Configuration Guide for the Linksys NAT box

EK-GSNAT-IN.A01

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Table of Contents

List of Figures

About This Document

This document describes how to install and configure the Linksys RV082 (p/n 30-10104-03) NAT box for ES47/ES80/GS1280 AlphaServers. It provides information on the following topics:

- An overview of the NAT box
- Installing the NAT box in AlphaServer ES47, ES80, and GS1280 systems
- Configuring the NAT box
- Removing the NAT box from the AlphaServers

Intended Audience

This document is intended for system and network administrators responsible for installing, configuring, and managing AlphaServer ES47/ES80/GS1280 systems. Administrators are expected to have knowledge of operating system concepts, commands, and configuration. It is helpful to have knowledge of TCP/IP networking concepts and network configuration.

Related Information

The following Web sites provide additional information and downloads:

- AlphaServer documentation:

  http://docs.hp.com

- Information about the AlphaServer Management Station:

  ftp://ftp.digital.com/pub/Digital/Alpha/firmware/interim/ams/index.html

- AlphaServer firmware:

  http://ftp.digital.com/pub/Digital/Alpha/firmware

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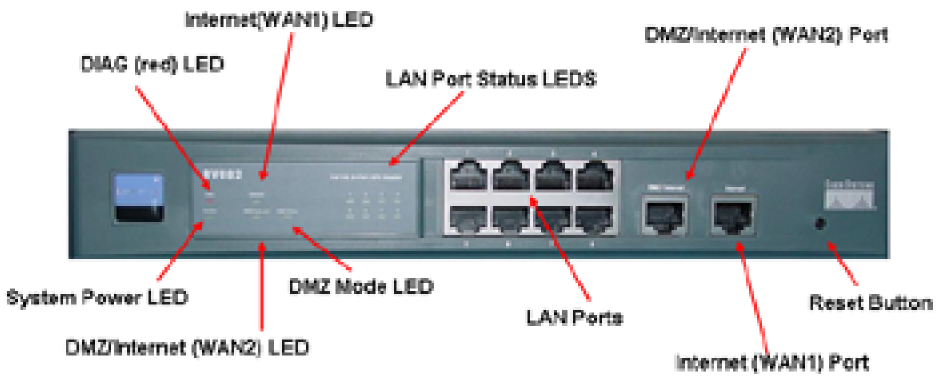
1 Overview

The NAT (Network Address Translation) box, or router, is the hardware bridge between two local area networks (LANs). NAT boxes connect your AlphaServer ES47, ES80, or GS1280 system's internal LAN to a multi-server LAN or a corporate LAN.

Every ES47, ES80, and GS1280 platform is configured with its own management LAN using the same IP subnet, 10.X.X.X. The NAT box is an address translator that enables you to configure a different set of IP addresses for the platform so users on the corporate network can access the platform's management LAN. The NAT box translates the IP addresses you configure into the platform's internal set of IP addresses.

Figure 1-1 shows the components of the Linksys RV082 NAT box.

Figure 1-1 NAT box Components



The following list describes these components:

- DIAG LED: Flashes red when powering on the box or updating firmware. During a reset it will blink slow-steady then fast-steady.
- SYSTEM power LED: Comes on when power is applied.
- Internet LED: Indicates link and activity on the Internet (WAN1) port. This port is utilized for external connections to the server management infrastructure or the AlphaServer.
- DMZ/Internet LED: Indicates link and activity on the DMZ internet (WAN2) port. Currently unused on AlphaServer systems.
- DMZ Mode LED: Unused in this configuration.
- LAN Port LEDS: Indicates link and activity on LAN ports. Used to indicate good MBM or PBM connections.
- LAN Ports: Used to connect MBMs and PBM’s within the same cabinet and any links to other cabinets within the same AlphaServer system
- DMZ/Internet Port: Also known as WAN2 in setup screens. Currently not used on AlphaServer.
- Internet Port: Also known as WAN1 in setup screens. Used to connect the AlphaServer to external Server Management Station such as an AlphaServer Management Station (AMS) station.
- Reset button: When pressed quickly will do a soft boot or restart of the NAT box firmware. When pressed for several seconds, will restore factory (Linksys) settings and will require reconfiguration.

2 Installing the NAT Box

The NAT box is located in the top of the rails in an AlphaServer ES47, ES80, and GS1280 system cabinet. To install your Linksys NAT box perform the following steps:

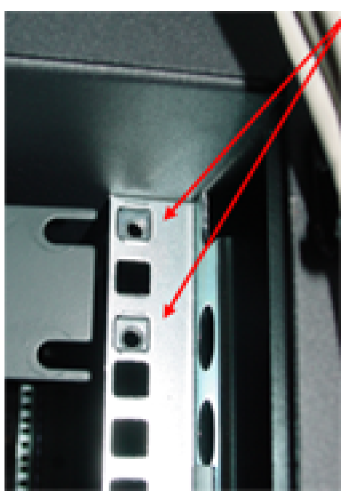
1. Attach the brackets that come with the NAT box to the two sides. Orientate the brackets as shown in Figure 2-1 to prevent interference with any installed storage shelf. Use the four screws supplied with the box for each side.

   Figure 2-1 Connecting the Brackets

2. Insert cagenuts in holes 1 and 3 (counting from the top) on both side rails from rear side of cabinet. See Figure 2-2.

   Figure 2-2 Inserting the Cagenuts

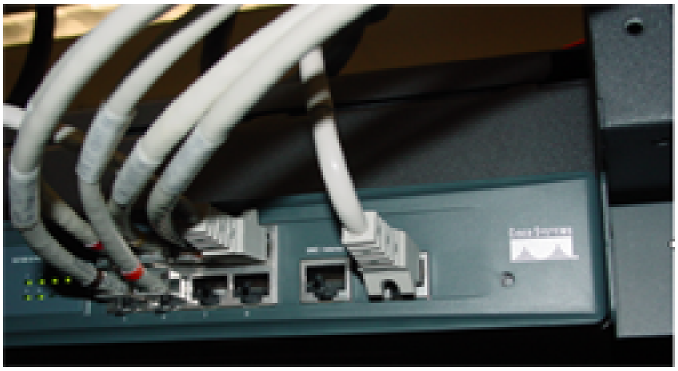
   

3. Mount the NAT box with the attached brackets to the rear rails so that the NAT box port connections and status indicators face the rear of the cabinet.

   If the cabinet contains more than one individual ES47 or ES80 system, additional NAT boxes are required. In this case, do not connect the NAT boxes together. Check the *HP AlphaServer/AlphaStation ES47 Tower, AlphaServer ES47, and AlphaServer ES80 Systems QuickSpecs* for the supported configuration and the configuration rules.

4. Connect the RJ45 Ethernet cables from the MBMs and PBMs to any of the LAN ports (Figure 2-3). The order of connection is not important.

Figure 2-3 Connecting MBMs and PBMs



Only one WAN connection is needed per system. Use the WAN1 port on the NAT Box in cabinet #0. The WAN1 port is labeled Internet and can be routed to either the private server management or corporate LANs.

5. Run the power cord from the PDU up along the left rear side rail and plug it into the power receptacle on the rear side of the NAT box (Figure 2-4). There is no On-Off switch; the NAT box will turn on when current is applied.

Figure 2-4 Power Cord

3 Configuring the NAT box

The following sections describe the steps needed to connect and configure a NAT box on an AlphaServer ES47, ES80, or GS1280 system.

Connecting A Laptop or PC to the NAT box

You access the NAT box configuration program using a laptop computer. The IP address you use to do this depends on whether the NAT box is new or if it has previously been configured. The following table lists these settings, which you will use in the steps that follow.

NOTE: You can also use a desktop PC instead of a laptop. This chapter uses a laptop for its examples.

	Linksys NAT Box Factory Default	**HP Configured NAT Box**
Web Browser address	http://192.168.1.1	http://10.253.0.2
User name/password	admin/admin	admin/marvel
	Example Setting for Laptop	**Example Setting for Laptop**
Static IP	192.168.1.10	10.253.0.10
Subnet mask	255.255.255.0	255.255.255.0

The following steps describe how to attach a laptop to the NAT box and begin the configuration process:

1. Temporarily set a static IP address and subnet mask for the laptop. The IP address you specify for the laptop must by different from the NAT box browser address.

   Depending on your browser's settings, you may have to disable any proxy settings for the browser.
2. Connect the laptop to any unused LAN port.
3. Type the appropriate address in your Web browser to access the configuration program's Login window.
4. Enter the appropriate user name and password. The initial status screen will appear.

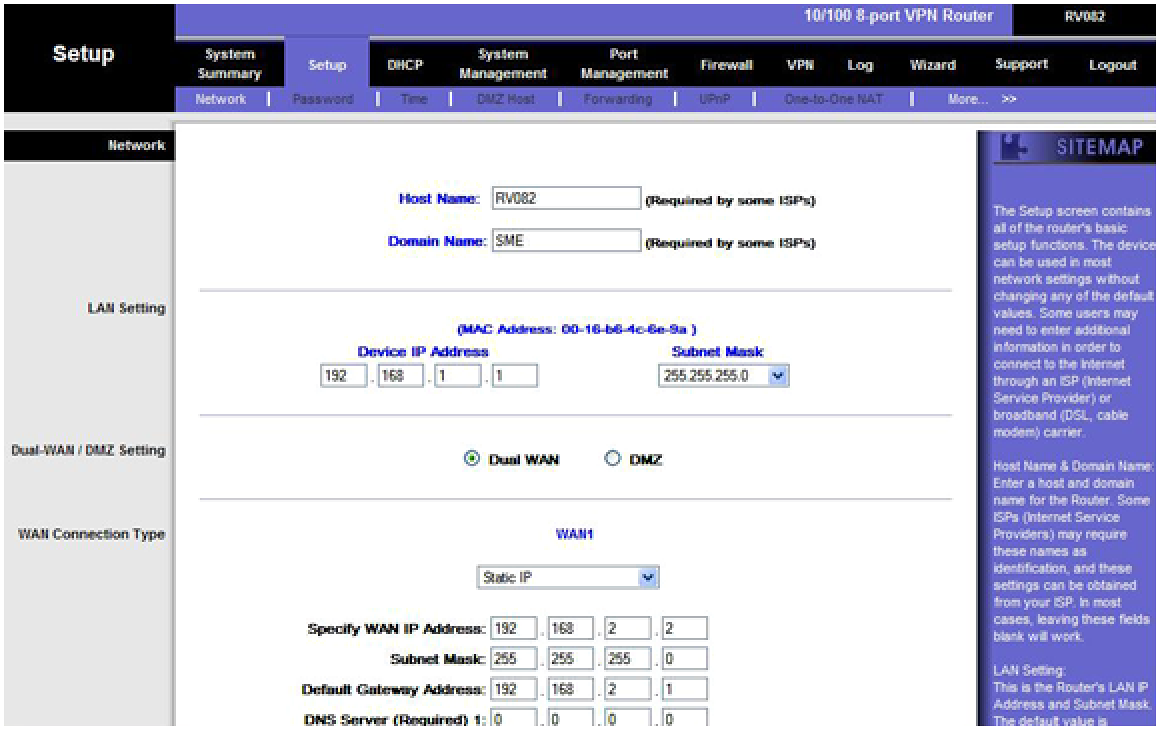
Configuration Steps

The following sections will guide you through the configuration process.

Step 1: Set up the WAN Information

1. In the Setup screen, select the Setup tab and then the Networks submenu (Figure 3-1).

Figure 3-1 Network Window



2. In the WAN Connection Type frame, select Static IP in the drop-down box for the WAN1 connection.
3. Enter a valid WAN IP address (for example, 192.168.2.1), a subnet mask, and a gateway address for the WAN1 connection. DNS information is optional.

NOTE: HP recommends a "private" LAN for server management access. The gateway can then be the address of an AlphaServer Management Station (AMS) or similar management station. Placing the NAT box's WAN connection directly on a corporate LAN would allow unrestricted access and control of the AlphaServer and is not recommended.

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4. Click on Save Settings.

Step 2: Change the Password

You must change the default password (admin) to deactivate the firewall. To change the password:

1. Go to the Setup screen by pressing the Setup tab and then the Password submenu.
2. Replace the default password "admin" with the password "marvel" and confirm the new password.
3. Click on Save Settings.

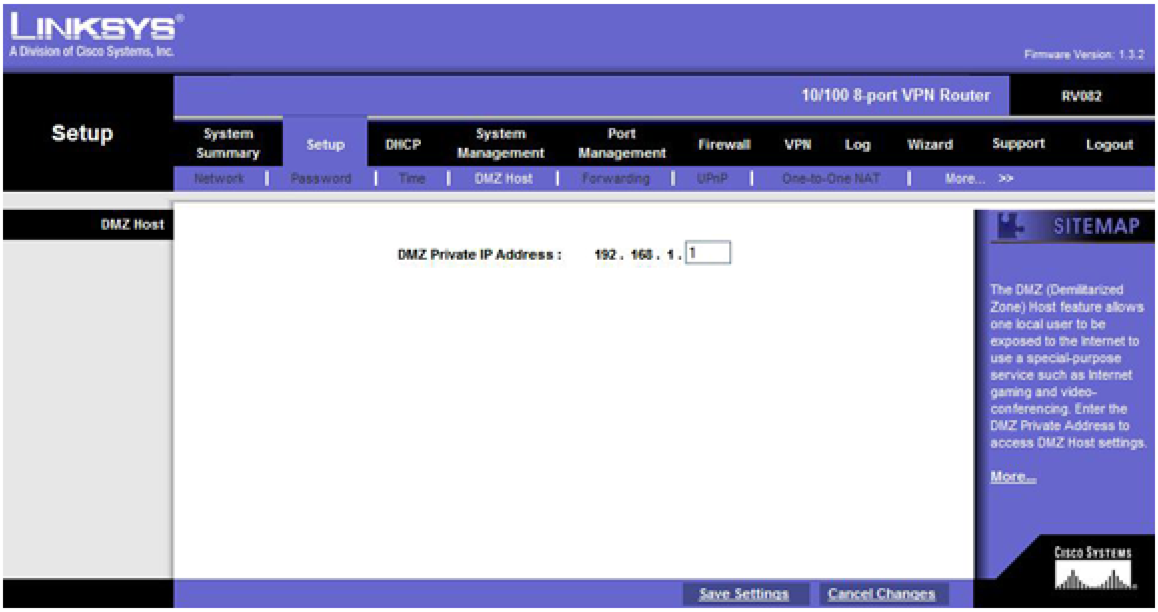
Step 3: Set the Time (Optional)

You can set the time for the NAT box by using the NTP (if the Time Server address is known) or you can set it manually in the Time tab. The NAT box uses the time setting only for internal logs. However, it can be helpful for troubleshooting access through the NAT box.

Step 4: Set up the DMZ

1. Select the DMZ Host submenu of the Setup tab (Figure 3-2).
2. Enter a "1" in the last octet box for the DMZ Private IP address. (The first three octets will automatically change to 10.253.0. on the final step.)
3. Click on Save Settings.

Figure 3-2 Setting the DMZ



Step 5: Disable DHCP

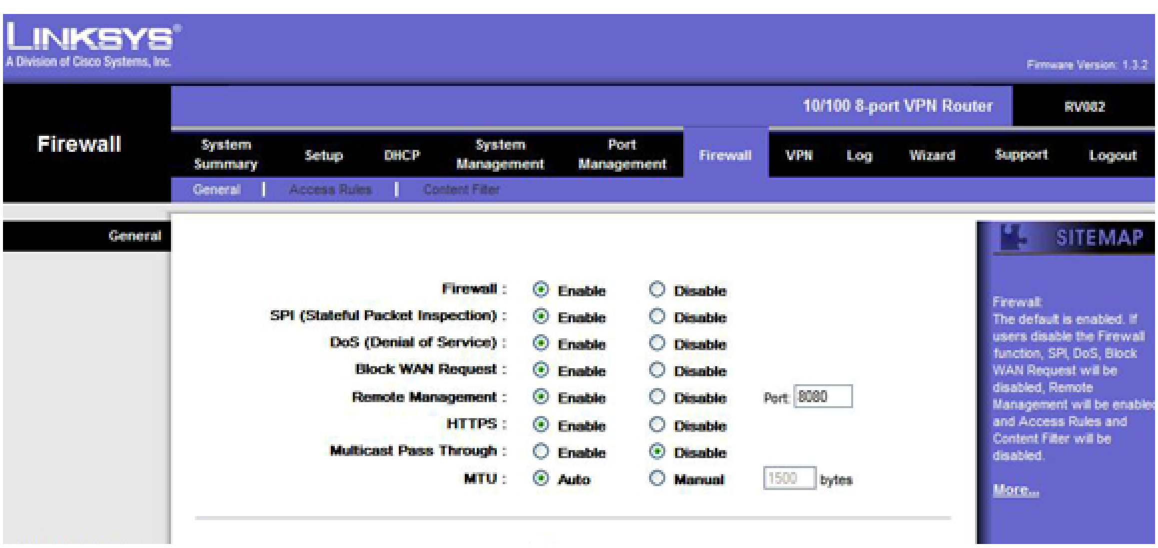
1. Select the DHCP tab.
2. Disable the DHCP server by deselecting the Enable DHCP Server box.
3. Click on Save Settings.

Step 6: Set up Remote Management (Recommended)

The firewall must be enabled to set up remote management. Ensure that it is before performing the following steps:

1. Select the Firewall tab (Figure 3-3).
2. Select the Enable radio button for Remote Management.
3. Change the Port from 80 to 8080.
4. Click on Save Settings.

Figure 3-3 Setting Remote Management



Step 7: Disable the Firewall

To disable the firewall:

1. Select the Firewall tab.
2. Select the Disable radio button for Firewall.
3. Click on Save Settings.

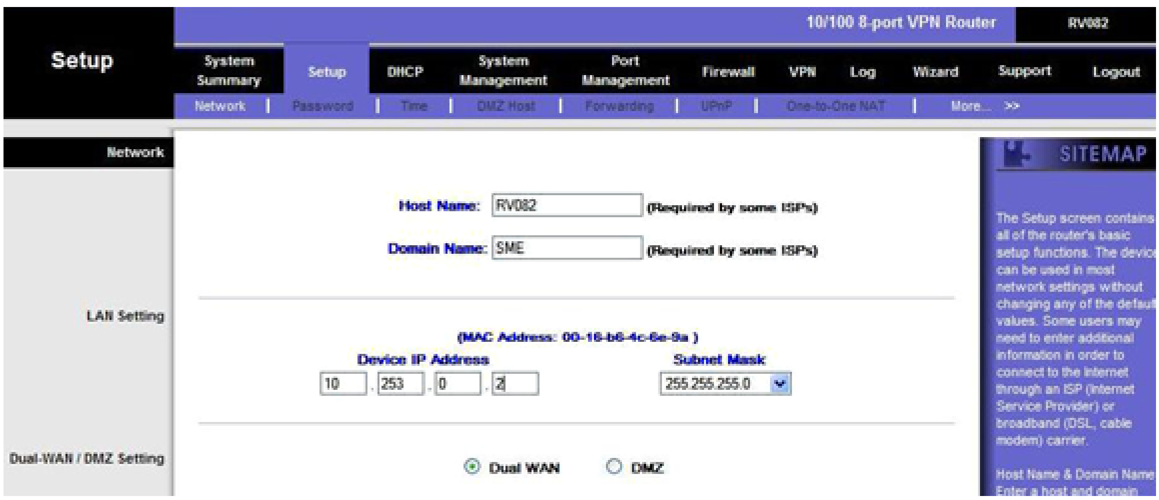
Step 8: Set the LAN Address

NOTE: After saving the settings in this step, the laptop will be automatically disconnect from the NAT box due to the change of the LAN address. Therefore, it is important that you verify all settings in the previous steps before proceeding. The most common problem is not saving the settings on each step

To set the LAN address:

1. In the Set-Up screen select the Network tab (Figure 3-4).
2. Enter 10.253.0.2 for the LAN IP address.
3. Click on Save Settings.

Figure 3-4 Setting the LAN Address



When a system contains multiple cabinets, the LAN IP address for each NAT box must be unique. Setting duplicate LAN IP addresses will cause unexpected behaviors.

Because the first NAT box in cabinet #0 must be set to 10.253.0.2, all other boxes should be configured for subsequent addresses — for example, set the cabinet #1 NAT box to 10.253.0.3, the cabinet #2 NAT box to 10.253.0.4, and so on. No other settings are required (including the WAN IP address) for any cabinet other than cabinet #0.

Step 9: Power Cycle the NAT box

Unplug the power cord for approximately 10 seconds to power cycle the box.

Step 10: Verify Cable Connections

After completing the NAT box configuration, disconnect the laptop from the NAT box and ensure that all AlphaSystem server management RJ45 connections are made on the LAN ports by verifying link activity. If you have not yet done so, you can now connect the NAT box to the (WAN1 port).

If there is problem accessing the NAT box from the LAN or WAN that cannot be corrected through the configuration process, you can reset the NAT box by using a paper clip to push the reset button located under the CiscoSystems logo on the front right of the NAT box. Holding the reset button for 30 seconds or more will reset the configuration to the factory defaults. All of your configuration settings will be lost and you will need to reconfigure the NAT box.

Using the AMS

If you are using an AlphaServer Management Station (AMS) software for console logging and system management access, point the AMS platform to the NAT box WAN IP address.

If the AlphaServer is being managed by the AMS, HP recommends that you restart the `cmfd` daemon service on the AMS station. To do this, type one of the following commands at a terminal window on the AMS

Tru64 UNIX:

```
# /sbin/init.d/cmfd restart
```

Linux:

```
# /etc/init.d/cmfd restart
```

Firmware Updates

The firmware for the Linksys NAT box does not require regular updating. When it does need to be updated, HP will issue a notice or advisory. The current supported firmware version is posted on the Alpha Systems Firmware site:

http://ftp.digital.com/pub/Digital/Alpha/firmware

The installed firmware version appears in the top right corner of all configuration screens. (See Figure 3-5.)

Figure 3-5 Firmware Screen

To update the firmware:

1. Select the System Management tab and the Firmware Upgrade submenu.
2. Use the Browse... field to search for the new firmware update.
3. Click on Firmware Upgrade Right Now.

CAUTION: Do not interrupt the process until it has completed.

Following the firmware upgrade, HP recommends that you power cycle the NAT box and verify all configuration settings.

4 Removing the NAT box

You can replace the Linksys NAT box (p/n 30–10104–03) even with the AlphaServer powered on and functioning, provided the following conditions are met:

- The power on/ off commands are not issued to the affected server
- The operating system is not booting
- Major environmental events do not occur within the system

Before removing the NAT box, unplug the RJ45/Ethernet connections.

NOTE: Unplugging and plugging these cables will likely cause "Missing Neighbor Timeouts" in the MBM and/or PBM logs. These are only informational entries indicating that its server management cannot communicate with other members and will adjust accordingly.

To remove the NAT box, unplug the power cord from the back of the NAT box and unscrew the brackets from the two rear cabinet rails.