

# Configuring the EN-2000 for its Network Functions

he EN-2000 provides wireless and cabled connections to a local area network (LAN), to a wide area network (WAN), and to peripheral devices and remote devices.

Before configuring the EN-2000, you may wish to review the document EN-2000 Hardware Description and Specifications. See the document Using the EN-2000's Management System for information on navigating the EN-2000 management screens. After configuring the EN-2000, you may wish to study the document Monitoring the EN-2000.

See the following:

- Section 3.1, Configuring Network Hosts, on page 3
- Section 3.2, Setting the APN, on page 4
- Section 3.3, Routing, on page 4
- Section 3.4, Firewall Configuration, on page 6
- Section 3.5, Configuring Traffic Priority, on page 8
- Section 3.6, Port Forwarding, on page 8
- Section 3.7, Configuring the EN-2000 for VRRP, on page 14

Note: If you prefer quick installation, see the following documents:

- EN-2000<sup>™</sup> Quick Installation Guide
- EN-2000<sup>™</sup> Quick Configuration Guide
- Quick Guide to EN-2000<sup>™</sup> LED Codes

When you log onto the EN-2000 management system (for details, see Logging In in the document Using the EN-2000's Management System), the first management screen that displays is the EN-2000 Status Overview Screen (Figure 3-1).

#### Figure 3-1. EN-2000 Status Overview Screen

	Device Mode: Cell Failo Auto Refresh: on						Site in
	in the second second						
tatus System Network L	Realtime Graphs Erc						
atus						Uptim	e: 22h 44m 2
System							
Device Name	EN2000						
Device Model	EN 2000						
Firmware Version	17322 05 00						
Build	247Ww						
Local Time Operation Status	Thu Feb 1 21: Online using V	14:20 2018 VAN					
Cellular Information							
RSSI	-81 dBm						
RSRP	-108 dBm						
RSRQ	-14 dB						
Connection Type	E-UTRAN(LTE)						
INET	35162207119	8259					
SIM ID	894410003003	331919708					
SIM STATUS	READY(CPIN S	ET: NA)					
APN	wann4.com	100					
Carrier	vodafone UK						
PCI	7D7671E						
EARFCN	6300						
Registration Status	Registered						
Hodule Name	LE910-EU V2(	FW: 20.00.402)					
SIM Switch Reason	1 Not Applicable						
51M Failback Status	Not Applicable						
Natwork							
Network	Status						
HEWORK	Justimes 24	7m 10e					
10 L 10 10	MAC-Addres	s: 00:00:11:12:1	13:14				
CELL	Protocol: no	m					
2	RX: 5.1836 K	8 (101 Pkts.) 8 (95 Pkts.)					
8500	IP Data: 8.9	121 KB					
	IPv4: 10.76.	103.146/24					
	Uptime: 22h	44m 30s	48:60				
LAN	Protocol: sta	tic					
(金賀金登)	RX: 45.5823	MB (394433 Pkts.	.)				
br-lan	IX: 169.0443 IP Data: 209	.6571 MB	a.,				
	Link Status:	UP, 100Mbps, Fu	II-Duplex				
	Uptime: 22h	44m 26s					
1078.00	MAC-Addres Protocol: db	s: 00:A0:E8:80:	A5:61				
WAR	RX: 158.4550	MB (453815 Pkt	s.)				
821 arbit	TX: 98.7828	MB (753532 Pkts.	.)				
	IP Data: 246 IPv4: 172.17	.1.51/24					
	Link Status:	UP, 100Mbps, Fu	Il-Duplex				
Wireless							
AR9342 802.11an Radio	SSID: encore	wifi60 5GHz	Encryption: WPA2 PS	K (CCMP)			
-	Mode: Master	15 620 GH-1	ACK Timeout: 25				
AP	Bitrate: 300 l	(5.620 GH2) Abit/s	UPS Statust Enabled				
	BSSID: 00:A0	EB1801A8162					
AR9280 802.11abgn Rad	SSID: encore	wifi60 2.4GHz	Encryption: WPA2 P	SK (CCMP)			
	Mode: Master		ACK Timeout: 64				
AP	Channel: 6 (2 Bitrate: 2001	.437 GHz) Mbit/s	DFS Status: Disable	8			
	BSSID: 001A0	1EB1801A8163					
Associated Stations (0)							
MAC-Address Network	Device Name Las	st IP Signal	Signal/Chains	Noise	TX Rate	RX Rate	TX-CCQ
							10000000000
	No information available						
DHCP Leases				8			
Hostname II	v4-Address	MAC-A	aaress		.easetime r	emaining	

The EN-2000 Status Overview Screen summarizes information for the firmware and for cellular wireless, LAN, WAN, and 802.11 wireless networks.

**Note:** In Figure 3-1, SIM information is displayed at the end of the list of specifications in the cellular wireless connection. In Figure 3-2, the information within the red rectangle indicates that SIM 1 is in use.

Figure 3-2.	Information	for Dual	SIMs in	the EN	V-2000
-------------	-------------	----------	---------	--------	--------

RSST	-81 dBm
RSBP	-198 dBm
RSRO	-14 dB
Connection Type	E-UTRAN(LTE)
IMEI	351622071198259
SIM ID	89441000300331919708
SIM STATUS	READY(CPIN SET: NA)
IMSI	34159505512784
APN	wlapn4.com
Carrier	vodafone UK
PCI	7D7671E
EARFCN	6300
Registration Status	Registered
Module Name	LE910-EU V2( FW: 20.00.402)
SIM Slot	1
SIM Switch Reason	Not Applicable
SIM Failback Status	Not Applicable

Specification of the SIM in use indicates that two SIMs are installed in the EN-2000. If only one SIM is installed in the EN-2000, information for the SIM will be similar to the display surrounded by red in Figure 3-3.

Figure 3-3.	Information	for a	Single	SIM in	the	EN-2000
0			<u> </u>			

Module Name	LE910-EU V2( FW: 20.00.402)
SIM Slot	Not Applicable
SIM Switch Reason	Not Applicable
SIM Failback Status	Not Applicable

If no SIM is installed in the EN-2000, information for the SIM will be similar to the display surrounded by red in Figure 3-4; that is, no SIM ID will be displayed.

Figure 3-4.	Information	if No	SIM is	in	the	EN-2000

IMEI	359692051010438
SIM ID	

## 3.1 Configuring Network Hosts

1 To configure names for host devices (in the private network and in the public network), select **Network**, **Hostnames**.

The Network Host Names Screen is displayed (Figure 3-5).

Figure 3-5. Network Host Names Screen

encor <mark>e n</mark> etworks	EN2000 LTE Router Phone/MTN#: Device Mode: Cell Failover Cell Signal: -125dBm Operation Status: Online using WAN		Changes:
Status System Network			
Hostnames Host entries	Harlasma	19 oddaar	
Add 🔰	nostname	IP address	
		🙆 Reset 🗳 Save 🗔 S	Save & Apply

- 2 To add a host name, click on the Add button.
  - An entry row is added to the screen, as shown in the Network Host Names Add Screen (Figure 3-6).

Figure 3-6. Network Host Names Add Screen

en	CORE-DETWORKS				Changes: 0
	Status System Network Logout Quickstart				
	Interfaces Hostnames Static Routes Failover Firewall Diagn	astics QeS VPN VRRP			
	ostnames				
	Host entries				
	Hostname	IP address			
	1			💌 Delete	
	Add				
			Reset	Save 🔛 Save	& Apply

- **3** In the **Hostname** field, type a name for the host device.
- 4 In the IP Address field, type the host device's IP address.
- **5** Then do one of the following:
- **a** If you want to add another host device to the list, return to step 2.
- **b** If you wish to delete a host name, select the **Delete** button at the right end of that host name's row.
  - The host name is removed from the list.
- **c** When you have finished configuring host devices, do one of the following:
  - i If you wish to save the configuration and use it immediately, select **Save** and Apply.
  - ii If you wish to save the configuration, but not to use it until the EN-2000 is restarted, select **Save**.
- iii If you wish to discard the configuration, select Reset.

### 3.2 Setting the APN

A mobile device must have an access point number (APN) so that connecting devices can identify the device and its connection protocols.

To set the APN for the cellular wireless interface, see the document *Setting Cellular Wireless Parameters in the EN-2000*.

## 3.3 Routing

Configure the routing screens with settings determined by your network administrator.

- 1 To create a static routing table, select Network, Static Routes.
  - The Static Routes Configuration Screen is displayed (Figure 3-7).

Figure 3-7. Static Routes Configuration Screen

1	EN2000 LTE Router Phone/MTN#: Device Mode: Cell Failover				Changes: 0
encor <mark>ein</mark> etworks	Cell Signal: -125dBm Operation Status: Online using WAN				
Status System Network					
Interfaces Hostnames Static	Routes Failover Firewall Diagnostic	S QOS VPN VRRP			
Routes					
Routes specify over which interface	e and gateway a certain host or network	can be reached.			
Static IPv4 Routes					
Interface 🖻	Target	IPv4-Netmask	IPv4-Gateway	Metric	МТИ
	Host-IP or Network	if target is a network			
		This section contains no values yet			
Add					
				🙆 Reset 🥝 Save	Save & Apply

2 Select the Add button under the Interface headings for IPv4 or for IPv6, as appropriate for your network. (The example uses IP version 4.)

The Static Routes Table is displayed (Figure 3-8).

Figure 3-8. Static Routes Table
---------------------------------

catus System Networ	k Logout Quickstart					
utes	Static Routes Failover Fire	wall Diagnostics QoS VPN V	RRP			
utes specify over which inte Static IPv4 Routes	rface and gateway a certain host	or network can be reached.				
utes specify over which inte Static IPv4 Routes Interface	rtace and gateway a certain host	IPv4-Netmask	IPv4-Gateway	Metric	MTU	
utes specify over which inte Static IPv4 Routes Interface 📄	rtace and gateway a certain host	or network can be reached. IPv4-Netmask if larget is a network	IPv4-Gateway	Metric	MTU	
utes specify over which inte Static IPv4 Routes Interface an	rtace and gateway a certain host i Target Host-IP or Network	IPv4-Netmask if target is a network [55:255:255:255	IPv4-Gateway	Metric	<b>мт</b> и [1500	× Delete
Ites specify over which inte Static IPv4 Routes Interface an Add	rtace and gateway a certain host i Target Host-IP or Network	or network can be reached. IPv4-Netmask // target is a network 255 255 255 255 255	IPv4-Gateway	Metric	<b>мти</b> )[1500	x Delete
Interface	rface and gateway a certain host - Target Host- <u>IP</u> or Network	or network can be reached. <u>IPv1-Netmask</u> # larget is a network [255.255.255.255	IPv4-Gateway	Metric	MTU [1500	Nolete

- **3** Add information for the new entry.
- **4** Do one of the following:
- **a** If you wish to add another static route, return to step 2.
- **b** If you wish to delete a route from the table, select the **Delete** button at the right end of that row.
  - The row is deleted from the table.
- **c** When you have finished configuring this screen, select the **Save & Apply** button.
  - ♦ The Static Routes Configuration Screen is redisplayed (recall Figure 3-7).
- **5** On the Static Routes Configuration Screen, do one of the following:
  - **a** If you wish to save the configuration and use it immediately, select **Save and Apply**.
  - **b** If you wish to save the configuration, but not to use it until the EN-2000 is restarted, select **Save**.
  - c If you wish to discard the configuration, select Reset.

## 3.4 Firewall Configuration

Get all firewall configuration settings from your network administrator.

- 1 Select the **Network** tab. Then select the **Firewall** tab. If necessary, select the **General Settings** tab.
  - ✤ The Firewall General Settings Screen is displayed (Figure 3-9).

Figure 3-9	Firewall	General	Settings	Screen
------------	----------	---------	----------	--------

EN2000 LTE Router Pho Device Mode: Cell Failor Cell Signal: -125dBm	one/MTN≠i ver					Chang
Control Contro Control Control Control Control Control Control Control Control Co	e using WAN irewall Diagnostics	QoS VPN VRRP				
Firewall - Zone Settings						
The firewall creates zones over your network interfaces to con General Settings	ntrol network traffic flow.					
Enable SVN-flood protection		<b>V</b>				
Drop invalid packets						
Input		accept	×			
Output		accept				
Forward		reject	×			
Zones						
Zone => Forwardings	Input	Output	Forward	Masquerading	MSS clamping	
lanı lanı 🚬 😑 wan cell	accept	accept	reject 💌	(****		🔣 Edit 😠 Delete
wani wani 🚵 🗕 REJECT	reject	<ul> <li>accept</li> </ul>	reject 💌	<b>V</b>	<b>V</b>	Edit 💌 Delete
celli celli 🧾 = RERCT	reject	<ul> <li>accept</li> </ul>	reject 💌	<b>V</b>	<b>V</b>	🔀 Edit 💌 Delete
Add						
						🙁 Reset 🧉 Save 🔝 Save & Apply
					A Description of the second second	

- 2 After configuring the fields on the screen, select the **Save & Apply** button. Then select the **Add** button.
  - The Firewall General Settings Screen to Add Record is displayed (Figure 3-10).

	na WAN	
Sustam Network Lessue Ovickston		
Vision System Retwork Elegistic Quickstate		
eral Settings Port Forwards Traffic Rules	n bilgiosics gob vrn vinn	
in a second seco		
ewall - Zone Settings - Zone "newzone"		
one "newzone" is section defines common properties of "newzone". The <i>input</i>	and output options set the default policies for traffic entering and leaving this zone while the forward option describes the poli	y for forwarded traffic between different
tworks within the zone. Covered networks specifies which availa	able networks are member of this zone.	
eneral Settings Advanced Settings		
ame	newzone	
ıput	accept	
utput	accept	
orward	reject	
asquerading		
SS clamping		
overed networks	cell: 🧾	
	🔲 lan: 🖉	
	wan: 🖉	
	Create:	
ter-Zone Forwarding	one (newsone) and other somes. Destination somes cover forwarded traffic origination from "newsone". Source somes match forwa	rded traffic from other zones targeted at
wzone". The forwarding rule is unidirectional, e.g. a forward fro	m lan to wan does not imply a permission to forward from wan to lan as well.	act and the non-outer cones targeted at
low forward to destination zones:	cell: cell: 🖉	
	lan: lan: M	
	wan: wan: 🚵	
llow forward from source zones:	cell: cell: 2	
	Lant lan: au	
	wan: wan: 🖉	

Figure 3-10. Firewall General Settings Screen to Add Record

**3** After configuring the fields on the screen, select the **Save & Apply** button. Then select the tab for **Port Forwards**.

The Firewall Port Forward Screen is displayed (Figure 3-11).

Figure 3-11. Firewall Port Forward Screen

	EN2000 LTE Router Phone/MTN#:		Changes
encore-network	S Cell Signal: -12560m Operation Status: Online using WAN		
Status System Networ	k Decent Ouldsstam		
Interfaces Hostnames	Static Routes Failover Firewall Disonostics OoS VPN VRRP		
General Settings Port For	wards Traffic Rules		
Firewall - Port Forward	\$		
Port forwarding allows remote of	computers on the Internet to connect to a specific computer or service within the private LAN.		
Port Forwards			
Name	Match	Forward to	Enable Sort
	This section contains	ne values yet	
	New port forward:		
Name Pr	olocol External zone External port Internal zone Internal IP address Internal port		
New port forward TCP+L	JDP 💌 wan 💌 🛛 cel 💌 🔍	Add	
			😆 Reset 🖉 Save 🔝 Save & Apply
the second states			

- 4 See *Port Forwarding* on page 8. After configuring the fields on the screen, select the **Save & Apply** button. Then select the tab for **Traffic Rules**.
  - The Firewall Traffic Rules Screen is displayed (Figure 3-12).

cor <mark>en</mark> etworks	(2000 LTE Router Phone)WTIVe vice Mode: Call Statueer II logaal: - 123d0m earton Cattui: Conine using WAN			Cha
Status System Network				
	outes Failover Firewall Diagnostics QoS VPN VRRP			
General Settings Port Forwards	Traffic Rules			
Firewall - Traffic Rules				
raffic rules define policies for packets	traveling between different zones, for example to reject traffic between certain hosts or to open WAN ports o	in the router.		
Traffic Rules				
Name	Match	Action	Enable Sor	
Allow- DHCP-Renew	DH-4-U00* From any host in any zone To any nouter 2F at port 01 an this device	Accept input		• ZEdt N Delete
Allow- TCP-HTTPS	DevintCD From any host in any zone To any notes D'at societ 442 on this device	Accept input		+ 🔣 Edit 💌 Delete
Allow- TCP-SSH	19-4-17CP From any heat may anne To any noues 9 at port JO22 on this device	Accept input		• ZEdt 🗙 Delete
Allow-Ping	BP-4-3(DNR with page environmentures) Framm any host in any some To any nuclear 29 on this device	Accept input		• 🛃 Edit 💌 Delete
Open ports on router: Name Protocol New input rule TCP+UDP	bitamal port			
New forward rule: Name Source zone New forward rule Ian	Cestination zone     Wan     wan     Add and edt			
Source NAT	maradion which allows fine orained control over the source ID used for outcoino traffic. for example to man	multinia WAN addresses to internal subnets.		
Name	Match	A	ction	Enable Sort
	This section contains no values yet			
New source NAT:				
Name Source zone	Destination zone To source IP To source port			
rvew SNAT rule Ian	wan v Thease chot v Lo not rewrite			
			Reset (	Save Save & And
			- Neset	- Save   as Save a App

Figure 3-12. Firewall Traffic Rules Screen

- **5** After configuring the fields for the firewall, do one of the following:
  - **a** If you wish to save the configuration and use it immediately, select **Save and Apply**.
  - **b** If you wish to save the configuration, but not to use it until the EN-2000 is restarted, select **Save**.
  - c If you wish to discard the configuration, select Reset.

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# 3.5 Configuring Traffic Priority

See the document Configuring Traffic Priority for the EN-2000.

## 3.6 Port Forwarding

See the following sections:

- Configuring the Port
- Opening the Port for Use

**Caution:** Remember to select the **Save and Apply** button after configuring each screen. Otherwise, the configuration will be lost.

## 3.6.1 Configuring the Port

This procedure creates rules for port forwarding.

**Note:** This procedure discusses configuration of an EN-2000 whose device mode is as a cell router. Some differences in configuration might exist for other device modes. Consult your network administrator for configuration details.

- 1 Log into the EN-2000 management system. (For log-in details, see *Logging In*, on page 2 of the document *Configuring the EN-2000 for its Network Functions*.)
- 2 Make sure the device mode for this EN-2000 has been established. To see the device mode, select the **Quickstart** tab.

**Note:** For information on the device mode, see the *EN-2000™ Quick Configuration Guide*.

The Quickstart Screen is displayed (Figure 3-13).

Figure 3-13. Quickstart Screen Device Mode as Cell Router

ncore-networks	ne/MTN#: eer le using WAN	Changes
Status System Network Lopout Quickstart Application Configuration		
Select the Device Mode and associated parameters		
Parameters		
Device Mode	Cell Router 💿	
	Two Ethernet Ports(LAN+WAN) as a Switch to Cell Broadband Router	
Device Name	NameOfThisDevice Custom name assigned to this device	
LAN IP	192.168.10.1 IP Address assigned to the ethernet LAN port	
LAN Netmask	255 255 255 0 💌	
LAN DHCP Server	Enabled 💌	
Device Password Changes the administrator password for accessing the device	e	
Password	¢	
Confirmation	() Ø	
	🕲 Res	et 🥝 Save 💷 Save & Apply

- 3 Select the Network Tab.
- 4 Select the Firewall Tab; then select the Port Forwards Tab.

The Port Forwarding Table is displayed (Figure 3-14).

Figure 3-14. Port Forwarding Table

ar notwork	EN2000 LTE Router Phone/MTN#1 Device Mode: Cell Failover — Cell Singli +9648m		
oremetwork	Operation Status: Online using WAN		
tatus System Network	Lopout Quickstart		
nterfaces Hostnames	Static Routes Failover Firewall Diagnostics QoS VPN VRRP		
Seneral Settings Port For	wards Traffic Rules		
ewall - Port Forward:	1		
a feature allows assess a	to many stars on the fatorent to concern to a consider company or concirca within the pair star 1.5		
rt forwarding allows remote o	computers on the Internet to connect to a specific computer or service within the private LA	N.	
rt forwarding allows remote o Port Forwards	computers on the Internet to connect to a specific computer or service within the private LA	N.	
t forwarding allows remote o Port Forwards Name	computers on the Internet to connect to a specific computer or service within the private LA Match	N. Forward to	Enable Sort
t forwarding allows remote c Port Forwards Name	omputers on the Internet to connect to a specific computer or service within the private LA Natch IV+107, UDP	N. Forward to	Enable Sort
rt forwarding allows remote o Port Forwards Name	omputers on the Internet to connect to a specific computer or service within the private LA PH-LOT, NOP PH-LOT, NOP Phenet Phene	N. Forward to any host in cell	Enable Sort
rt forwarding allows remote o Port Forwards Name	emputers on the Internet to connect to a specific computer or service within the private LA  Heatch  Prive 127, NOP  Fram, any Koner And  Ve eny moder 20	N. Forward to any heat in cell	Enable Sort
rt forwarding allows remote o Port Forwards Name	emputers on the Internet to connect to a specific computer or service within the private LA Pre-TCP, UOP Prem. arX years non Via ery mode 72 New port forward:	N. Forward to any host in cell	Enable Sort
rt forwarding allows remote of Port Forwards Name	mouters on the Internet to connect to a specific computer or service within the private LA     Pre-107, UP     Pre-107, U	N. Perward to any heat in cell	Faable Sort
rt forwarding allows remote o Port Forwards Name Name Port Name Port Eleve nonforward TCP41	Section     S	Forward to any heat in cell	Fashke Sort
Port Forwarding allows remote of Port Forwards Name Name Name Pro Name Pro	mouters on the Internet to connect to a specific computer or service within the private LA     Pre-107, NDP     Pre-107,	N. Forward to any heat in call	Fashle Sort
rt forwarding allows remote of Port Forwards Name Name Name Prove port forward TCP+U	Merror Defension Provide a specific computer or service within the private LA     March     Prive 127, 100     Prive and and     Via environment     Via environment     Via environment     New poet forward:     Roten and put     Defensione     Defensione     Cell     Via     Via	N. Forward to any host in cell	Enable Sort

5 Under the heading **New Port Forwards**, add a **Name** for the forwarding rule. Then indicate the **Protocol** and the **External Port** number.

**Note:** The default value for the **External Zone** is **wan**. Confer with your network administrator about whether to change it to **cell**.

- 6 Change the Internal Zone from cell to lan.
- 7 Add the Internal IP Address of your EN-2000 router or of the device on the LAN you want to access.
- 8 If the internal port number the EN-2000 will use for this port forwarding rule is different from the external port number it will use, indicate the Internal Port number.
- **9** Select the **Add** button at the righthand end of the entry row.

The new port forwarding rule is added to the Port Forwarding Table (Figure 3-15).

Figure 3-15. Port Forwarding Table Configured with a New Rule

encor	Enclose LTE Based Phase/HTNer Denics Mode: Cell Faster/HTNer Cell Signali - 12388m Operation Status: Online using WAN		Changest
Status Interfa Genera Firewa Port forw	System         Network         Legord         Quickstart         Network         Disposition         Quick         Disposition         Disposition <th>and Lan.</th> <th></th>	and Lan.	
Name	Match	Forward to	Enable Sort
	Sivel-TCP, USP Frem any heat is wan Vie anv review 29	any host in cell	V • Edt K Delete
port test	DiverTCP, UDP From any host is wan Via any mulan 21 wat port 5355	any host, port 5555 in lan	V • • ZEdt N Delete
New	Name         Protect         Determing and         Determing part         Determing part	en 🔁 Add	
			Save & Apply

- 10 Select the Save and Apply button.
- **11** Select the **Edit** button for the port forwarding rule you just added.
  - The Port Forwarding Rule Configuration Screen is displayed (Figure 3-16).

Figure 3-16. Port Forwarding	Rule Configuration Screen
------------------------------	---------------------------

existe Node: Cell Fallover Cell Spail: - 12585m Certe-networks		04
Status         System         Network         Large 20         Questad           Status         System         Status         False         System         Status           Status         Status         Status         False         Status         Status	ARE NO ALL COMMUNICATION AND ALL AND	
Rule is enabled	O Disable	
Name	port test	
Protocol	TCP+UDP	
Source some	δ. 100 mm θ δ. 100 mm θ δ. 100 mm θ δ. 100 mm θ	
Source MAC address	City match incoming traffic from these MACs.	
Source IP address	any v	
Source port	any Only match incoming traffic originating from the given source port or port range on the client heat	
External IP address	any v astronocoming traffic directed at the given LP appress.	
External port	5555 Match incoming traffic directed at the given destination port or port range on this heat	
bitemal some	<ul> <li>mmi entr_Z</li> <li>mmi entr_Z</li> <li>mmi entr_Z</li> </ul>	
Internal IP address	Redirect metched incoming traffic to the specified international	
Internal port	SSSS     Medirect matched incoming treffic to the given part on the internal host	
Extra argumenta	Passes additional arguments to totaloas. Use with care!	
Back to Overview		🔕 Reset 🛛 Save & App)

- **12** Make sure the following parameter values are set:
  - Source Zone wan (to match the setting in step 6 on page 9)
  - Source IP Address any

**Note:** The source IP address is the IP address coming into the firewall.

External IP Address any

**Note:** In this example, the external IP address is the WAN's IP address.

- External Port [number] Use the setting configured on the Port Forwarding Table (recall Figure 3-14).
- Internal Zone Ian
- Internal Port [number] Use the setting configured on the Port Forwarding Table (recall Figure 3-14).

**Note:** For additional security, you can specify the **Source IP address** or the **External IP address** or both, instead of indicating **any**. (The source IP address is critical; typically, you would set it to allow connectivity only from a specific IP address or range of IP addresses.)

- **13** Select the **Save & Apply** button.
- 14 Then select the **Back to Overview** button.

The Port Forwarding Table is redisplayed (recall Figure 3-15).

15 On that screen, select the Save & Apply button.

Port forwarding has been configured.

**16** Perform the procedure in *Opening the Port for Use*, on page 11.

### 3.6.2 Opening the Port for Use

This procedure creates a firewall rule that allows port forwarding to occur.

- 1 On the EN-2000 management system, select the **Firewall** tab; then select the **Traffic Rules** tab.
  - The Table of Firewall Traffic Rules is displayed (Figure 3-17).

ncore-networks	Phone/IVF4 : algorithm where using NMI		Char
Status System Network Lopevil Quick			
	Firewall Disprostes QoS VPN VRRP		
General Settings Port Porwards Traffic Rules			
Firewall - Traffic Rules			
Traffic rules define policies for packets traveling between	n different zones, for example to reject traffic between certain hosts or to open WAN ports on the muter.		
Traffic Rules			
Name	Hatch	Action	Enable Sort
Alter- D-Chfarer	(Proving) Magnitization, Analysis, Anno Anno Francisco, Anno 19 and Anno Anno Anno Anno	Accept Input	V • • K Edt * Delete
Align+ TCP+HTTPS	jarve-nga New any sector any sector any sector Taran y sector and sector and the damas	Accept input	V ZEdt Delete
Allow- TCP-SEH	investment Regime and y description provided The anty measure of a participation of the description	Accept Input	🖉 🔹 🔹 🧭 Edt 💌 Delete
Alou-Ping	19 - Le 19 - Will and Le 20 -	Accest Input	V ZEdt N Delete
Open ports en modern Name Protocol External New input rule TCP+UCP	neer Add		
New forward rule: Name Source sone Cestinatio	01.50m		
New forward rule an wan	Add and edi		
Source NAT Source NAT is a specific form of masourrading which allows free	graned control over the source IP used for outgoing traffic, for example to map multiple WAX addresses to internet subnets.		
Name	Match	Action	Enable Sort
	This saction contains no variant yet		
New Source MATI			
Name Source sone Destination sone	To source D* To source port		
New SNATA lan 💽 wan 🛒	- Please cht T Do not rewrite		
·			Reset Save Save Save Apply

2 Under the heading **Open Ports on Router**, name the rule and add the port number, as shown in Figure 3-18.

#### Figure 3-18. Table of Firewall Traffic Rules Entering a Traffic Rule for a Port

core-networks	peng/MTNie: Bver 		01
Status System Network Lagout Quidata bitarfaces Hostoames Static Routes Failower General Settings Part Forwards Traffic Rules	na sang saku KT Kiramatil Dayunahan QuS VAN VARAP		
Firewall - Traffic Rules			
Traffic rules define policies for packets traveling between d	ifferent zones, for example to reject traffic between certain hosts or to open WAN ports on the router.		
Name	Match	Action	Enable Sort
Alder- Di-Ch-Rener	Tak-ang Bar Magani yang Kapitang Ang Kapitang Takang mang Kabatang Kapitang Kapitang Kapitang	Accept Input	V •• ZEdt * Delete
Align- TCP-HTIPS	interiety Ream any basis trans and The any reason of the angle of any framework	Accept Input	V · · ZEdt x Delete
Alov- TCP-SSH	Envirenza Manara na ya anara Ya any manara J7 at part (1822) an dina darina	Accept Input	V • • ZEdt x Delete
Alau-Mrg	DP-441200F with frame and white resources Answer and you have an any second The any resource of the fibre division	Accept Input	V • • ZEdt Delete
Open ports en router: Name Antocol External po port test rule 1 TCP+UDP 😱 (5555)	n MAda		
New forward rule: Name Source zone Cestination:	1974		
(vew forward rule   an   w   wan	Add and edt		
Source NAT Source NAT is a specific form of maxourading which allows fine gra	thed control over the source IP used for outgoing traffic, for example to map multiple WAN addresses to internal subnets.		
Name	Hatch	Activ	Enable Sert
	This section contains no values yet		
New source NAT: Name Source sone Destination sone INew SNAT () Ian 💓 Wan 💓	To source IP To source sort - Prease only Do not rewrite Add and edt		
			🔕 Reset 🥥 Save 🔯 Save & App
			and the local data which it is the

**Note:** In Figure 3-18, the rule is named **port test rule 1**, and its port is the same as the port number entered in step 5 on page 9. (Recall the Port Forwarding Table, Figure 3-14.)

For good housekeeping, we recommend also using the same rule name as used in step 5 on page 9 (or a name similar to that name).

- **3** On the righthand side of the entry row, select the **Add** button.
  - The Table of Firewall Traffic Rules is redisplayed (Figure 3-19). It includes the new rule.

re-networks	Fallovan mine using WAN		
tus System Network Logout Quid			
erfaces Hostnames Static Routes Pallover	Firewall Dagroutics QcS VPN VRRP		
neral Settings - Port Forwards - Traffic Rules			
wall - Traffic Rules			
c rules define policies for packets traveling betwee	n different zones, for example to reject traffic between certain hosts or to open WAN ports on the router.		
affic Rules			
Name	Malch	Action	Enable Sort
Albu- Children	(Product)(Pr Name any factor (any source The any resource) and (any other decourse	Accust Input	V •• KEdt K Dele
Allqui- ShortTPS	prover type Name and a basic start and a second The and a second start of the advances	Acoust Inext	V + + ZEdt + Dete
Aldu- ICHSSH	Bruke Holf Mayan ang Jukasi Karaya ang Tana ang nausan (Firal gand) 2020 ang Ana dina unio	Accept input	V • • ZEdi * Dele
an-Frig	(An and Color with Tage Colorange Color Mean and Analysis and Analysis and Analysis Tel dry: Young Y Tel Analysis (Tel Color)	Accept reput	V · · ZEdz · Dele
nt teast rule 1	anny 100,007 Nyan any fanyan ann Ta any reader 21 algand 2000 an dio deolar	Access Input	V 🔹 🕯 🔏 Eds 🖈 Dele
Idean ports en restant Name Protocol Biteme New Input rule TOP+UOP	* 60 <sup>1</sup>		
lew forward rule: Name Source zone Descined	01 30M		
New forward rule an wan	Add and edit		
urce NAT			
nce NAT is a specific form of masquarading which allows fine	grained control over the source IP used for outgoing traffic, for example to map multiple WAN appresses to internal subrets.		
Name	Match	-	tion Enable Sort
	This section contains no values yet		
iew source NAT:			
	To source 28 To source port		
Name Bource zone Destination zone			
Name Bource some Destination some New SNATIn: Ian 🐷 Wan 🐷	Please chd      Co not rewrite     Add and edit		

Figure 3-19. Table of Firewall Traffic Rules Updated with New Rule

4 On the far right side of the new rule, select the Edit button.

The Screen to Edit a Traffic Rule is displayed (Figure 3-20).

Figure 3-20. Screen to Edit a Traffic Rule

EN2000 LTE Router Phone/HTN# : Device Mode: Cell Failuver		Change
core-networks Cell Signel: -12508m Operation Status. Online using WAN		
Status System Network Logout Quickstart		
Interfaces Hostnames Static Routes Pallover Firewall Diagnostics QoS		
General Settings Fork Forwards Traffic Rules		
Firewall - Traffic Rules - port test rule 1		
This page allows you to change advanced properties of the traffic rule entry, such as matche	d source and destination hosts.	
Rule is enabled	Oisable	
Name	port test rule 1	
Restrict to address family	IPv4 only	
Pretacel	TCP+UCP	
Netch 3CMP type	any 🐷	
Source zone	Any zone	
	C reft, celt 2	
	want want 2	
Source MAC address	any 🐷	
Source address	any 🐷	
Source port	μeγ.	
Destination zone	Device (input)	
	Any zone (forward)	
	C celli celli 2	
	0 100 100 1	
	A MARIE MARIE TO	
Destination address	ary 🕞	
Destination port	5555	
Action	accept	
Extra argumenta	Fesses aptrional arguments to iptables. Use with carel	
Back to Overview		😝 Reset 💊 Save 🛄 Save & Apply
	기업 방법과 방법에 가지 않는 것 같은 것 같	

- **5** On the Screen to Edit a Traffic Rule, make sure the following values are indicated:
  - Source Zone wan
  - Destination Port same as the port number entered in step 5 on page 9

**Note:** Also recall the Port Forwarding Table, Figure 3-14 on page 9.

- 6 Select the Save & Apply button.
- 7 Select the Back to Overview button.
  - ♦ The Table of Firewall Traffic Rules is redisplayed (Figure 3-21).

Figure 3-21. Table of Firewall Traffic Rules	S
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ncor <mark>e n</mark> etworks	hawATTRE: When: the wang WAX		Cha		
Status System Network Logout Quides					
General Settings Port Forwards Traffic Rules	Prevail Dispretice Ups Vin Ville				
Firewall - Traffic Bules					
Traffic rules define policies for packets braveling between	different zones, for example to reject traffic between certain hosts or to open WAN ports on the router.				
Traffic Rules					
Name	Match	Action	Enable Bort		
Alger CHCP-Renew	March 2005 The mark and a fact of a start of	Accept Input	V · · CEds & Delete		
Alge- TCP-HTTPS	(Bitward)) Maan ang Josefin ang yang Maan ang Josefin ang A	Accept input	🖌 + + 🗶 Edt 🗙 Delete		
Alow- TCP-SSH	University - Magins and you and the second s	Accept Post	🗸 🔹 🏹 Edt 🛪 Delete		
Alou-Phg	19-4-1209 with base and interview Networks for any base any and The any model of the Network	Accest Post	V • • KEdt K Delete		
port test rule 1	Any USE USE Harmony function and The any matter of the Land Alf State on Alter day land	Accept input	V · · Z Edt × Delete		
Open ports on routen					
kana Araza Bosna av New ripst rue (TEPHLOP ())					
New forward rule: Name Source sone Cestination	204				
There for any the second secon					
Source NAT	whee control over the source IP used for outgoing traffic. For example to map multiple WAN addresses to internet subnets.				
Name	Match	Action	Enable Sort		
	This section contains no values pat				
New source NAT:					
New SNATI: Ian wan w	To source IP To source port				
			😝 Hesel 🥥 Save 🔛 Save & Apply		

- Go to Table of Contents
- 8 On the Table of Firewall Traffic Rules, select the Save & Apply button.
  - ✤ The firewall rule has been configured. The port has been opened.

## 3.7 Configuring the EN-2000 for VRRP

When you install the EN-2000, you can configure VRRP back-up as the EN-2000's principal use. If you wish to do that, see the  $EN-2000^{TM}$  Quick Configuration Guide.

However, if you wish to use the EN-2000 for another principal purpose, yet support VRRP, follow the steps in this section.

- 1 On the EN-2000's management screen, select the **Network** tab; then select the **VRRP** tab.
  - The VRRP Configuration Screen is displayed (Figure 3-22).

( 3192168101/cgi-bin/luci/;stok=0bce5fc4a0e8bccb91414144cb7141e3/admin/network/v	rrpd/	😭 🔻 🧭 🔡 - DuckDuckGo	٩	Ĥ	12
🖉 Most Visited 📋 Getting Started 🔮 Welcome to Firefox 🛄 EN-2000 🛄 EN-4000 🛄 Enc	ore Networks - Cell 📙 Encore Wiki 🔒 Info & S	earches 🥃 Mail 🔒 BlackBox 🔜 STC 🍶 Tools 🌆 translation 🔓	news 🧧	educ	>>
encorenetworks encorenetworks Cell Signal - 12888 Operation Status: Online using WAN				Chan	esi O
Status System Network Logout Quickstart					
Interfaces Hostnames Static Routes Failover Firewall Diagnostics QoS Vi	N VRRP				-122
VRRP Configuration					
Configure the VRRP					
VRRP Names			-		
Enable VRRP			×	Jelete	
Interface name	the interface to run on				
Virtual ID	1 S the 1D of the virtual server				
Vinual IP	192.168.10.253				
VRRP Priority	Backup (100)				
Add					
		Reset Ø Sav	e 🔝 Save	& Apply	

Figure 3-22. VRRP Configuration Screen

- **2** On the VRRP Configuration Screen, do the following:
  - Select the box to Enable VRRP.
  - Type the Interface Name. Use the EN-2000's network interface (Cell or WAN) that your network administrator specifies.

**Note:** Your EN-2000's network interfaces are listed on the EN-2000 Status Overview Screen (Figure 3-1, on page 2).

- Type the Virtual ID. The default value is 01.
- Type the **Virtual IP** (the IP address) for the VRRP set. Get this address from your network administrator.
- Indicate the VRRP Priority for this EN-2000. Primary (value 255) means that this EN-2000 is the principal router in the VRRP set. Back-Up (value 100) means that this router is a back-up in case the primary router fails.

When the primary VRRP router fails, a back-up router in the VRRP set assumes responsibility and control/priority. If there is more than one backup VRRP router, the back-up router with the highest value assumes priority until the primary router recovers. The EN-2000 uses asymmetric parameters for VRRP, so when the primary router recovers, it automatically resumes the primary role in the VRRP set.