

How to Talk to SES Products Over the Internet

The purpose of this TSN is to communicate with SES products over the Internet.

DISCLAIMER: SES cannot provide troubleshooting support for this topic. This information is provided solely for your convenience. Please contact the router manufacturer for any router questions.

Routers typically used in small business or home networks have a function called Port Forwarding, which exposes a given port to the Internet. This enables an IP device (such as a NIC2) to be accessed from anywhere through the Internet.

To do this the following is required:

- 1) Your ISP provider’s supplied external IP address.
- 2) Lantronix CPR Manager software. (Included with the NIC2. SES Part Number = OPTNIC2)
- 3) Your router’s administration login access, and any required documentation.
- 4) Access to the Web from both the NIC2 and from the host computer running SES software.
- 5) A browser.

- 1) Determine your ISP provider’s assigned external IP address for use on Pg. 7.

If unknown, go to <http://whatismyip.org> and record the IP address that is returned.

It will look similar to this:

Your IP Address:

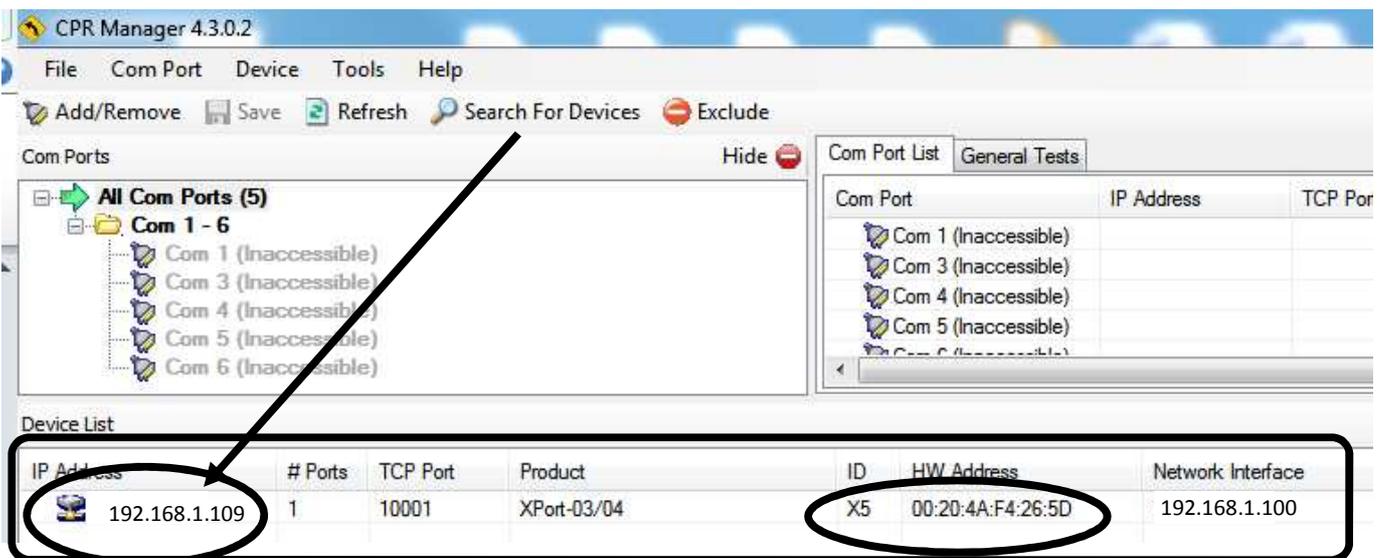
66.89.68.204

- 2) Install the CPR Manager program, provided on the SES NIC2 CD.

If the CD is not available it may be downloaded from the Lantronix web site at this URL link:

http://www.lantronix.com/ftp/cpr/Lantronix/4.3/4.3.0.3/Installers/SingleInstallFiles/setup_cpr_x86x64cd_4.3.0.3.exe
(Version number may be different.)

After installation run the CPR Manager. Click on Search For Devices to determine what IP address your router has assigned to the NIC2. It should look similar to this:



- 3) Record the IP (shown: 192.168.1.109) and the "HW Address" (MAC) address 00:20:4A:F4:26:5D)
The remaining instructions will vary, depending on router type.
- 4) Use a browser to log into the router as an administrator.
- 5) Reserve the IP address from step 3 that you recorded, using CPR Manager. This keeps the IP address from changing if the router is rebooted or changed. DHCP Reservation is not required if a NIC2 already has a static IP address.

NOTE: Some routers require the MAC address in order to reserve an IP address.

In the example below (from the administration page of a typical router) the computer host (CHARLES 1A) and the SES NIC2 IP address (192.168.1.109) are displayed.

The screenshot displays three sections of a router's DHCP management interface:

- DHCP RESERVATIONS LIST:** A table with columns: Host Name, IP Address, MAC Address, and Expired Time.
- NUMBER OF DYNAMIC DHCP CLIENTS:** A table with columns: Host Name, IP Address, MAC Address, and Expired Time. It shows one entry for CHARLES1A with IP 192.168.1.101 and MAC 68:05:ca:06:2d:d7, expiring in 6 Days 23 Hours 42 Minutes.
- 25 - DHCP RESERVATION:** A section showing the remaining number of rules that can be created (24) and a table for reservations. The table has columns: Computer Name, IP Address, and MAC Address. One reservation is shown for SES-NIC2 with IP 192.168.1.109 and MAC 00:20:4a:e0:43:a1.

- 6) After the DHCP reservation has been created and saved (if required) go to the port forwarding section of the router and forward port 10001. By using local port forwarding, firewalls that block certain web pages are able to be bypassed.

A brief definition of router terms is in order:

Service/Application: The name of the device/service.

External Port: Normally you would select a single port; for example 10001.

Internal Port: Normally you would select a single port; for example 10001.

Protocol: Depending on the device this could be either "TCP" or "UDP". Set this to "TCP" or "Both".

Device IP: This is the internal IP address of the SES NIC2 to which you are connecting. (See step 5.)

Note: Normally both the External Port and Internal Port numbers are the same for basic setups.

On the following pages are examples of different routers showing how to add port 10001 to be forwarded. In some cases, it may be necessary to create a Port Forwarding rule to be enabled. "SES_NIC2" was the rule created for these examples.

Do not forget to save the settings.

Security

View and change router settings:

Firewall | **DMZ** | Apps and Gaming

DDNS | Single Port Forwarding | **Port Range Forwarding** | Port Range Triggering

Application name	External Port	Internal Port	Protocol	Device IP#	Enabled	
SES_NIC2	10001	10001	Both	192.168.1.109	<input checked="" type="checkbox"/>	Save/Cancel

Add a new Single Port Forwarding

OK Cancel Apply

TYPICAL ROUTER DMZ/PORT FORWARDING PAGE SETTINGS

LINKSYS
A Division of Cisco Systems, Inc.

Firewall Version: 1.32.5.1a144

Broadband Firewall Router BFFSX41

Applications & Gaming

Setup Security Restrict Access Applications & Gaming Administration Status

Port Range Forwarding | Port Triggering | UPnP Forwarding | DMZ | DNS

Port Range Forwarding

Application	Port Range		TCP UDP	IP Address	Enabled
	Start	End			
NIC2	10001	10001	Both	192.168.1.109	<input checked="" type="checkbox"/>
	0	0	Both	192.168.1.0	<input type="checkbox"/>
	0	0	Both	192.168.1.0	<input type="checkbox"/>
	0	0	Both	192.168.1.0	<input type="checkbox"/>
	0	0	Both	192.168.1.0	<input type="checkbox"/>
	0	0	Both	192.168.1.0	<input type="checkbox"/>
	0	0	Both	192.168.1.0	<input type="checkbox"/>
	0	0	Both	192.168.1.0	<input type="checkbox"/>
	0	0	Both	192.168.1.0	<input type="checkbox"/>

Port Range Forwarding can be used to set up public services on your network. When users from the internet make certain requests on your network, the Router can forward those requests to computers equipped to handle the requests. If, for example, you set the port number 80 (HTTP) to be forwarded to IP Address 192.168.1.2, then all HTTP requests from outside users will be forwarded to 192.168.1.2. It is recommended that the computer use static IP address.

More...

Save Settings Cancel Changes

CISCO SYSTEMS

- ADVANCED Home
- Setup Wizard
- WPS Wizard
- Setup
- USB Functions
- Security
- Administration
- Advanced Setup
 - Wireless Settings
 - Wireless AP
 - Wireless Repeating
 - Port Forwarding / Port Triggering
 - Dynamic DNS
 - VPN Service
 - Static Routes
 - Remote Management
 - UPnP
 - IPv6
 - Traffic Meter
 - USB Settings
 - LED Control Settings
 - VLAN / Bridge Settings

Ports - Custom Services

Apply Cancel

Service Name: SES_NIC2

Service Type: TCP/UDP

External Starting Port: 10001 (1-65535)

External Ending Port: 10001 (1-65535)

Use the same port range for internal port

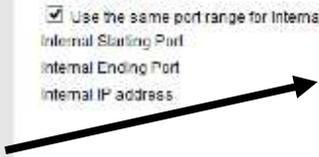
Internal Starting Port: 10001 (1-65535)

Internal Ending Port: 10001

Internal IP address: 192.168.1.109

Of selection can be installed devices:

	IP Address	Device Name
<input type="radio"/>	192.168.1.2	



Of selection can be installed devices:

	IP Address	Device Name
<input type="radio"/>	192.168.1.2	



Setup Wizard

Setup

- Basic Settings
- Wireless Settings
- Content Filtering
- Logs
- Block Sites
- Block Services
- Schedule
- E-mail

Maintenance

- Router Status
- Attached Devices
- Backup Settings
- Set Password
- Router Upgrade

Ports - Custom Services

Service Name: SES_NIC2

Service Type: TCP/UDP

Starting Port: 10001 (1-65534)

Ending Port: 10001 (1-65534)

Server IP Address: 192.168.1.109

Apply Cancel



Ports - Custom Services Help

To setup an application, game or service:

1. Type the service name in the **Service Name** box.
2. Type the beginning port number in the **Starting Port** box.
3. If the application uses only a single port, type the same port number in the **Ending Port** box.
4. If the application uses a range of ports, type the ending port number of the range in the **Ending Port** box.
5. Type the IP address of the computer in the **Server IP Address** box.
6. Click **Apply** button.

BELKIN Router Setup Utility Home | Help | Logout Internal Status: Connected

LAN Setup
LAN Settings
DHCP Client List

Advanced WAN
Connection Type
WAN
WAN Address

Wireless
Channel and SSID
Security
WPA Protected Setup
Users/Access Point
MAC Address Control

Firewall
Virtual Servers
Client IP Filters
DMZ
DNS
WAN Ping Blocking
Security Log

Utilities
Parental Control
Reboot Router
Reboot Factory Default
Save/Backup Settings
Reboot Previous Settings
Firmware Update
System Settings

Firewall > Virtual servers

This function will allow you to route external (Internet) calls for services such as a web server (port 80), FTP server (Port 21), or other applications through your Router to your internal network. [More Info](#)

Add: Active Worlds

Clear entry: 1

Enable	Description	Inbound port	Type	Private IP address	Private port
<input checked="" type="checkbox"/>	NIC2	10001 - 10001	BOTH	192.168.3.109	10001 - 10001
<input type="checkbox"/>			BOTH	192.168.3.	
<input type="checkbox"/>			BOTH	192.168.3.	
<input type="checkbox"/>			BOTH	192.168.3.	
<input type="checkbox"/>			BOTH	192.168.3.	
<input type="checkbox"/>			BOTH	192.168.3.	
<input type="checkbox"/>			BOTH	192.168.3.	
<input type="checkbox"/>			BOTH	192.168.3.	
<input type="checkbox"/>			BOTH	192.168.3.	
<input type="checkbox"/>			BOTH	192.168.3.	
<input type="checkbox"/>			BOTH	192.168.3.	
<input type="checkbox"/>			BOTH	192.168.3.	
<input type="checkbox"/>			BOTH	192.168.3.	
<input type="checkbox"/>			BOTH	192.168.3.	
<input type="checkbox"/>			BOTH	192.168.3.	

BELKIN Gateway/DSL Gateway Router Setup Utility Home | Help | Logout Internal Status: Connected

LAN Setup
LAN Settings
DHCP Client List

Advanced WAN
Connection Type
WAN
WAN Address

Wireless
Channel and SSID
Security
Use as Access Point
MAC Address Control

Firewall
Virtual Servers
Client IP Filters
DMZ
DNS
WAN Ping Blocking
Security Log

Utilities
Parental Control
Reboot Router
Reboot Factory Default
Save/Backup Settings
Reboot Previous Settings
Firmware Update

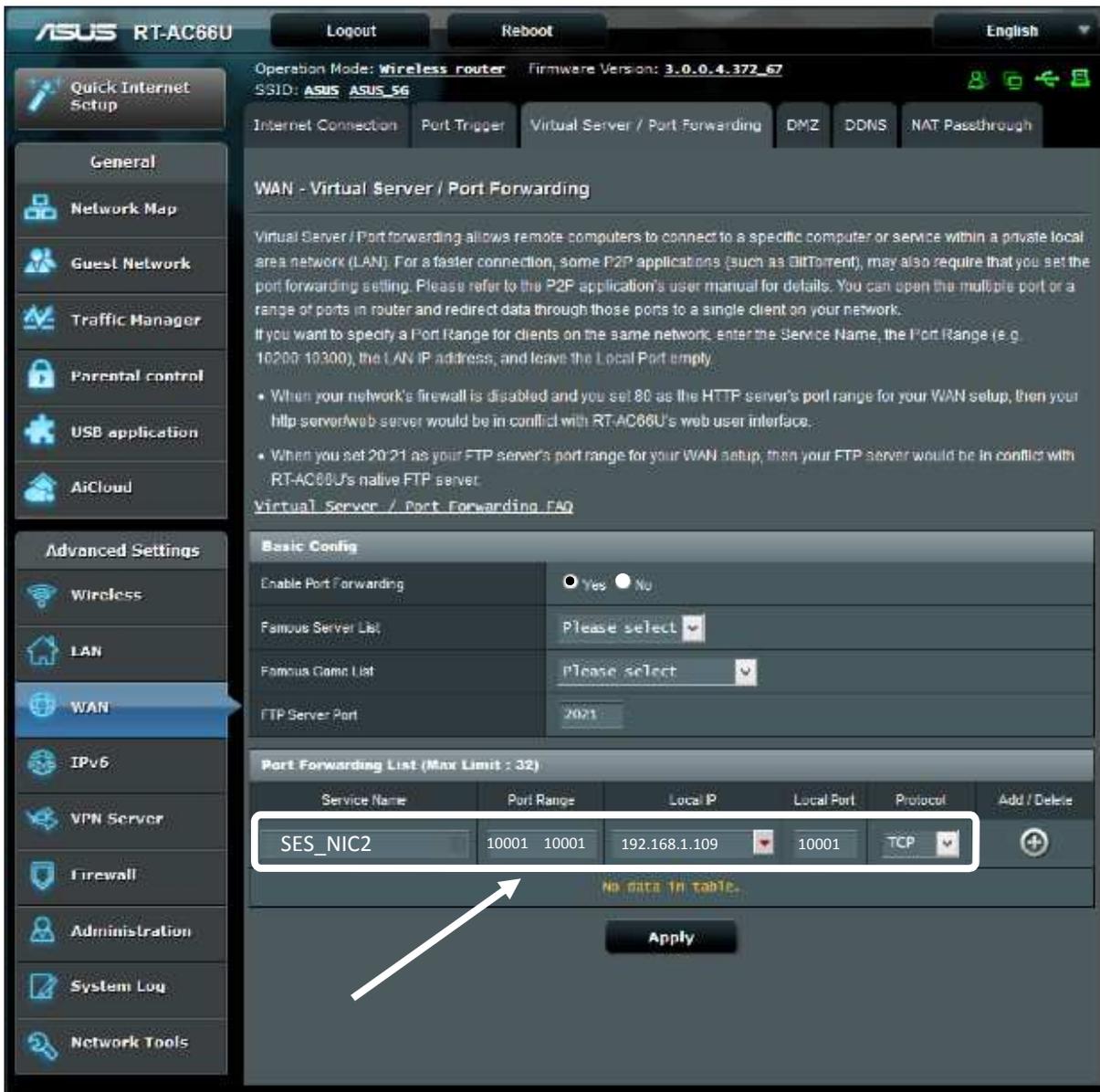
Firewall > Virtual servers

This function will allow you to route external (Internet) calls for services such as a web server (port 80), FTP server (Port 21), or other applications through your Router to your internal network. [More Info](#)

Add: Active Worlds

Clear entry: all

Enable	Description	Inbound port	Type	Private IP address	Private port
<input checked="" type="checkbox"/>	NIC2	10001 - 10001	TCP	192.168.3.109	10001 - 10001
<input type="checkbox"/>			TCP	192.168.3.	
<input type="checkbox"/>			TCP	192.168.3.	
<input type="checkbox"/>			TCP	192.168.3.	
<input type="checkbox"/>			TCP	192.168.3.	
<input type="checkbox"/>			TCP	192.168.3.	



To review, you have:

- Determined external IP address (whatismyip.org)
- Used CPR Manager to determine internal (router) IP address and MAC address assigned by the router to the NIC2.
- Performed a DHCP reservation for the device IP in the router.
- Created a device rule (e.g. SES_NIC2) and port forwarded port 10001 in the router.

Once the router has been configured, go on to the next page to test the configuration, using either Selcom Secured or Select Gate software.

HOW TO TEST ROUTER CONFIGURATION USING SES SOFTWARE

- A) Open SES software and select your site.
- B) Edit the panel data screen.
- C) Add the IP address you previously recorded.
- D) Apply settings and click on Finished.

**PREVIOUSLY RECORDED IP ADDRESS, ASSIGNED BY
ISP PROVIDER.**

(See step 1 on first page)

Communications

Modem
 Serial
 TCP/IP

Ethernet Settings

IP Address: 66 . 89 . 68 . 204 Port Number: 10001

Find NIC Panels Apply

Selcom Secured 7.x

How to Connect Password: 3057

Modem dials password and has direct line to Select Gate
 Modem dials phone # via Service Provider to Select Gate
 Use Serial Connection
 Use TCP/IP (Needs NIC on Select Gate) Check if Multiple Select Gates

Ethernet Settings

IP Address and Port: 10 . 0 . 0 . 209 Port: 10001

Find Select Gates Apply

Select Gate v. 3.x

E) Selcom Secured 7 or Select Gate software should now be ready to communicate with the NIC2, over the Internet. SES software will send TCP/IP traffic to the external IP address (ex. 66.89.68.204) on port 10001 and the router will port forward 10001 traffic to the reserved internal network IP address (ex. 192.168.1.109) and communications can now occur between SES software and the NIC2 on the SES panel.

It is recommended to perform "Send Test" from the Automatic Interface screen in Selcom Secured 7 to verify correct operation.

This procedure is for using a NIC2 on a single SES panel.

If multiple panels are required to be used from a single location (external IP address) please see TSN-020.

