

EN-2000™ Reference Manual Document E

EN-2000 System Administration

his chapter reviews screens for use by system administrators and network administrators.

- 1 Log into the EN-2000. (For details, see *Logging In*, on page 2 of the document *Using the EN-2000's Management System*.)
 - The Status Overview Screen is displayed (Figure E-1). This screen provides a summary of the EN-2000's operation and its ports.

	2000 LTE Router Phone/MTI vice Mode: Cell Failover I Signal: -125dBm		Char
	eration Status: Online usin	y WAN Auto Refresh: on	
Overview Routes System Log Ro	altime Graphs		
Status			Uptime: 3h 11m
System			
Device Name	ENG	2000	
Device Model		2000	
Firmware Version		229 01 10	
Local Time	Mo	n Sep 22 23:36:56 2014	
Cellular Information			
Cell Signal	-12	15 dBm	
IMEI	355	9692051010438	
SIM ID			
Network			
Network	St	atus	
	Up	stime: 0h 0m 0s	
CELL	H/	AC-Address: 94:89:84:09:82:4A	
2		otocol: dhap	
eth2		(; 9.57 KB (184 Pkts.) (; 1.50 MB (3819 Pkts.)	
		ntime: 3h 10m 43s	
LAN	H/	AC-Address: 04:F0:21:11:86:44	
2		otocol: static	
ethO		(: 5.56 MB (24617 Pkts.) (: 34.78 MB (37421 Pkts.)	
		v4: 192.168.10.1/24	
	Up	time: 3h 8m 23s	
WAN		AC-Address: 04:F0:21:11:86:45	
14		otocol: dhcp (: 35.54 MB (49551 Pkts.)	
eth1		: 5.72 MB (34362 Pkts.)	
	IP	v4: 192.168.1.151/24	
DHCP Leases			
Hostname	IPv4-Address	MAC-Address	Leasetime remaining
HP-p6-2016	192.168.10.198	38:60:77:82:55:1a	11h 28m 6s

Figure E-1. Status Overview Screen

See the following:

- General System Administration, on page 2
- Configuring the EN-2000's Background Elements, on page 4
- Software Management, on page 8

E.1 General System Administration

The following sections describe basic administrative configuration:

- Changing the EN-2000's Password
- Configuring the EN-2000 for Recovery

E.1.1 Changing the EN-2000's Password

- 1 On the EN-2000 management screen, select the **System** tab; then select the **Administration** tab.
 - ✤ The Screen to Set a New Password is displayed (Figure E-2).

Figure E-2. Screen to Set a New Password

		EN2000 LTE Router Phone/MTN#: Device Mode: Cell Failover					Changes:
en	cor <mark>ein</mark> etworks	Cell Signal: -96dBm Operation Status: Online using WAN					
1	Status System Network						
	System Administration Serv	ices Backup / Restore Reboot					
R	outer Password						
c	hanges the administrator passwo	rd for accessing the device					
	Password		2				
	Confirmation		2	<i>#</i>			
					@ Posst	C Cauco	Save & Apply
					W Reset	♥ Save	Save & Apply

2 On that screen, type the EN-2000's new password in the **Password** field; then type the same password in the **Confirmation** field.

Note: The passwords typed must match exactly, including use of uppercase letters or lowercase letters or both.

We recommend use of strong passwords. Get all passwords from your network administrator.

- 3 Select the Save & Apply button.
 - The EN-2000 uses the new password.

E.1.2 Configuring the EN-2000 for Recovery

This section describes steps to allow the EN-2000 to restart when certain criteria are met.

- 1 On the EN-2000 management screen, select the **System** tab; then select the **Services** tab.
 - The Screen to Configure System Services is displayed (Figure E-3).

Figure E-3. Screen to Configure System Services

encoreinetworks	over
Status System Network Logout Quickstart System Administration Services Backup / Restore	
Services	
Configure services Ping-Watchdog and Auto-Reboot	
Ping Watchdog	
Enable Ping Watchdog	O Enabling this reboots the device when the following ping failure criteria is met.
IP Address to Ping	8.8.8
Ping Interval (secs)	30 Pings sent at this interval after Startup delay
Startup Delay (secs)	600 Time to start watchdog pings after the reboot cycle is finished
Failure Count to Reboot	10 Device is rebooted after this many contiguous ping failures
Auto Reboot	
Enable Auto Reboot	🗐 🥥 Enabling this reboots the device when the following criteria is met.
Mode	By Time ● By Time is based on a 24 hour clock. By Number of Hours' is based on the number of hours to elapse after the previous reboot.
Time (HH:MM 24 Hours)	1241
	Reset Save Save Save Save Apply

- 2 On that screen, configure the following fields to set up the **Ping Watchdog**:
 - Enable Ping Watchdog: Select Enable only if you want the EN-2000 to restart when its connection to the network has been interrupted for a specified length of time.
 - IP Address to Ping: Enter the IP address of the device to ping. (This is usually the gateway's IP address, but we recommend use of any reliable, persistent IP address.)
 - Ping Interval: Number of seconds between pings.
 - **Startup Delay:** Number of seconds to wait after restarting before resuming pings.
 - Failure Count to Reboot: Number of successive pings that receive no response. When this number of failed pings is reached, the EN-2000 restarts.
- 3 Then configure the following fields to set up Auto Reboot:
 - Enable Auto Reboot: Select Enable only if you want the EN-2000 to restart on a regular basis.
 - Mode: Select a time of day to restart, or select the number of hours to wait after the previous restart.
 - Time:
 - If you selected By Time for the Mode, indicate the clock time (using a 24-hour clock).
 - If you selected By Number of Hours for the Mode, indicate the number of hours between restarts.

E.2 Configuring the EN-2000's Background Elements

The EN-2000 learns most of its information from its environment, and sets other parameters to support the function you select for the EN-2000. It is unlikely that the EN-2000 will need more than a quick configuration. (To use quick configuration, see the $EN-2000^{TM}$ Quick Configuration Guide.)

Background configuration includes assigning the EN-2000 its device name, and similar items. Confer with your network administrator for values to use in the configuration. See the following:

- Configuring the Device Name and Time of Day
- Configuring System Logging

E.2.1 Configuring the Device Name and Time of Day

- **1** To configure the EN-2000's identity within the network, and to configure time zone and time-of-day synchronization source for the EN-2000, do the following:
 - a Select the System management area tab.
 - **b** Then select the **System** configuration area tab.
 - c If necessary, select the General Settings detail tab.
 - ♦ The System Screen for General Settings is displayed (Figure E-4).

On the System Screen for General Settings, you can set a unique name for this EN-2000. You can also set its local time, and you can set a hierarchy of network time protocol (NTP) servers for synchronizing the EN-2000's time of day.

	EN2000 LTE Router Phone/MTN#: Device Mode: Cell Failover			Changes: 0
en	Core-networks Cell Signal: -125dBm Operation Status: Online using WAN A	Auto Refresh: on		
	Status System Network Logout Quickstart			
	System Administration Services Backup / Restore Reboot			
S	ystem			
	ere you can configure the basic aspects of your device.			
	System Properties			
	General Settings Logging			
	Local Time	Tue Sep 30 17:07:56 2014 🔲 Sync with	n browser	
	Hostname	EN2000		
	Timezone	America/New York		
	Time Synchronization			
	Enable NTP client			
	Provide NTP server			
	NTP server candidates	0.time-a.nist.gov 1.time-b.nist.gov 2.time-c.nist.gov 3.time-d.nist.gov	8) 8) 8) 8)	
			🔞 Reset 🖉 Save	Save & Apply

Figure E-4. System Screen for General Settings

2 In the Hostname field, type a name for the EN-2000, to identify it in the network. Then click the Save & Apply button (in the lower right corner of the screen).

Note: Get all names and IP addresses from your network administrator.

The EN-2000 saves its new name and uses the new name immediately.

Caution: If you type a non-permitted character, the entire name displays in red. If you try to save a name with non-permitted characters, a message similar to the message in Figure E-5 is displayed.

Figure E-5. Message about Invalid Entry

Some fields are invalid, cannot save v	alues!
ОК	

In that case, click the **OK** button to close the message. Examine the name and remove special characters until the name display returns to black. Then save the name again.

Some quick guidelines for device names follow:

- Spaces are not permitted in a device name.
- The name cannot end with a hyphen (-), a period (.), or an underscore (_).
- Most other special characters are not permitted anywhere in the name.
- **3** To use the browser's date and time settings, click the button to **Sync with browser**.
 - The EN-2000 management system adopts the browser's time-of-day settings.
- 4 Select the arrow on the right of the **Timezone** field to pull down a list of major cities in each time zone. In the pulldown menu, select the time zone the EN-2000 will use (usually the closest city in your time zone). Then select the **Save & Apply** button.

The EN-2000's management system displays the selected city's time.

E.2.2 Configuring System Logging

- **1** To set logging of system activities for the EN-2000, do the following:
- a Select the System management area tab.
- **b** Select the **System** configuration area tab.
- c Then select the Logging detail tab.
 - The Screen to Set System Logging is displayed (Figure E-6).

Figure E-6. Screen to Set System Logging

encore-networks	ailover	Changes:
Status System Network Logout Quickstart		
System Administration Services Backup / Restore	Reboot	
Here you can configure the basic aspects of your device.		
System Properties		
General Settings Logging		
System log buffer size	[16 (2) kiB	
External system log server	0.0.0.0	
External system log server port	514	
Log output level	Debug	
Cron Log Level	Normal	
Time Synchronization		
Enable NTP client	V	
Provide NTP server		
NTP server candidates	0 time-a nist gov xi 1 time-b nist gov xi 2 time-c nist gov xi 3 time-d nist gov *	
		🙆 Reset 🖉 Save 🔯 Save & Apply

2 On the Screen to Set System Logging, enter information into the following fields:

Note: Consult your network administrator to set values for these parameters.

- System Log Buffer Size (kilobytes)
- External System Log Server (IP address)
- External System Log Server Port (port number)
- Log Output Level (select from pulldown menu):
 - Debug
 - Info
 - Notice
 - Warning
 - Error
 - Critical
 - Alert
 - Emergency
- Cron Log Level (select from pulldown menu):
 - Debug
 - Normal
 - Warning

Note: To set the time of day, see Setting the Time of Day.

E.2.3 Setting the Time of Day

- **1** Do the following to navigate to any of the screens for system management.
- a Select the System management area.
- **b** Then select the **System** configuration area.
 - ✤ The System Screen for General Settings is displayed (Figure E-7).

Figure E-7. System Screen for General Settings

encore-networks		Changes:
Status System Network Logout Quickstart System Administration Services Backup / Restore Reboot		
System Here you can configure the basic aspects of your device. System Properties		
General Settings Logging Local Time	Tue Sep 30 17:07:56 2014 🚺 Sync with browser	
Hostname Timezone	EN2000 America/New York	
Time Synchronization		
Enable NTP client Provide NTP server		
NTP server candidates	0.time-a.nist.gov x 1.time-b.nist.gov x 2.time-c.nist.gov x 3.time-d.nist.gov x	
		Reset Save Save Apply

Note: Time-of-day **Time Synchronization** parameters are listed in the lower half of the screen (detail in Figure E-8). These parameters are listed regardless of the heading (**General Settings** or **Logging**) in the upper portion of the System Screen.

Figure E-8. System Screen, Time Synchronization Settings

Enable NTP client		
Provide NTP server		
NTP server candidates	0 time-a nist.gov × 1.time-b nist.gov × 2.time-c nist.gov × 3.time-d nist.gov *	

- 2 Consult your network administrator to determine whether the EN-2000 will provide time-of-day synchronization (substep a) or will receive that synchronization (substep b).
 - a If the EN-2000 will provide the time of day, select the box to Provide NTP Server. Go to step 3.
 - **b** In most cases, the EN-2000 will receive the time of day. In those cases:
 - i Select the box to Enable NTP Client.
 - ii Then enter the name of the first NTP server the EN-2000 will look for.

- iii In boxes below the principal NTP server field, enter names of additional NTP servers, in the order the EN-2000 will use.
- iv Select the box to the right of each field for an NTP server to activate or inactivate that NTP server.
- **3** When you have selected your preferences for the parameters in this procedure, select the **Save & Apply** button.
 - The changes are saved and are used immediately.

E.3 Software Management

The following sections describe management of the EN-2000 operating software:

- Saving or Retrieving the EN-2000's Configuration, on page 8
- Upgrading the EN-2000's Operating Software, on page 10

E.3.1 Saving or Retrieving the EN-2000's Configuration

To save or retrieve EN-2000's configuration, do the following:

- 1 On the EN-2000 management screen, select the **System** tab; then select the **Backup/Restore** tab.
- 2 If necessary, select the Actions panel.

♦ The Screen to Save or Retrieve Files is displayed (Figure E-9).

Figure E-9. Screen to Save or Retrieve Files

ion files. To reset the firmware to its initial state, click "Perform reset" (only possible with squeshfs images).
Concrate archive
Concrate archive
Concrate archive
Perform reset
p archive here.
Browse_ III Upload archive
e. Check "Keep settings" to retain the current configuration (requires an OpenWrt compatible firmware image).
Browse. Brash image.

Note: This screen can be used for the following actions:

- To save a back-up of the EN-2000's current configuration
- To restore a previous configuration to the EN-2000
- To reset the EN-2000 to its default configuration

(For the items listed above, continue to step 3.)

- To load new operating system software into the EN-2000 (For this item, see *Upgrading the EN-2000's Operating Software*, on page 10.)
- **3** Select one of the following actions:
 - To save the EN-2000's configuration, go to *Backing Up the EN-2000's Configuration*, on page 9.
 - To restore an earlier configuration to the EN-2000, go to *Restoring a Previous Configuration to the EN-2000*, on page 9.
 - To reset the EN-2000 to its default configuration, go to *Resetting the EN-2000 to its Default Configuration*, on page 10.

E.3.1.1 Backing Up the EN-2000's Configuration

To back up the EN-2000's configuration, do the following

- 1 On the Screen to Save or Retrieve Files (recall Figure E-9), select the **Generate Archive** button.
 - The EN-2000 names the file and stamps the file with the date and time (Figure E-10).

Opening backup-EN2000-2015-01-14.tar.gz
You have chosen to open:
backup-EN2000-2015-01-14.tar.gz
which is a: gzip
from: http://192.168.10.1
What should Firefox do with this file?
Open with Browse
Save File
Do this <u>a</u> utomatically for files like this from now on.
OK Cancel

Figure E-10. Screen to Verify Disposition of File

- 2 If your web browser lets you choose the folder that will hold the file, do so. (Otherwise, later you can move the file from the web browser's default folder to a configuration archive folder.)
- **3** Select the **OK** button.
- Caution: After you save the file, you can change the archive file's name or timestamp, but do not change the extension "tar.gz."

E.3.1.2 Restoring a Previous Configuration to the EN-2000

To restore a previous configuration, do the following:

1 On the Screen to Save or Retrieve Files (recall Figure E-9), in the row for **Restore Backup**, select the **Browse** button.

- A window allows you to select the directory and file.
- 2 Browse to the directory and select the configuration file to upload. (The file must have the extension "tar.gz.")
 - The names of the selected path and file are displayed in the **Restore** Backup field.
- 3 Then select the Upload Archive button.

Note: During the upload, the EN-2000's management system might display information similar to the message in Figure E-11.

Figure E-11.	Information	durina	Upload

System - Rebooting
Changes applied.
Waiting for changes to be applied

- After the upload, the management system displays the Log-In Screen.
- 4 On the Log-In Screen, type the user name and password; then select the button to Log In.
 - The EN-2000 software management screens open.

E.3.1.3 Resetting the EN-2000 to its Default Configuration

Note: The **Perform Reset** button on this screen has the same effect as the Reset button on the front of the EN-2000 chassis: It restores the factory defaults.

- 1 To reset the EN-2000 to its default configuration, select the **Perform Reset** button on the Screen to Save or Retrieve Files (recall Figure E-9).
- Caution: If you set the router to its default configuration, all parameters
 will lose the values you have configured for them, and the parameters will resume their default values. Select this button only if you cannot recover the EN-2000's configuration in any other way.

E.3.2 Upgrading the EN-2000's Operating Software

See the following:

- Preserving the EN-2000's Configuration during a Software Upgrade
- Loading a Software Upgrade

E.3.2.1 Preserving the EN-2000's Configuration during a Software Upgrade

The EN-2000 generates internal files when you configure its parameters. It uses these files to retain its configuration when its software is upgraded. The process is automatic; it does not require action from the user.

E.3.2.2 Loading a Software Upgrade

Note: You will need to get the software upgrade file (with the extension "img") from your network administrator before you can complete this procedure. As an alternative, you might also be able to download the software upgrade file to your local computer from your EN-2000 distributor's FTP server or website.

Note: As indicated in *Preserving the EN-2000's Configuration during a Software Upgrade*, the EN-2000 retains its configuration when its software is upgraded.

To upgrade the EN-2000's software, do the following:

- 1 On the EN-2000 management screen, select the **System** tab; then select the **Backup/Restore** tab.
- 2 If necessary, select the Actions panel.
 - The Screen to Save or Retrieve Files is displayed (Figure E-12).

Cell Signal:	s: Cell Fallover 12580m tatus: Online using WAN
atus <mark>System</mark> Network Logout Qu	
stem Administration Services Backup /	Restore Reboot
sh operations	
tions Configuration	
Backup / Restore Click "Generate archive" to download a tar archiv	e of the current configuration files. To reset the firmware to its initial state, click "Perform reset" (only possible with squashfs images).
Download backup:	Concernate archive
Reset to defaults:	Perform reset
To restore configuration files, you can upload a p	evicusly generated backup archive here.
Restore backup:	Browse 00 Upload archive
Flash new firmware image Upload a sysupgrade-compatible image here to n	place the running firmware. Check "Keep settings" to retain the current configuration (requires an OpenWrt compatible firmware image).
Keep settings:	×.
Image:	Browse 📴 Flash image

Figure E-12. Screen to Save or Retrieve Files

Note: This screen can be used for the following actions:

- To save a back-up of the EN-2000's current configuration
- To restore a previous configuration to the EN-2000
- To reset the EN-2000 to its default configuration

(For the items listed above, see *Saving or Retrieving the EN-2000's Configuration*, on page 8.)

or

- To load new operating system software into the EN-2000 (For this item, continue to step 3.)
- **3** Select the **Status**, **Overview** tabs to see the firmware version currently in use.
 - The Status Overview Screen is displayed (Figure E-13). The firmware information is listed in the third line from the top.

Figure E-13. Status Overview Screen

1	EN2000 LTE Router Ph Device Mode: Cell Failo		Chang	
cor <mark>ein</mark> etw	Orks Cell Signal: -125dBm Operation Status: Onli	ine using WAN Auto Refresh: on		
Status System Ne				
Overview Routes	System Log Realtime Graphs			
tatus				Uptime: 3d 3h 10m 50
System				
Device Name		EN2000		
Device Model		EN 2000		
Firmware Version		17322 03 12		
Local Time		Mon Mar 9 19:41:49 2015		
Cellular Informatio	n			
Cell Signal		-125 dBm		
IMEI		359692051021120		
SIM ID				
APN		ne01.VZWSTATIC		
Network				
	Network	Status		
		Uptime: 0h 0m 0s		
	CELL	MAC-Address: 94:B9:B4:18:BF:21		
		Protocol: dhcp		
	eth2	RX: 224.33 KB (4314 Pkts.) TX: 35.41 MB (90108 Pkts.)		
		Uptime: 3d 3h 9m 57s		
	LAN	MAC-Address: 00:A0:EB:03:00:55		
	EAN (合型)	Protocol: static		
	br-lan	RX: 146.05 MB (642604 Pkts.)		
	or-lan	TX: 1.68 GB (1217939 Pkts.) IPv4: 192.168.10.1/24		
		Uptime: 3d 3h 9m 53s		
	WAN	MAC-Address: 00:A0:EB:03:00:56		
	<u>R</u>	Protocol: dhep		
	eth 1	RX: 1.69 GB (1274296 Pkts.)		
	19 UT &	TX: 157.08 MB (684445 Pkts.) IPv4: 192.168.1.204/24		
DHCP Leases				
	Hostname	IPv4-Address	MAC-Address	Leasetime remaining
androi	id-7b5fda7277a8e491	192.168.10.216	84:7a:88:27:33:16	11h 21m 34s
	HP-p6-2016	192.168.10.216	38:60:77:82:55:1a	6h 54m 43s

Note: The firmware version might read as something similar to the following:

- 17322 03 12
- 4 For detailed firmware information, select the **Network**, **Failover**, and **Advanced** tabs.
 - The Troubleshooting Screen is displayed (Figure E-14, partial display of the screen). The detailed firmware information is listed as the top line.

Figure E-14. Troubleshooting Screen



Note: The firmware version detail might read as something similar to the following:

- 17322 03 12 (130)
- 5 Then select the **System**, **Backup/Restore**, and **Action** tabs to return to the Screen to Save or Retrieve Files (recall Figure E-12).
- 6 On the Screen to Save or Retrieve Files, if you want to retain the EN-2000's configuration, make sure the box to **Keep Settings** is checked.
- 7 On the Screen to Save or Retrieve Files, under the heading Flash New Firmware Image, in the row for Image (at the bottom of the screen), select the Browse button.

A window opens so that you can locate the *.img file.

8 Browse to the directory that contains the *.img file.

Figure E-15. Screen to Select the *.img File for a Software Upgrade

File name:	enpex-16M.img	-	All Files (*.*)	
			Open	Cancel

- **9** Highlight the *.img file to load. Then click on the **Open** button to select that *.img file.
 - The names of the selected path and file are displayed in the Image field at the bottom of the Screen to Save or Retrieve Files (Figure E-16).

Figure E-16. Screen to Save or Retrieve Files

Coropotworks Cell Signa	TE Router Phone/MTN#: ode: Cell Failover 1: 125/36m
	n Status: Online using WAN
Status System Network Logout	
System Administration Services Backup	p / Restore Reboot
lash operations	
utions Configuration	
Backup / Restore Click "Generate archive" to download a tar arch	hive of the current configuration files. To reset the firmware to its initial state, click "Perform reset" (only possible with squashfs images).
Download backup:	Generate archive
Reset to defaults:	🧔 Perform reset
To restore configuration files, you can upload a	i previously generated backup archive here.
Restore backup:	Browse_ Dpload archive_
Flash new firmware image	
(o replace the running firmware. Check "Keep settings" to retain the current configuration (requires an OpenWrt compatible firmware image).
Keep settings: Image:	
	wnloads/empex-16M.ing Browse_ [3] Flash image

- 10 In the Image row at the bottom of the Screen to Save or Retrieve Files, select the Flash Image button.
 - The EN-2000 calculates information for the upload and generates a Screen to Verify Loading the Software Upgrade (Figure E-17).

Figure E-17. Screen to Verify Loading the Software Upgrade

encor <mark>e n</mark> etworks	EN2000 LTE Router Phone/MTN#: Device Mode: Cell Fallover Cell Signai: -SedBm Operation Status: Online using WAN	Changes: (
Status System Network System Administration Service	Logout Quickstart ccs Backup / Restore Reboot	
Flash Firmware - Verify		
The flash image was uploaded. Bel Click "Proceed" below to start the	elow is the checksum and file size listed, compare them with the original file to ensure data integrity. flash procedure.	
Checksum: 69ab475e48a2e37e Size: 7.40 MB (15.69 MB avai Configuration files will be kep	ailable)	
	Cancel	el 🖸 Proceed

- **11** After you review the information on that screen, do one of the following:
 - **a** Select the button to **Proceed** with the software upgrade.

Note: The upgrade takes a few minutes. Go to step 12.

The files discussed in *Preserving the EN-2000's Configuration during a Software Upgrade* allow the software upgrade to retain the EN-2000's configuration.

- **b** Select the button to **Cancel** the software upgrade.
 - The upgrade is not performed. If you wish to try again, repeat step 3.
- 12 Watch the LEDs on the front of the EN-2000 chassis. When the LEDs flash to indicate normal activity, use the browser to open the EN-2000's Log-In Screen.
- **13** On the Log-In Screen, type the user name and password; then select the button to Log In.
 - The EN-2000 software management screens open.

Note: If you wish to verify use of the upgraded software, you can view the firmware version again (as described in step 3).