WANrockIT
Quickstart Guide
Eli-v6.5.391

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1 Introduction

This guide is designed to help you through the steps required to power up and configure the basic settings on a Bridgeworks WANrockIT. For more detailed configuration options please refer to the WANrockIT Software Manual (https://support.4bridgeworks.com/documents/manuals/).

1.1 Definitions

Throughout this manual, selected terms will be used to describe pieces of equipment and concepts. This section provides an explanation of those terms.

1.1.1 iSCSI Target Device

iSCSI target devices are devices such as disk drives, tape drives or RAID controllers that are attached to the network. Each device is identified by an IQN (iSCSI Qualified Name).

1.1.2 iSCSI Qualified Name (IQN)

Anything connected to a network, be it a computer, printer or iSCSI device must have a unique identifier, such as an IP address, to enable other devices to communicate with it. With iSCSI devices (both targets and initiators) an extra level of identification in addition to the IP address is employed. This is called the IQN. The IQN includes the iSCSI Target's name and an identifier for the shared iSCSI device.
Example: 2002-12.com.4bridgeworks.sdt600a014d10:5

1.1.3 iSCSI Challenge Handshake Authentication Protocol (CHAP)

CHAP is an authentication scheme used by iSCSI to validate the identity of iSCSI targets and initiators. When CHAP is enabled, the initiator must send the correct username and target password to gain access to the iSCSI target.

Optionally the initiator can request that the target authenticates itself to the initiator; this is called mutual CHAP. If mutual CHAP is selected on the initiator, the iSCSI target will authenticate itself with the initiator using the initiator secret.

1.1.4 Logical Unit Number (LUN)

Each device in a SCSI storage system can support multiple sub-devices; these Logical Units (LU) are indexed by numbers called Logical Unit Numbers (LUN). Within the iSCSI Connect Bridge each SCSI ID on the SCSI bus can support 7 LUNs.

1.1.5 Node

A Node refers to a WANrockIT unit.

1.1.6 Target Device

A device that services storage and management commands, sending responses to those commands. For example disk or tape drives.

1.1.7 Initiator Device

A computer or other piece of equipment, which sends storage and management commands to one or more target devices.

1.1.8 Initiator Port

The port or interface on an initiator device through which commands are transmitted and responses received.

1.1.9 Target Port

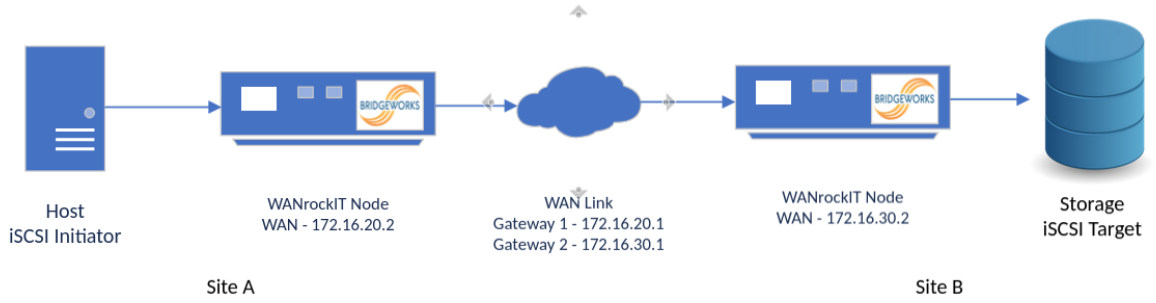
The port or interface on a target device through which commands are received and responses transmitted.

2 Pre-Install Checklist

Before connecting any equipment, or performing any patching, please ensure you have completed the pre-installation checklist below.

- How will the WANrockIT devices be securely linked? Do you already have an active site-to-site VPN or dedicated secure network? The WANrockIT has an option to set up an IPsec tunnel between Nodes if neither of those options are available
- iSCSI, SAS and/or FC connection details
- iSCSI, SAS and/or FC cables
- IP Addresses for Management and WAN interface/s
- PC or Laptop connected to the Management LAN
- Routing rules planned (if required)
- Licence Key saved to local machine
- Keyboard and monitor

A typical configuration is shown in the image below, where traffic from a server at Site A will be accelerated over a WAN link to the storage at Site B.



3 Setup

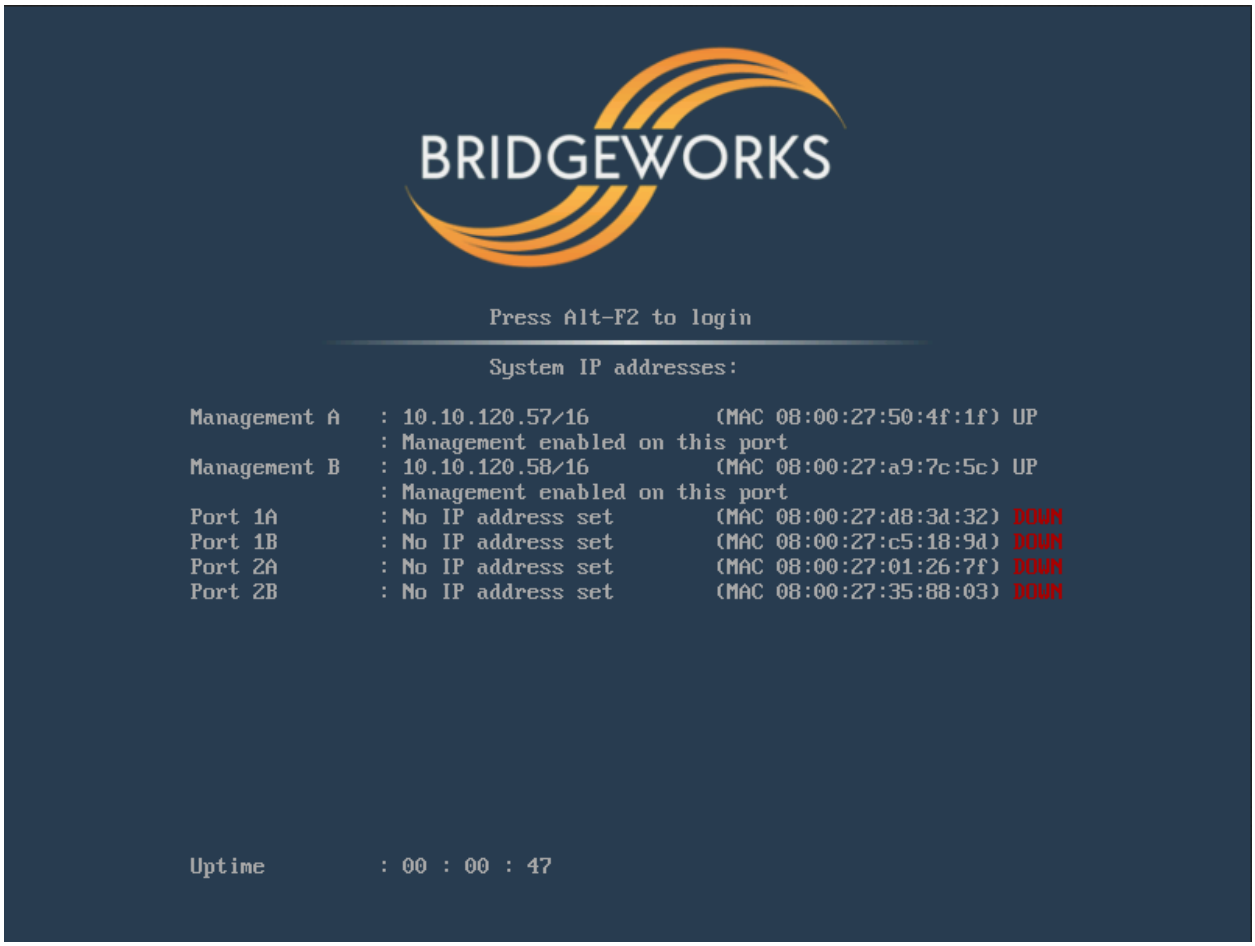
3.1 Hardware

To set up a hardware WANrockIT:

- Install the server into a rack using the included rails and ensure it is secure.
- Plug the power leads into the appropriate sockets.
- Connect an Ethernet cable to the management interface on Port A of the onboard Network Interface Controller (NIC).
- Connect an Ethernet cable to the WAN interface. On Series 100 and 200 this is Port B of the onboard NIC. On Series 400 and 800 the WAN licence is not assigned by default and can be mapped to any PCIe slot based Ethernet port.
- Connect the iSCSI, SAS and/or FC cables to the appropriate interfaces.
- Connect the keyboard and monitor.

Warning: Ensure that the cables you are using are rated for the correct speed. If a cable is rated for a lower speed than the interface, the connection will not run at full capacity.

Now power on the device. The Node should boot with a display similar to the one below:



3.1.1 Configuring a Static IP

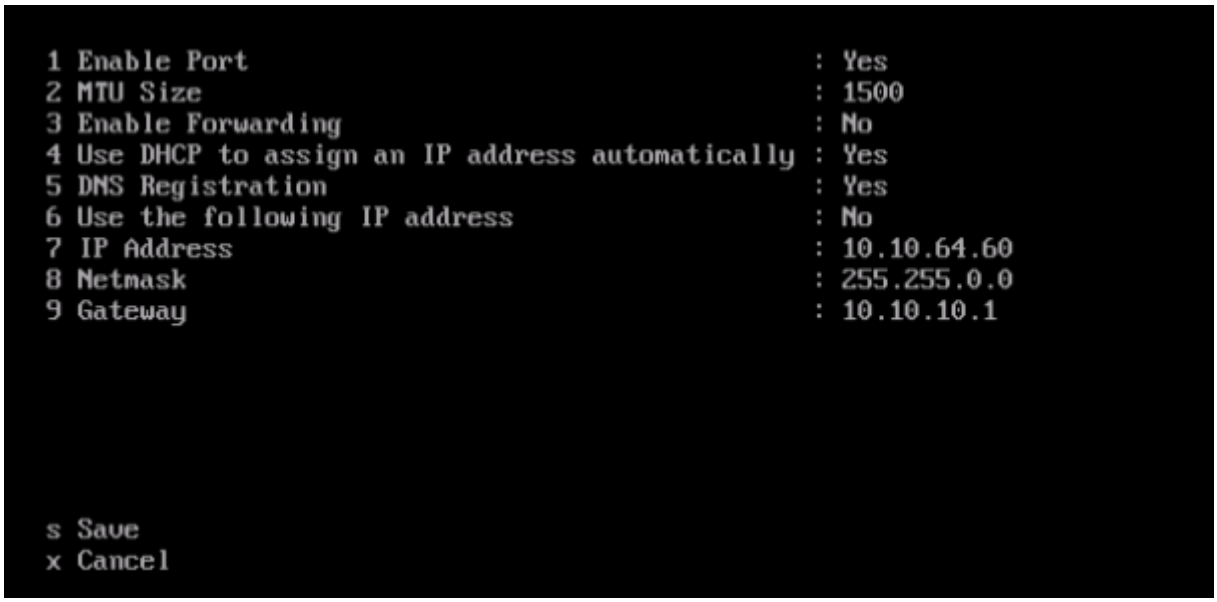
If the device is installed on a network that is not using DHCP you will need to configure a static IP Address so that you can access the Web GUI to complete the configuration of the Node.

Press *ALT-F2* to login to the Node.

As this will be the first time you have logged into the Node you will be required to set an administrator password for the device.

You can now log into the Node using the default username *admin*, and the password you set.

Within the Command Line Interface, you can select an option by entering the number next to it. Navigate to Network Connections using 1, then select the port you will be using to manage your Node.



Ensure this port is enabled by checking the *Enable Port* option. If this says *No* next to it, select it, then press `y` to enable it.

DHCP will be enabled by default. To set a static IP address for your Node, select *Use the following IP address*.

Next, set your IP address by selecting *IP Address* and entering a valid IPv4 address. You may also need to adjust the netmask and default gateway. When you are done modifying your port settings, press `s` to save.

Once you have saved all your settings, press `r` to reboot your Node to apply them.

4 Configuration

You can now perform the rest of the configuration remotely via the web interface using the Management IP address.

If you have not used the CLI as above to configure an Admin password, you will be required to set the admin password for the device. This can be altered later on if required. Once set you will be returned to the login screen to enter the username ”admin” with the password you have just configured.

Upon accessing the web interface for the first time, you will be required to accept the End User Licence Agreement.

You should now be on the Home page of the web interface for the WANrockIT (as shown below).

A guide to configuring the following settings is shown below:

- Section 4.1: Changing the Hostname (Optional)
- Section 4.2: Installing the Licence Key
- Section 4.3: Port Mappings
- Section 4.4: Network Connections
- Section 4.5: Establishing a Link Between Nodes
- Chapter 5: Connecting Targets
- Chapter 6: Connecting Initiators

During the configuration process you will be required to reboot the device several times.

4.1 Changing the Hostname (Optional)

To set the hostname for the device, first return to the Home page using the *Home* button in the sidebar on the left. Then select *Network Connections* and then *General Settings*. You can change the hostname for the device here. If you wish to display the hostname of the node on the login page select the checkbox labelled ”Hostname on Login Page:”

Once you’ve amended the settings, click *Save* and select *OK* to the prompt that appears. You can make additional configuration changes before rebooting the device.

Return to the Home screen by selecting *Home* at the top left.

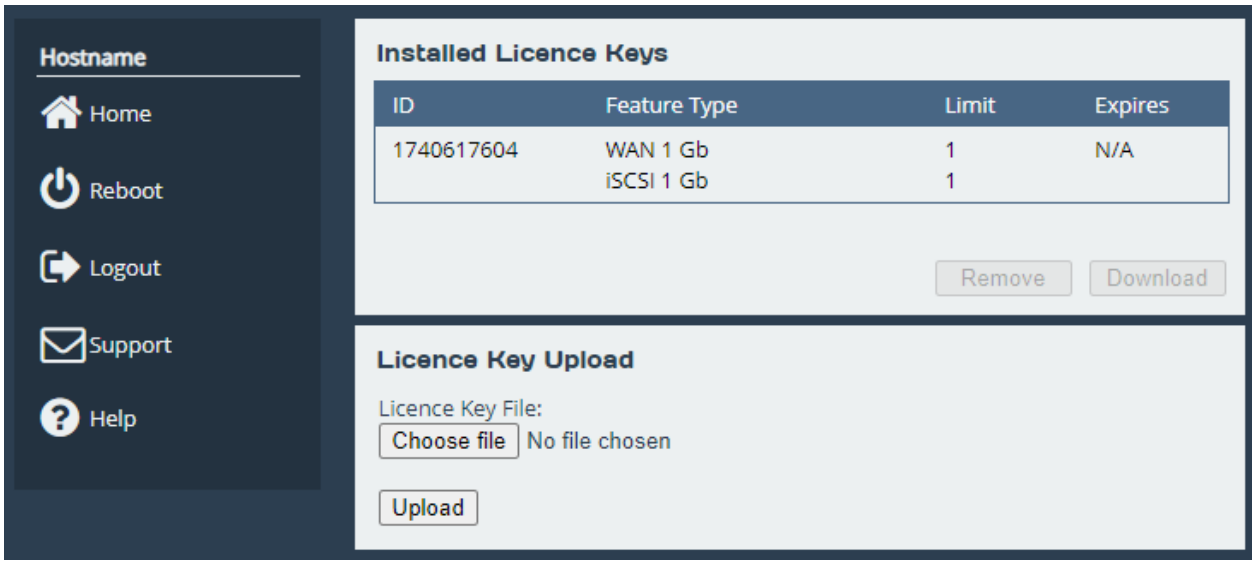
4.2 Installing the Licence Key

The licence key for your device contains the licences for the protocols you can accelerate.

Important: If the licence key is not uploaded you will not be able to add the Port Mappings to the ports later on!

To upload the licence key, first navigate to the Home page using the *Home* button in the sidebar on the left. Next select *Licence Key Management*, then *Browse* and locate the licence key file saved to your local machine.

Select the licence key file and then click *Upload*. You should now see which protocols are licensed for your device in the window.



The device requires a reboot for the licence key to take effect. Select *Reboot* from the menu on the left and restart the device.

4.3 Port Mappings

Provided the matching licences have been purchased and the product has the appropriate cards for the mapping, the following protocols can be added to an available port:

- Fibre Channel - Assigns a port to be a FC Initiator or Target.
- iSCSI - Assigns a port to be an iSCSI Initiator or Target.
- SAS - Assigns a port to be a SAS Initiator.
- Management - Assigns a port to be used for accessing the web interface of the node, as well as SSH and SNMP connections.
- WAN - Assigns a port to be used for connections to other WANrockIT Nodes.

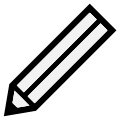
	Important: It is highly recommended that WAN and Management are mapped onto different ports

To edit the mappings, click the Port Mappings icon on the Home page.

4.3.1 Adding a Port Mapping

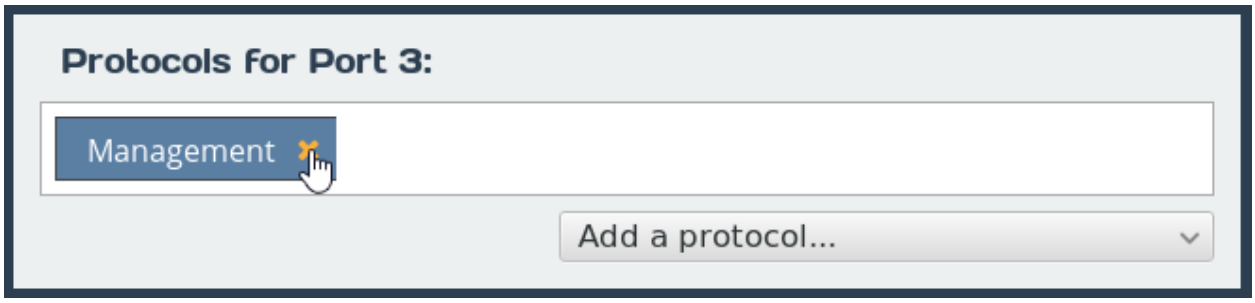
To set up protocols on a network port, select an option from the corresponding *Add a protocol...* drop down box.

When a protocol has been applied to a port, a blue box corresponding to the protocol will appear under the port.

	Note: Hardware appliances will apply some mappings to the PCI slot instead of individual ports, enabling the protocol for all ports on the card in that slot.

4.3.2 Removing a Port Mapping

To remove a mapping, click on the `x` next to the protocol as shown below:



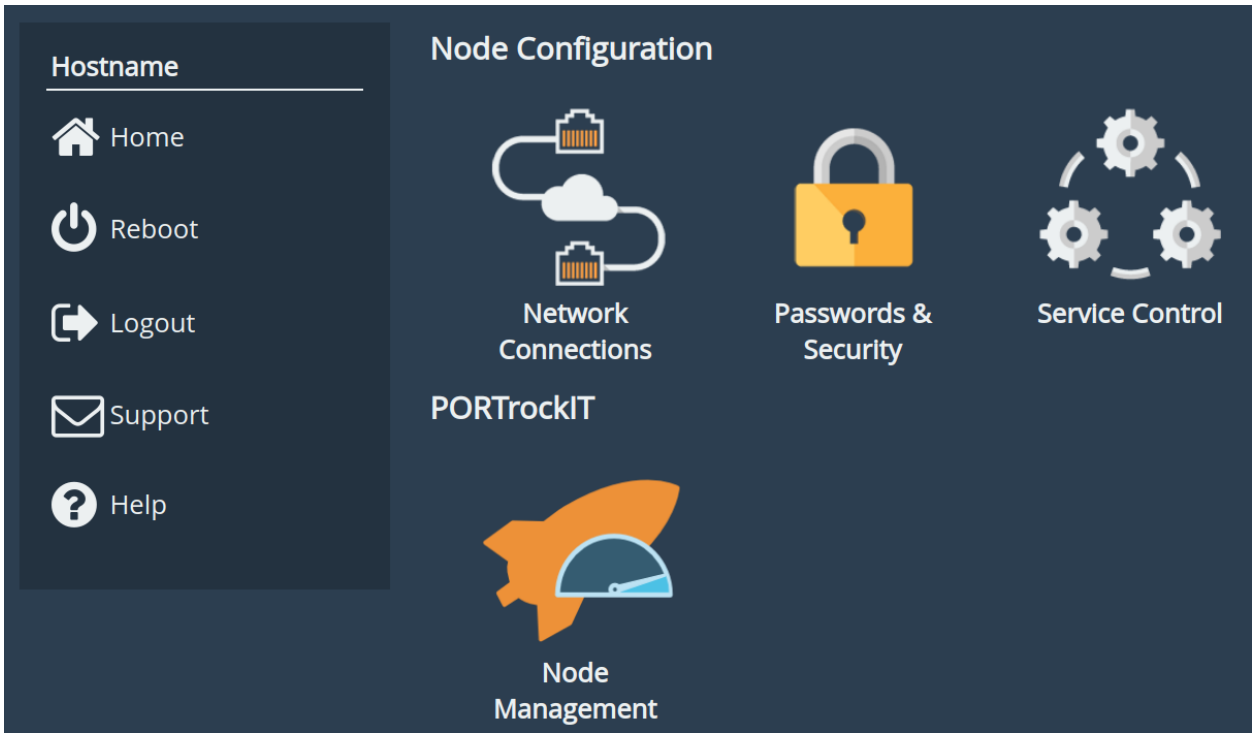
4.3.3 Saving Port Mappings

To save the Port Mapping configuration, press the *Save* button at the bottom of the page. This will return you to the Home screen.

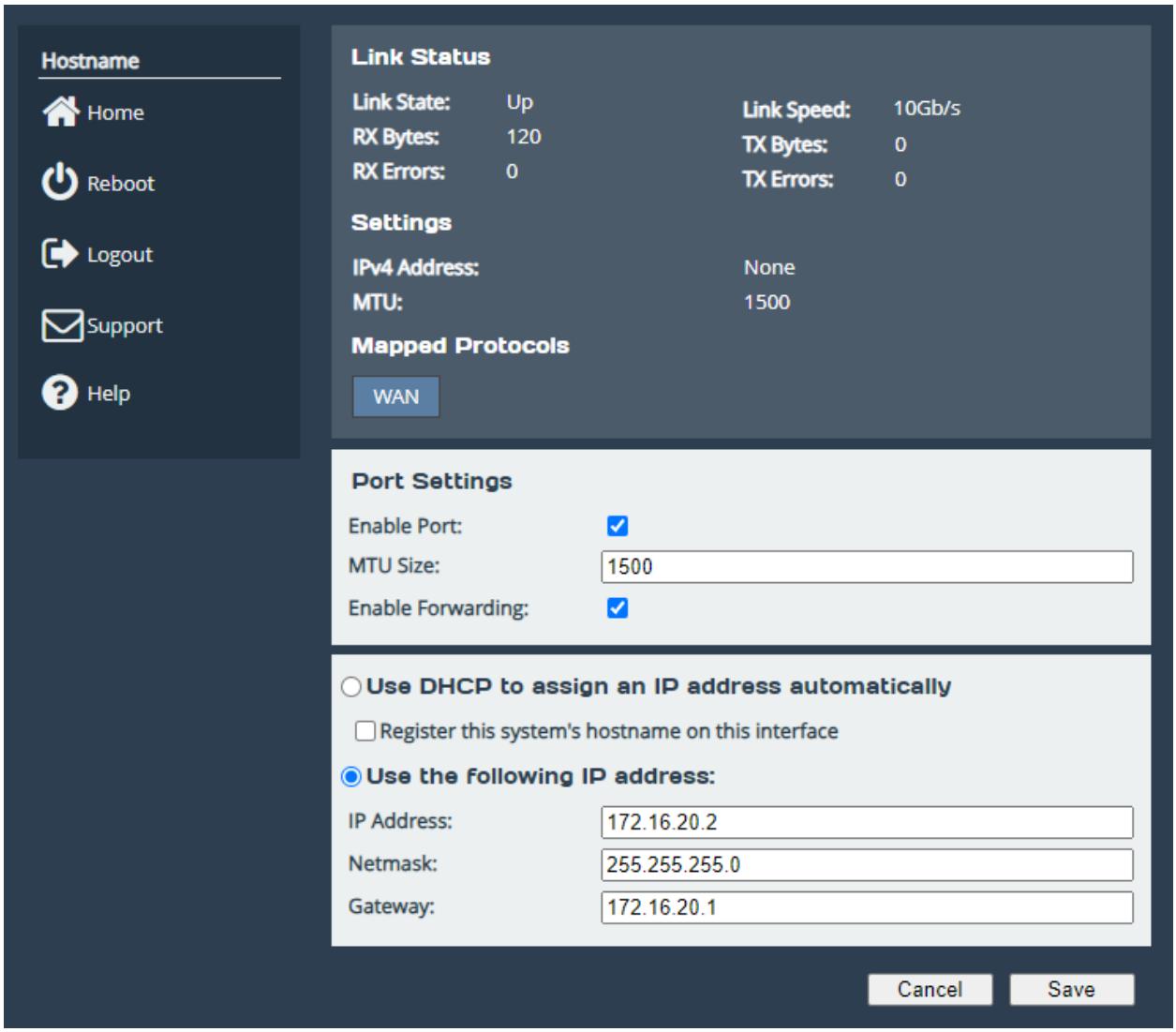
	Important: Saving the Port Mappings configuration will require a reboot to take effect.

4.4 Network Connections

After the device has restarted and you have logged in, you will need to ensure that the WANrockIT Nodes can communicate with each other so that you can create the relationship between them. The way to achieve this will depend on your network configuration.



To assign an IP Address to the WAN interface, visit the Home Page and select *Network Connections*. Next, click on the port you have designated for WAN connectivity. (see Section 4.3 for how to assign a WAN mapping to a port).



The port will initially be disabled. Check the ”Enable Port” box to enable it. Add the desired IP Address, Netmask and Gateway details in the relevant fields then click *Save*. You will see a pop-up that reminds you that the changes will only take effect after a reboot.

4.4.1 Forwarding Unaccelerated Traffic

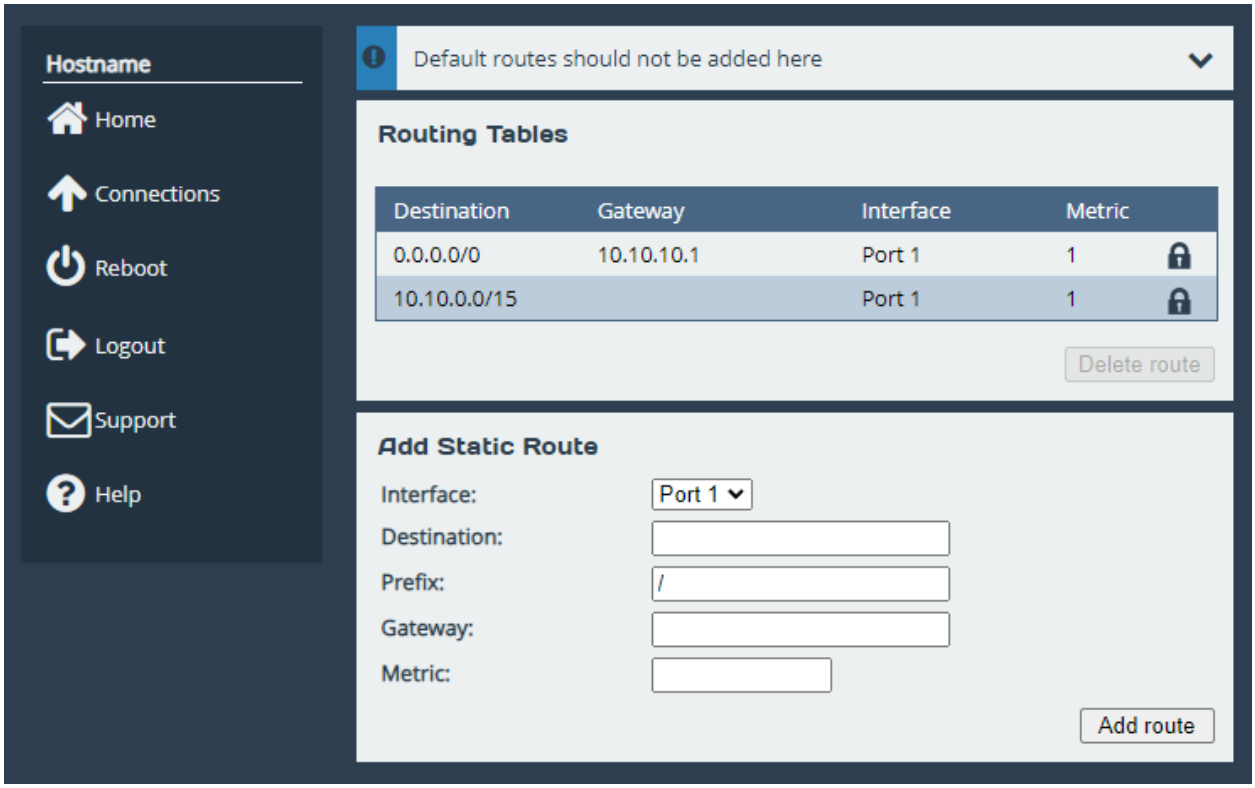
The *Enable Forwarding* feature allows unaccelerated traffic to travel through the WANrockIT. If your network configuration sends all traffic to the WANrockIT regardless of whether it is to be accelerated or not, then you will need to enable this feature.

To do so, return to the *Network Connections* page, and select the WAN port again. Then make sure the *Enable Forwarding* checkbox is ticked, and click *Save*.

4.4.2 Routing Rules (Optional)

If required, you can add additional routing rules to the WANrockIT. First select *Network Connections* from the Home Page. Then select *Network Routing*.

On this page you can add and remove rules from the routing table.



To add a new route, enter the Destination Address and its Prefix in the boxes under the *Add Static Route* section. Next, enter the Gateway that traffic for this destination should be sent via, and select the Interface of the WANrockIT to send traffic out of. Optionally, add a Metric to specify priority.

With all the relevant information entered, click *Add Route* to add the new static route to the routing table.

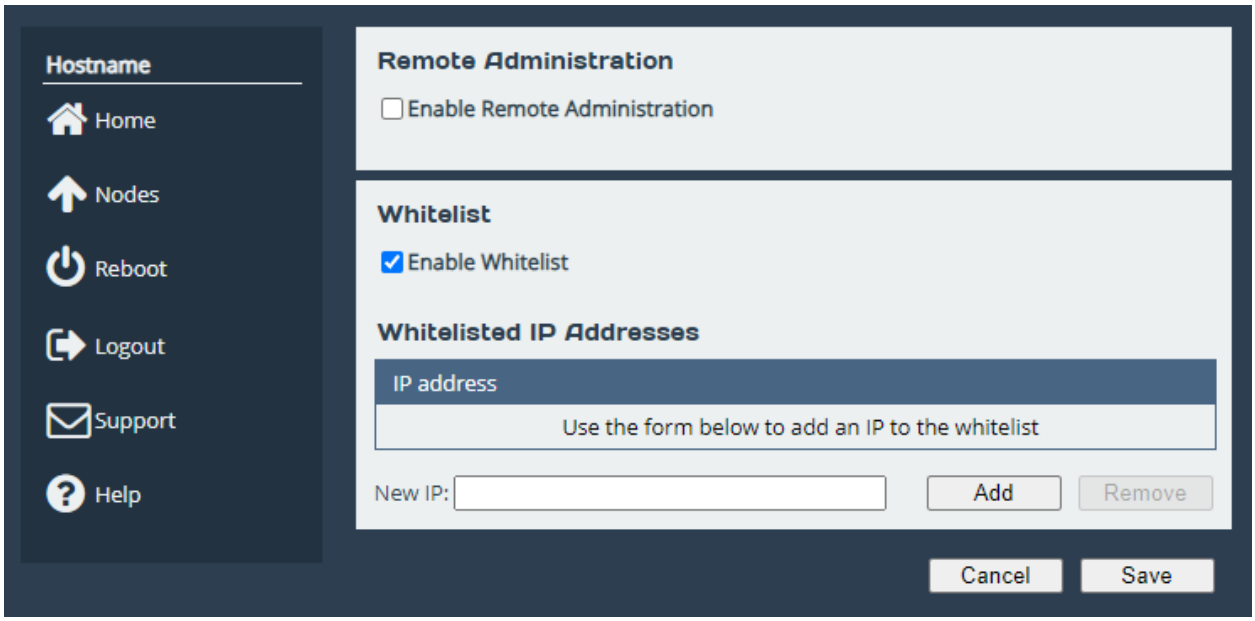
The two routes that are shown in the routing table image above are default routes added during the setup process which is why they have a padlock icon beside them. They cannot be altered or removed.

4.5 Establishing a Link Between Nodes

4.5.1 Configuring the Whitelist

The WANrockIT Node features a whitelist to control whether incoming connections should be accepted or rejected. By default it is enabled, and blocks all incoming connections, so it must be configured before a remote Node can be added.

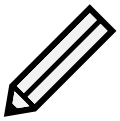
To access the whitelist, click on the *Node Management* icon from the Home screen, then select *Access Control*. The following screen will be presented:



By default, the *Enable Whitelist* checkbox is enabled, which stops incoming WANrockIT connections from IP Addresses not explicitly specified. Clearing the checkbox will instead allow all incoming WANrockIT connections.

To allow a new connection from a remote Node through the whitelist, enter the IP Address of the remote Node's WAN interface in the *New IP* field and click *Add*. If the remote Node is behind a NAT connection, the public IP for the NAT connection should be used. To delete a listing, select the entry in the *Whitelisted IP Addresses* table and click *Remove*.

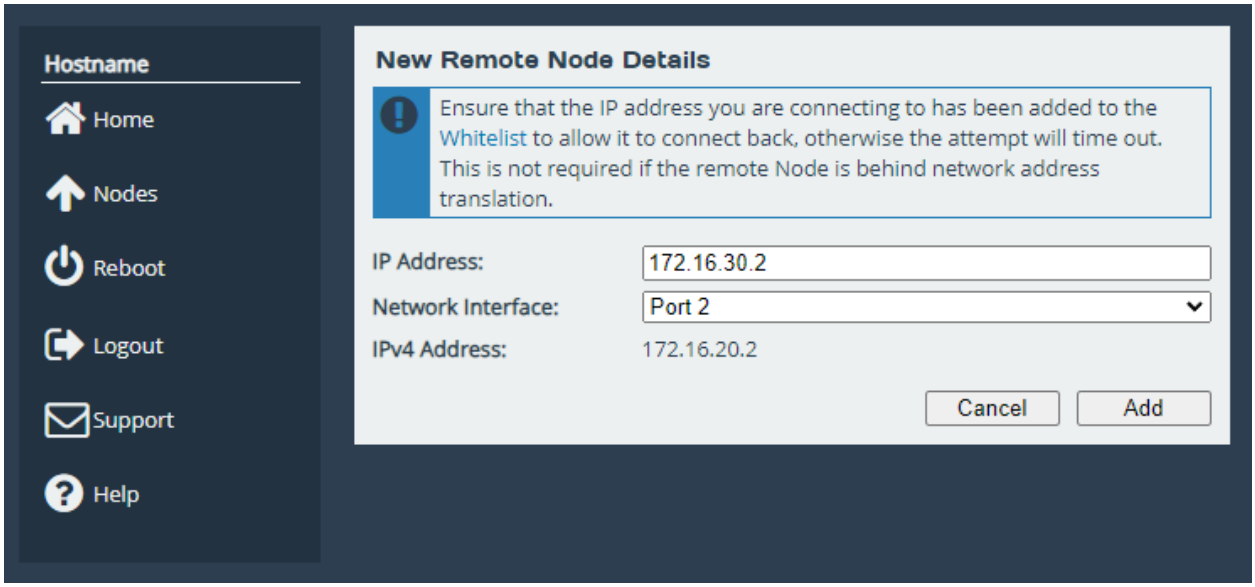
Once all the required IP Addresses have been added, click *Save*. Repeat the steps above on the other Node you wish to connect.

	Note: Multiple addresses can be added; this is required for multiple remote Nodes or multiple paths to a remote Node.

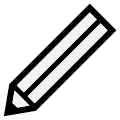
4.5.2 Add a Remote Node

To add a remote Node, click on the *Node Management* icon from the Home Page, then select *Add a Remote Node*.

The following page will allow you to add the remote Node using the IP Address:

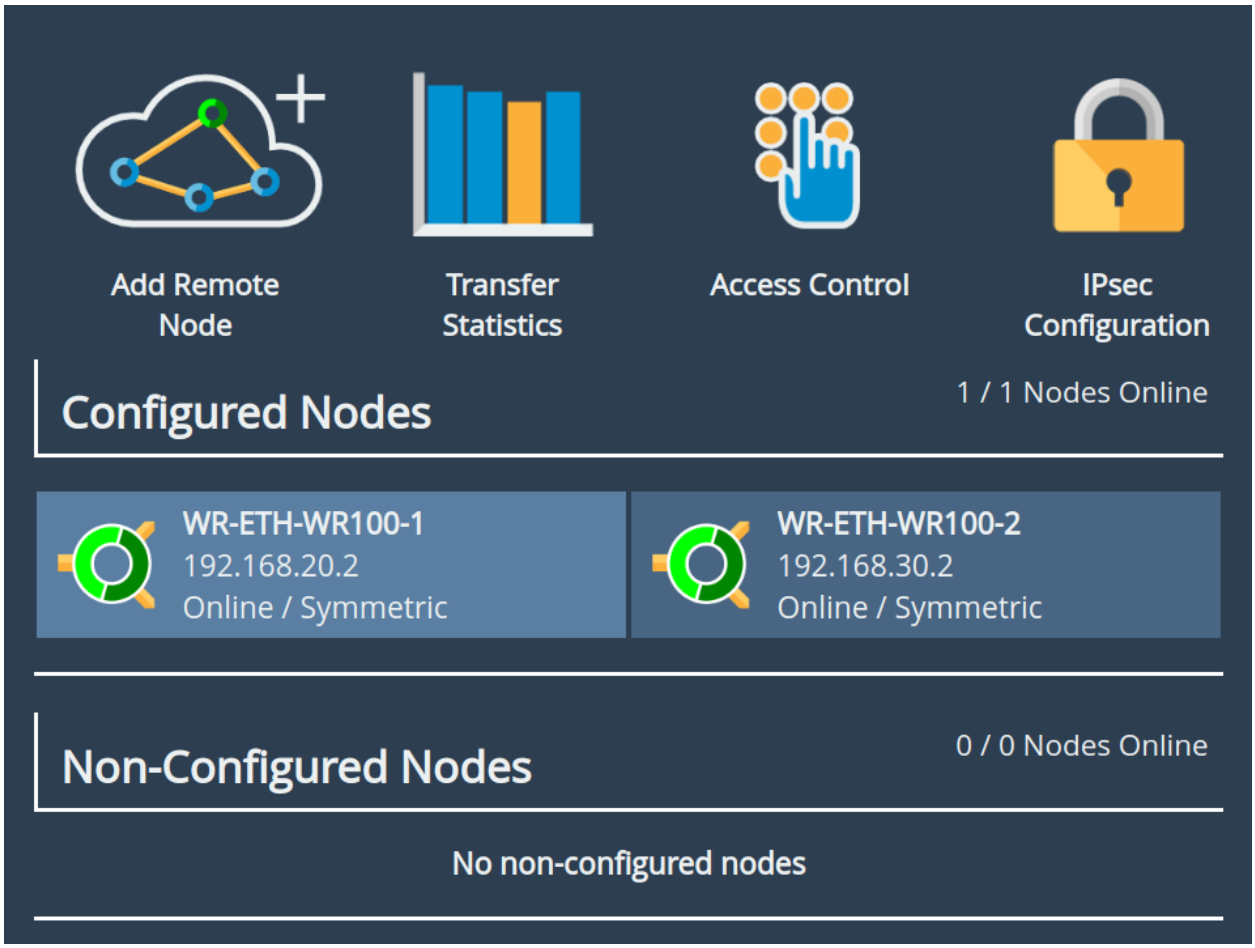


This page allows a remote Node to be added to the list of connected Nodes, so traffic can be accelerated between them. The *IP Address* field takes input of the IP Address of the remote Note. The *Network Interface* drop-down menu allows for the selection of the WAN interface on this Node to be used to initiate the connection to the remote Node (if this Node has WAN mappings on more than one interface).

	Note: See Section 4.3 for information on adding and removing WAN capabilities to network interfaces

To add a remote Node, enter the IP Address of a WAN port on the remote Node which is visible to this Node. If the remote Node is behind a NAT connection, the public IP for the NAT connection should be used.

Then click the *Add* button to add the Node. A dialogue box will appear indicating the connection attempt, and will alert you to its success or failure. Any connection that has been added this way will be restored on reboot until the remote Node is removed. Once added, the remote Node will appear under *Configured Nodes* on the Node Management screen.



To complete the configuration, switch to the GUI of the remote Node, and navigate to the Node Management screen. You should see a Node listed under *Non-Configured Nodes*. Select this, and click *Add* to complete the relationship.

5 Connecting Targets

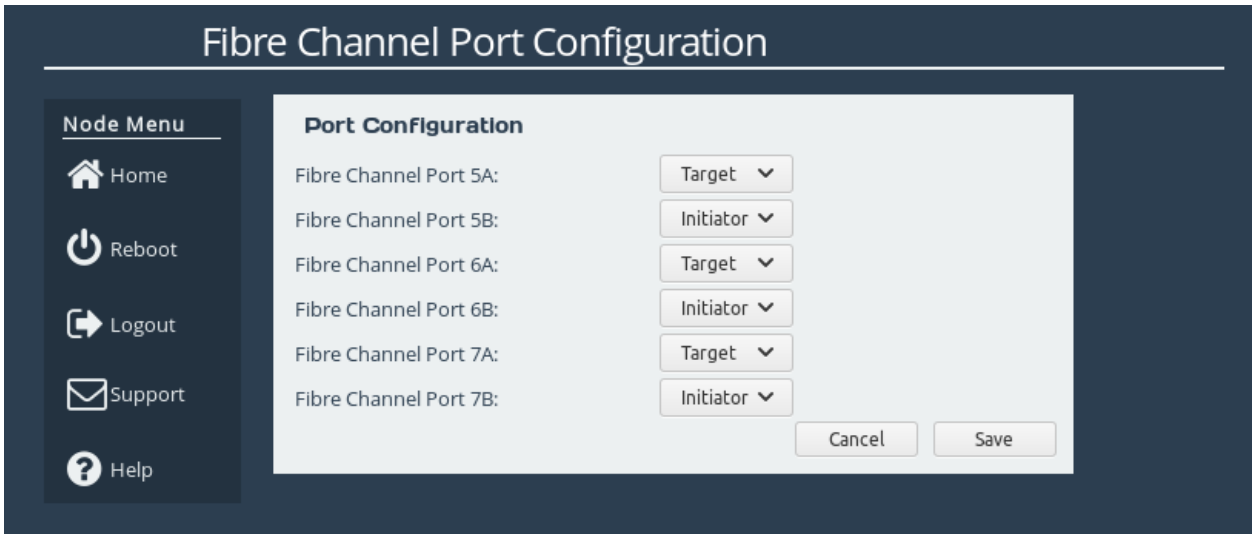
To connect target devices to the WANrockIT, see the relevant section below for the protocol that your targets use. Perform these steps on the WANrockIT Node on the same side of the WAN as your targets.

⚠	Warning: Ensure the bandwidth rating of your cables meets or exceeds the bandwidth of your network cards; otherwise, the transfer speed will be limited.

5.1 Fibre Channel

To connect Fibre Channel targets to the WANrockIT, you must designate an FC port as an initiator. To do this, from the Home screen of the web interface, select the *FC Port Configuration* icon in the *Devices and Protocols* section.

You will see the following page:



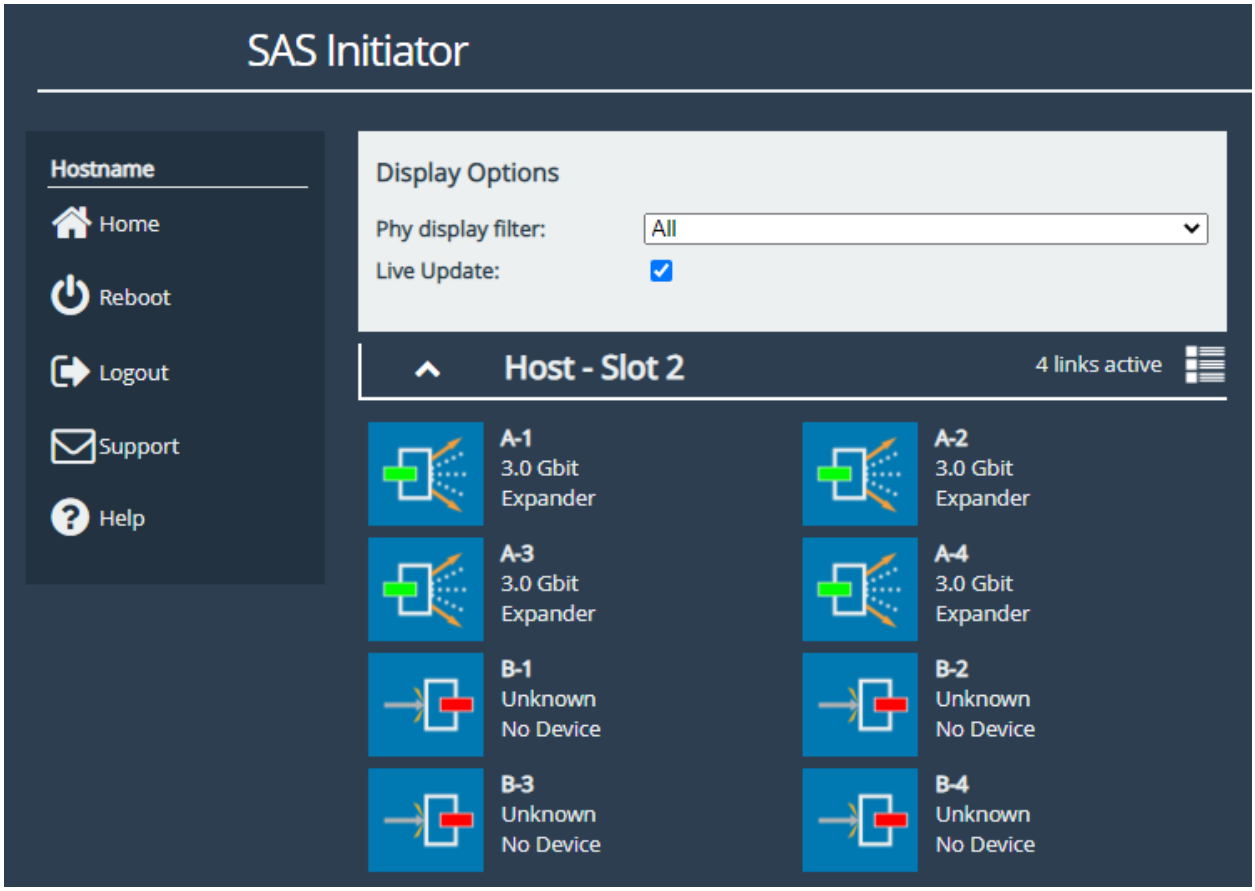
To change a port between a target or initiator use the dropdown box next to the desired port and click on the *Save* button. Clicking *Cancel* will not save any changes made on the page.

Fibre Channel targets are automatically detected once a Fibre Channel cable is connected between the WANrockIT and your target.

5.2 SAS

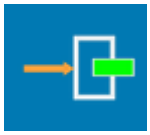
SAS targets are automatically detected once a SAS cable is connected between the WANrockIT and your target. To view connected devices, select the *SAS Initiator* icon from the Home screen of the web interface.

You will see the following page:

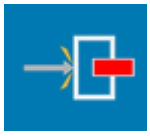


This page displays physical SAS cards (or “hosts”) contained within your unit, and any devices to which they are connected (such as disk drives or expanders). A host will contain four phys for every physical port on the card.

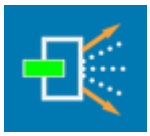
The state of each phy is represented by the icon:



End Device A device is connected



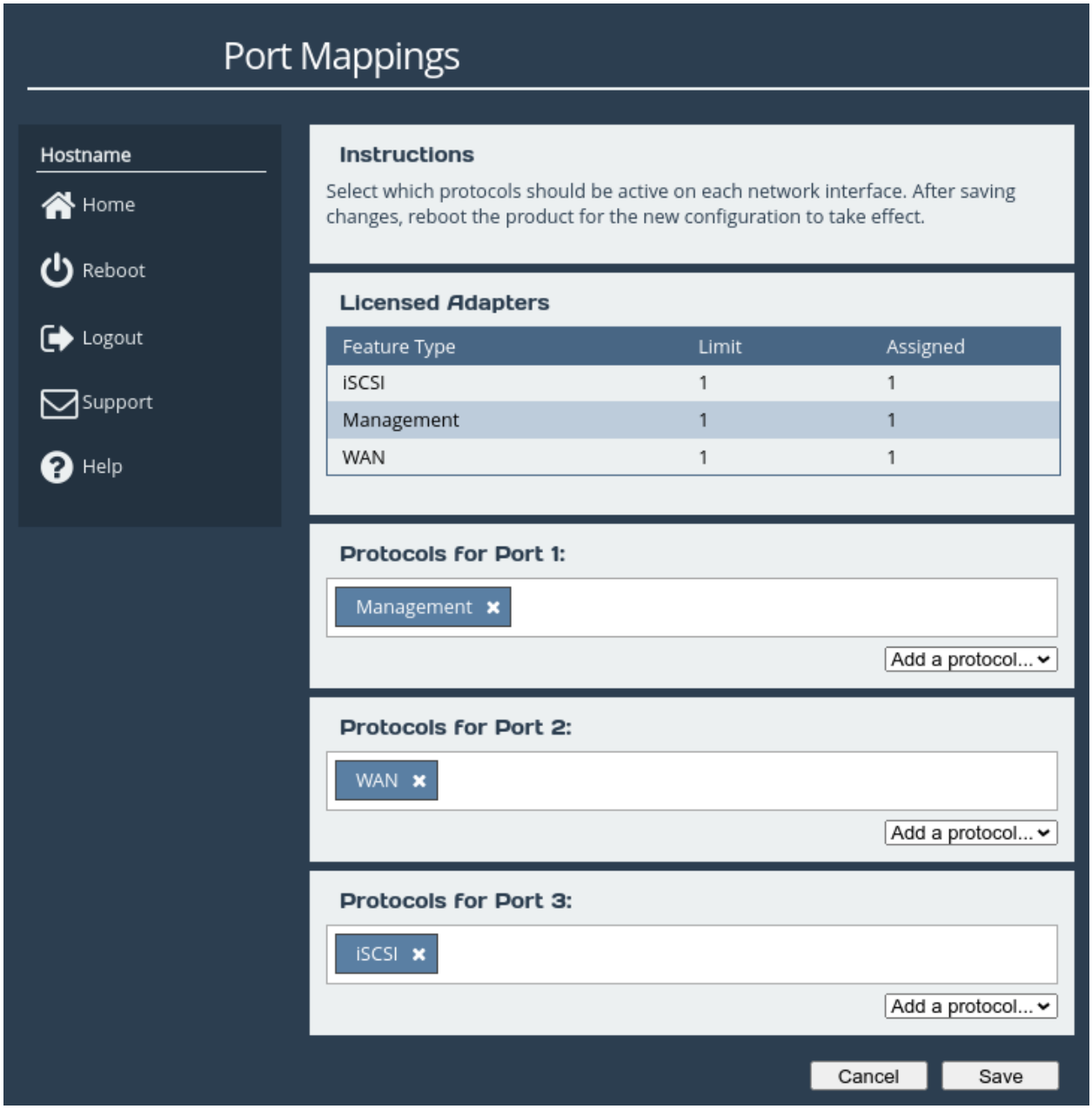
No Device No device is connected



Expander Device An expander is connected

Clicking on a phy, either under a host or an expander, will lead to a status page showing further information about that phy.

5.3 iSCSI

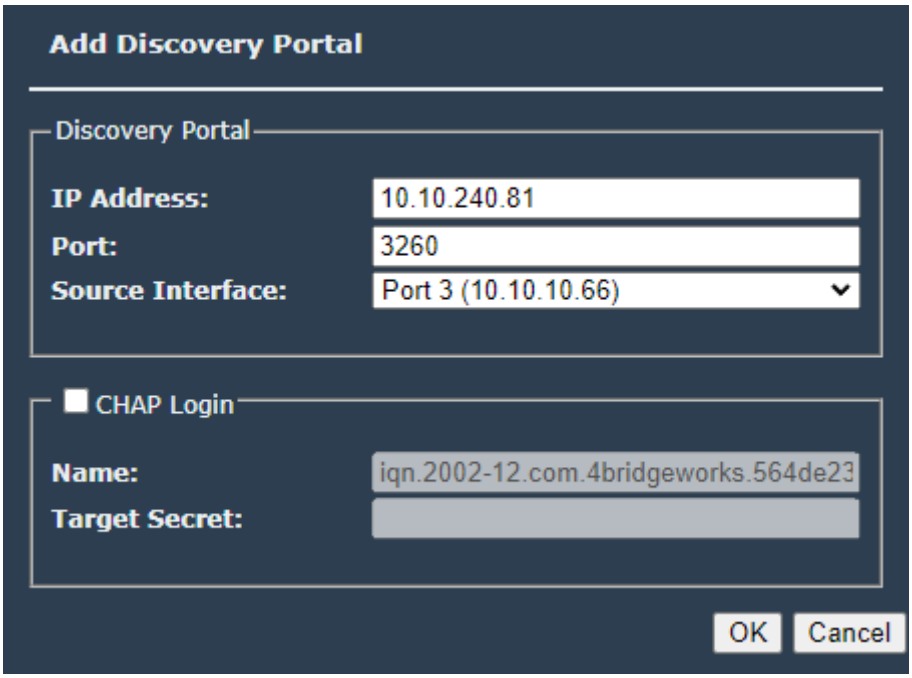


To connect to iSCSI Targets, you must assign a port to be an iSCSI Initiator. From the Home screen, select the Port Mappings page. Using the dropdown under your chosen interface, add an iSCSI mapping, then click Save. A reboot will be required for the mapping to take effect.

Before discovering targets, you may need to add the Node's IQN to your target's access control list. To do this, navigate to the Home screen of the node and open the System Information page by clicking on the corresponding icon. The iSCSI IQN will be displayed under Node and Firmware Details.

Next, discover the targets. Return to the Home page and click on the *iSCSI Initiator* icon under the *Devices and Protocols* section.

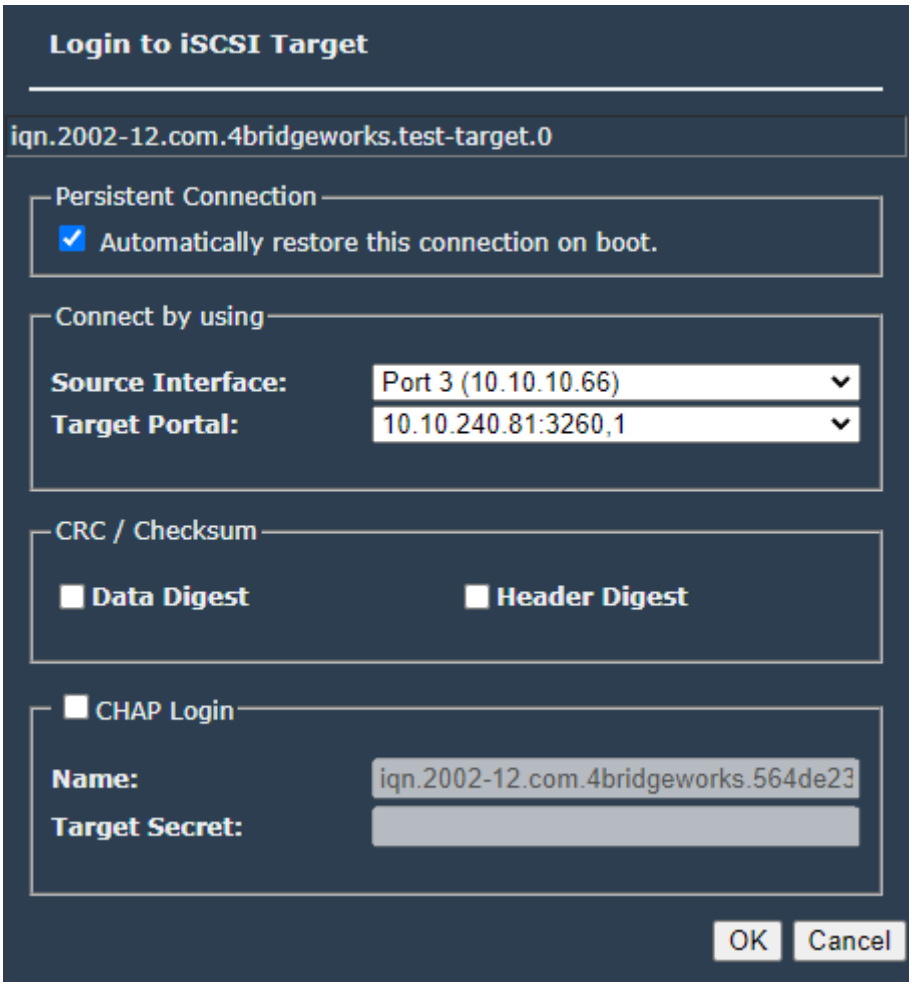
Under the *Discovery Target Portal* subsection, click the *Add* button. The following dialog will appear:



Enter the IP address of the iSCSI target portal in the *IP Address* field. The default port number assigned to iSCSI is 3260. If you have configured the iSCSI target to use a different port number, enter this number in the Port field. If iSCSI is mapped to more than one interface, ensure the *Source Interface* dropdown has the correct interface selected to perform the discovery.

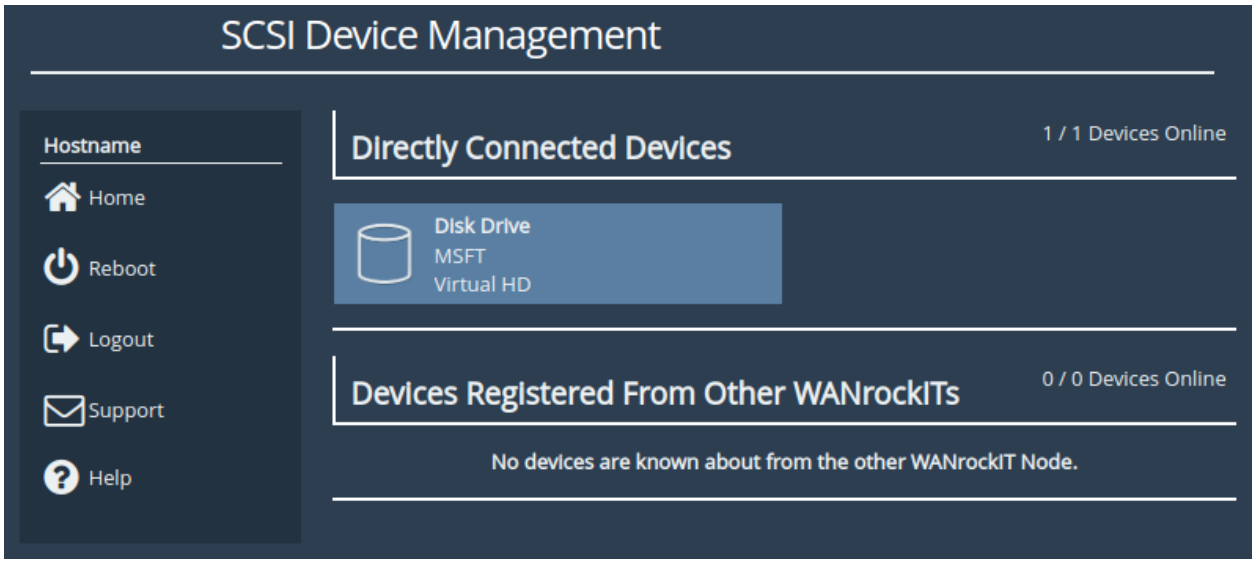
In this example, CHAP authentication is not required. More detailed information on CHAP authentication can be found within the WANrockIT User Manual, please refer to Chapter 8: Useful Links.

Now you are ready to log in to a target. Select the required target under the *Targets* section and click the *Log On* button. You will be presented with the following screen.



Again, enter your CHAP details if necessary. Click the *OK* button to log on, changing the status of the target from *Inactive* to *Connected*. If the *Persistent Connection* checkbox was enabled, it will be listed in the Persistent Targets subsection, and will be logged on to after each reboot.

To verify that the login was successful, from the Home screen navigate to the *SCSI Device Management* page. The devices from the iSCSI target are shown in the list of *Directly Connected Devices*, as shown below. These devices are now presentable over a WANrockIT connection.



6 Connecting Initiators

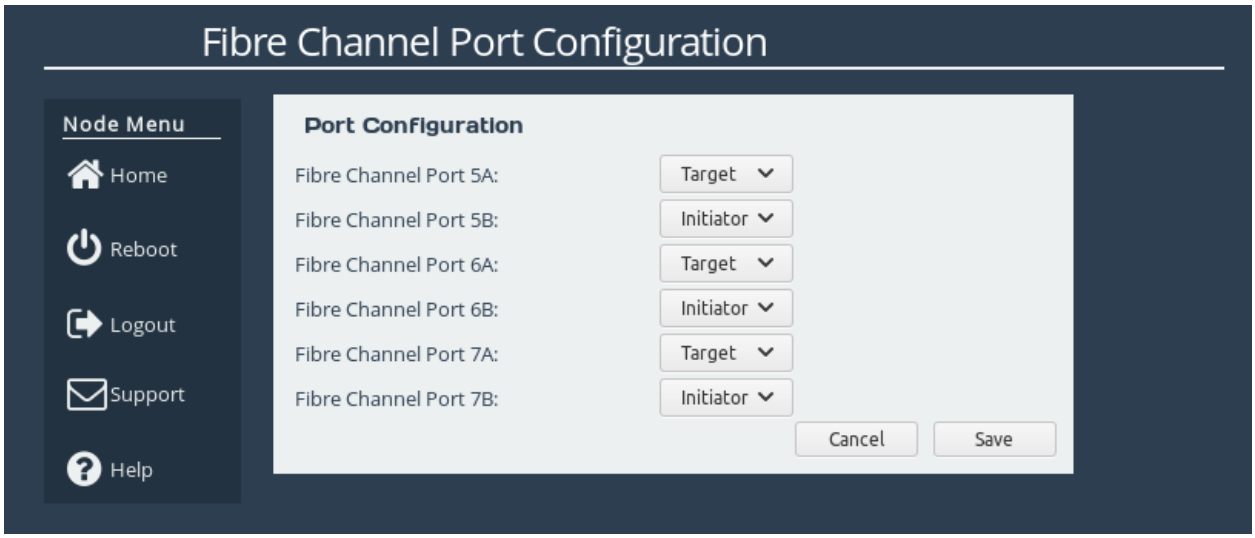
To connect an initiator to the WANrockIT and any attached targets, follow the steps in the section below corresponding to the protocol used by your initiator. Perform these steps on the WANrockIT Node on the same side of the WAN as your initiator.

⚠	Warning: Ensure the bandwidth rating of your cables meets or exceeds the bandwidth of your network cards; otherwise, the transfer speed will be limited.

6.1 Fibre Channel

To connect a Fibre Channel Initiator to your WANrockIT, you must designate a port to be an FC Target. To do this, from the Home screen of the web interface, select the *FC Port Configuration* icon in the *Devices and Protocols* section.

You will see the following page:



To change a port between a target or initiator use the dropdown box next to the desired port and click on the *Save* button. Clicking *Cancel* will not save any changes made on the page.

Once a port is designated as a target, you can view its status from the FC Target page. Green icons indicate ports which are up, and red icons indicate that the port is down.

To list which hosts are connected to the WANrockIT, select a port under *Fibre Channel Interfaces*,

then select the icon labelled *View all the Fibre Channel initiators which have logged into this target port*. The following will then be displayed:

6.2 iSCSI

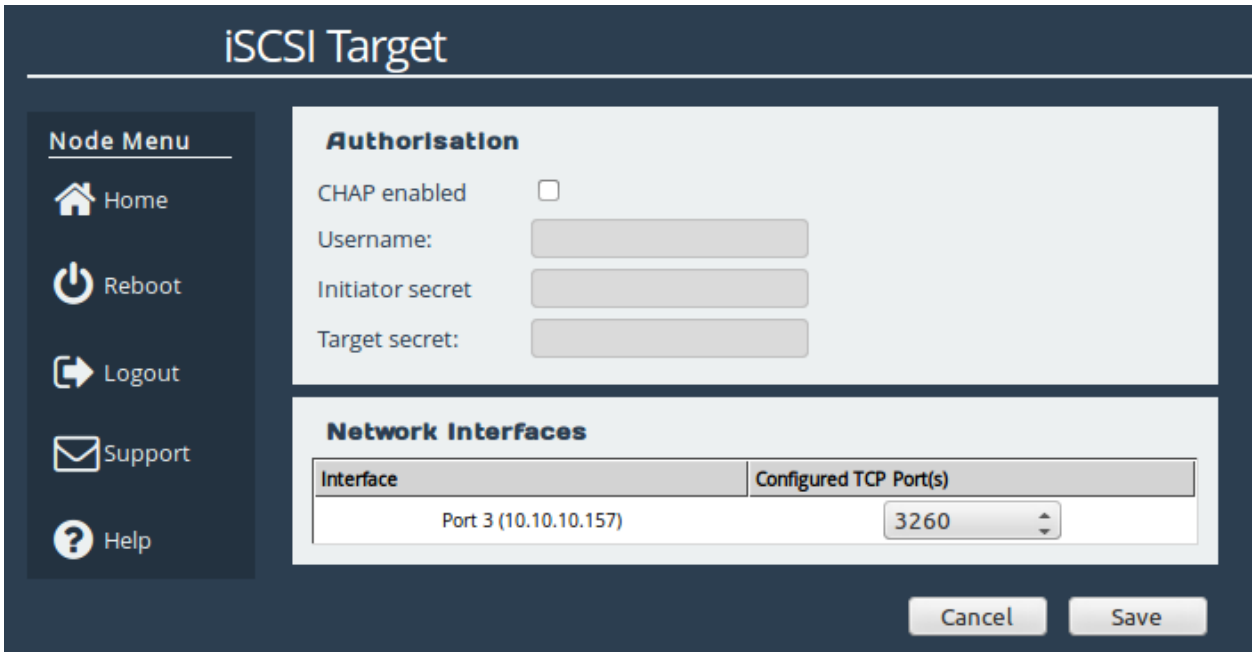
To connect an iSCSI Initiator to your WANrockIT, you must assign a port to be an iSCSI Target. From the Home screen, select the *Port Mappings* page.

Using the dropdown under your chosen interface, add an iSCSI mapping, then click *Save*. A reboot will be required for the mapping to take effect.

You can now see devices presented from the other WANrockIT Node by returning to the Home page and selecting *SCSI Device Management*. These devices will now be available for iSCSI Target connection to the local Node.

If your SCSI devices are not appearing, open the GUI on your local Node, select *Node Management*, then choose the icon for the remote node. Select the *SCSI Devices* icon and click *Refresh Devices*.

To configure iSCSI Target settings, including enabling CHAP authentication, select the *iSCSI Target* icon from the Home page. Here you can also view the IP address and port number to use when initiating an iSCSI connection to the WANrockIT.


iSCSI Target
Node Menu
Home
Reboot
Logout
Support
Help
Authorisation
CHAP enabled
Username:
Initiator secret
Target secret:
Network Interfaces
Interface
Configured TCP Port(s)
Port 3 (10.10.10.157)
3260
Cancel
Save

7 Additional Features

Congratulations on finishing the basic setup of your WANrockIT. Consider browsing the manuals for a complete list of capabilities (available at https://support.4bridgeworks.com/documents/manuals/).

The following sections are recommended starting points for some useful additional features.

7.1 IPsec Encryption

IPsec can be enabled to encrypt data and control messages sent between your WANrockIT Nodes.

To enable IPsec, see the IPsec section of the WANrockIT Software Manual.

7.2 Remote Access

Remote Access allows administration of remote WANrockIT Nodes from your local Node over a secure tunnel.

To enable Access Control, see the Access Control section of the WANrockIT Software Manual.

7.3 iSNS

iSNS enables automatic discovery of iSCSI devices by your WANrockIT.

To enable iSNS, see the Internet Storage Name Service (iSNS) section of the WANrockIT Software Manual.

8 Useful Links

Further documentation and support is available through our website: https://support.4bridgeworks.com/

If your question is not answered in our documentation, please submit a ticket: https://support.4bridgeworks.com/contact/