps.

### ***What 3G frequencies are supported?***

The 3G/UMTS modules support the following frequency bands: 850/900/1900/2100 MHz.

### ***What 4G/LTE frequencies are supported?***

The 4G/LTE modules support the following frequency bands: 800/900/1800/2100/2600 MHz.

### ***Can I route specific subnets over a connection?***

Yes, you can configure i-MO send one or more subnets over a specific cellular link. For example, if you have private APN, you can route private traffic over this connection and send traffic for the Internet over another connection.

### ***Does i-MO support private APN?***

Yes, you can set the APN that will be used on a per network basis.

## **SIMS**

### ***Why does i-MO have 6 SIM slots?***

You can install up to 6 SIMs and the intelligent OptiBond™ software will select the SIMs that will give you the best performance.

### ***How does i-MO select which SIM to use?***

The OptiBond™ software can be configured to select the best SIM based on the available network mode (e.g. 3G, HSPA or LTE) and available bandwidth allowance allocated to the SIM. The advanced bandwidth management feature requires the optional "Management Console" which is deployed on the Concentrator.

### ***How does the "mode" option work?***

This mode searches for the network modes (e.g. 3G, HSDPA or LTE) for ALL the networks that are being received and the OptiBond™ software then selects the SIMs that will give the optimum performance. This mode can be use with or without a Concentrator. It is the ideal mode to use in mobile applications. For example if you have two LTE modules and SIMs for four networks installed i-MO then the OptiBond™ software will try to find two networks that have LTE at your current location.

### ***How does the "slotrotate" mode work?***

This mode implements a simple bandwidth balancing strategy and can be used with or without a Concentrator. On an odd day of the month SIM slots 1, 3 and 5 are used and on even days slots 2, 4 and 6 are used. For example on the 6th September slots 2, 4 and 6 are active and on the next day (7th September) slots 1, 3 and 5 are active. If there is no SIM installed in a slot it will be ignored.

### ***How does the "allowance" mode work?***

This mode monitors the bandwidth used per SIM per billing cycle and will exclude a SIM when its bandwidth allowance has been used. This mode requires a Concentrator which is used to manage SIMs and record the data usage. The OptiBond™ software maintains a list of available SIMs (those that are not over their bandwidth allowance) and uses the "mode" option to select the best active SIMs.

### ***Can I hot-swap or change SIMs without powering off the device?***

Currently the OptiBond™ software does not support hot swapping and you must power off the appliance before removing or inserting a SIM.

## **VPN**

### ***What types of VPNs are supported?***

The integrated VPN client supports IPSEC site to site VPNs.

### ***How many VPNs are supported?***

The GUI only supports a single VPN connection however it does support multiple subnets. For example:

192.168.0.1/24 to 10.0.100.1/24

192.168.0.1/24 to 192.168.100.1/24

### ***Do I need a Concentrator?***

No the IPSEC client can connect to most IPSEC VPN servers.

### ***Can I use a VPN if I am behind a firewall?***

Yes i-MO supports NAT-Traversal.

## WAN

### *How many WAN links can I have?*

i-MO supports up to 4 WAN links.

### *Can I route specific subnets over a WAN link?*

Yes you can route one or more subnets over a WAN link.

## WiFi

### *What speeds does i-MO support?*

i-MO supports 802.11 B/G/N with the following speeds: 54, 48, 36, 18,12, 9, 11, 6, 5.5, 2, and 1 Mbps, auto fallback.

### *What security is available?*

i-MO supports WPA2 and WEP security.

## Routing

### *Can I send some traffic over a specific link?*

Yes, you can route one or more subnets of a specific WAN and cellular link.

### *Can I send some traffic over a VPN and some direct to the Internet?*

Yes, This is called "split routing" and is supported by i-MO.

## Aggregation/Bonding

### *What is bonding or link aggregation?*

OptiBond™ can bond or aggregate two or more physical data circuits into a single faster logical connection. For example it is possible to combine two 10Mbps WAN circuits into a single logical connection, with a maximum speed of 20Mbps for faster web-browsing, downloading of files or email attachments.

### *How many connections can I bond?*

With the standard Concentrator you can aggregate up to three links.

### *Do I need a Concentrator?*

Yes a Concentrator is required for the OptiBond™ aggregation feature.

### ***What is a Concentrator?***

A Concentrator is a virtual appliance that acts as a link aggregator for i-MO clients to connect to.

### ***What are the requirements for virtual Concentrator?***

The minimum requirements for a virtual Concentrator are VMWare ESX V3 or higher, 1 GHz CPU 512Mb RAM, a 10 GB hard drive and 1 LAN interface for each network segment that will be connected to the Concentrator. It also requires 1 IP address per aggregated link and 1 IP on each network segment. For example if you are using one or more i-MO in a mobile configuration with three LTE modules then you will need 1 interface with 3 public IP addresses for aggregation plus a fourth address and IP for the internal traffic. The standard i-MO Concentrator is supplied pre-configured with 4 logical ethernet ports.

Aggregated connections are supported through a NAT firewall.

### ***Can I bond a WAN and cellular link?***

It is technically possible to aggregate WAN and cellular links. However, WAN and cellular links have different properties in terms of latency, packet loss and jitter, therefore we do not recommend aggregating WAN and cellular links.

### ***ISP requirements***

OptiBond™ aggregation does not require any special services from your ISP and the aggregation is performed independently from your ISP.

### ***How are 3G and 4G links bonded?***

The default setting for OptiBond™ is not to bond 3G and 4G links. However there are options that enable the bonding of the faster 3G modes (DC-HSDPA, HSPA+ & HSPA) which can offer similar performance to 4G.

### ***Is there any limit on the speed of an aggregated link?***

The speed of an aggregated link will be limited by the speed of the connection(s) to the Concentrator. We recommend installing the Concentrator in a data-centre with multiple high speed connections to the Internet.

### ***Do I need to run my own Concentrator?***

We have a number of partners who provide a Concentrator as a managed service.

## **Fail-Over**

### ***What is fail-over?***

i-MO can be configured to switch over (failover) from a primary data connection to a backup data link in the event that the primary link fails.

### ***Can I-MO fail back to the primary link when it becomes active again?***

Yes, once the OptiBond™ software detects that the primary link is alive it will fail back to it.

### ***How long does it take to detect that a link has failed or has been restored?***

This is a configurable option - you can specify how often the link is checked and how long it must be unresponsive before it is marked as 'down'. For wired links you might check every five seconds and mark the link as 'down' after fifteen seconds, for a cellular which can suffer from radio propagation issues checking every ten seconds and marking the link as 'down' after thirty seconds would be more appropriate.

### ***How quickly does I-MO failover?***

The is a configurable option, but typically it will take thirty seconds to one minute for a link to failover.

### ***How does i-MO determine if a link is alive?***

OptiBond™ uses several methods to determine if a link is alive. If it is a WAN link then the cable must be connected and there must be a route to the gateway or next hop. If it is a cellular link then it must be registered with a network and have successfully dialed. In addition the address of a "heartbeat" device can be added to both WAN and cellular links. When a heartbeat address is configured then this must respond to an ICMP ping request.

### ***Do I need a Concentrator for fail-over?***

No, the failover feature can be used without a Concentrator.

### ***Can I fail-over between a WAN and a cellular link?***

Yes, you can failover from any physical (WAN or cellular) link or bonded tunnel.

### ***Can I fail an aggregated link from a WAN to cellular link?***

Yes, you can failover bonded tunnel between WAN or cellular links.

### ***Can I fail between aggregated link?***

Yes, you can between bonded tunnels.

## **NAS**

### ***Are CIFS/Windows Shares supported?***

The optional RAID & CIFS license key enables a public shared folder.

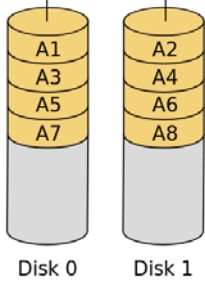
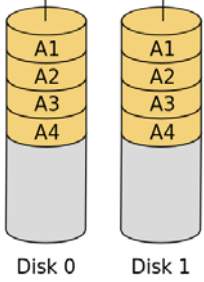
### ***Can I install my own hard drives?***

The NAS feature requires a license key and only approved drives are supported.



### What RAID configurations are supported?

When 2 drives are installed you can configure RAID 0 (striping) or RAID 1 (mirroring).

<p style="text-align: center;"><b>RAID 0</b></p>  <p style="text-align: center;">Disk 0      Disk 1</p>	<p style="text-align: center;"><b>RAID 1</b></p>  <p style="text-align: center;">Disk 0      Disk 1</p>
<p><i>RAID 0 can be used to join physical disks into a larger logical disk, data is striped across the drives</i></p>	<p><i>RAID 1 writes each block of data to both drives, which protects your data in the event of disk failure.</i></p>

### How does the replication work?

Replication copies data from the local hard drive to a remote Windows share. The intelligent replication software copies new files or the parts of an existing file that have changed. In addition to a RAID 1 configuration this further protects your valuable data by copying it to a central store.

### How many drives does the i-MO 540 support?

The i-MO 540 can have up to two 2.5 inch hard drives.

### How does the i-MO 310 support NAS?

The i-MO 310 supports a single internal USB flash drive (pen drive). No RAID configurations are supported.

## VOIP

### What IP Phones can I use?

i-MO use standard VOIP protocols and can support most IP handsets.

### Can I use an SIP trunk/gateway?

SIP is the recommend method for delivering telephone calls to the PSTN (public telephone network).