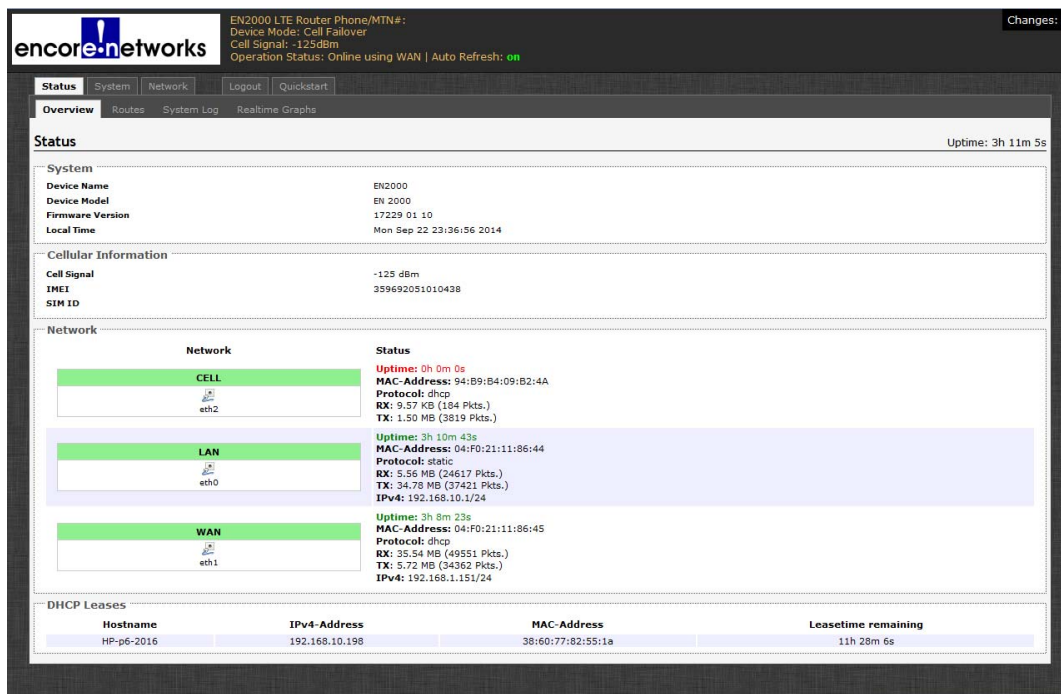


# EN-2000 System Administration

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

- 1 Log into the EN-2000. (For details, see [Logging In](#), in the document [Configuring General Settings for the EN-4000](#).)
  - ❖ The Status Overview Screen is displayed ([Figure 10-1](#)). This screen provides a summary of the EN-2000's operation and its ports.

Figure 10-1. Status Overview Screen



The screenshot shows the Status Overview screen for an EN-2000 LTE Router. The top navigation bar includes Status, System, Network, Logout, and Quickstart. The Overview tab is selected, with sub-tabs for Overview, Routes, System Log, and Realtime Graphs. The main content area is divided into several sections:

- Status:** Shows system information including Device Name (EN2000), Device Model (EN 2000), Firmware Version (17229 01 10), and Local Time (Mon Sep 22 23:36:56 2014). Uptime is 3h 11m 5s.
- Cellular Information:** Shows Cell Signal (-125 dBm), IMEI (359692051010438), and SIM ID.
- Network:** Displays status for three interfaces:
  - CELL (eth2):** Status is Up. Uptime: 0h 0m 0s. MAC-Address: 94:B9:B4:09:B2:4A. Protocol: dhcp. RX: 9.57 KB (184 Pkts.), TX: 1.50 MB (3819 Pkts.).
  - LAN (eth0):** Status is Up. Uptime: 3h 10m 43s. MAC-Address: 04:F0:21:11:86:44. Protocol: static. RX: 5.56 MB (24617 Pkts.), TX: 34.78 MB (37421 Pkts.).
  - WAN (eth1):** Status is Up. Uptime: 3h 5m 23s. MAC-Address: 04:F0:21:11:86:45. Protocol: dhcp. RX: 35.54 MB (49551 Pkts.), TX: 5.72 MB (34362 Pkts.). IPv4: 192.168.1.151/24.
- DHCP Leases:** A table showing active leases.
 

Hostname	IPv4-Address	MAC-Address	Leasetime remaining
HP-p6-2016	192.168.10.198	38:60:77:82:55:1a	11h 28m 6s

See the following:

- [General System Administration](#)
- [Software Management](#)

## 10.1 General System Administration

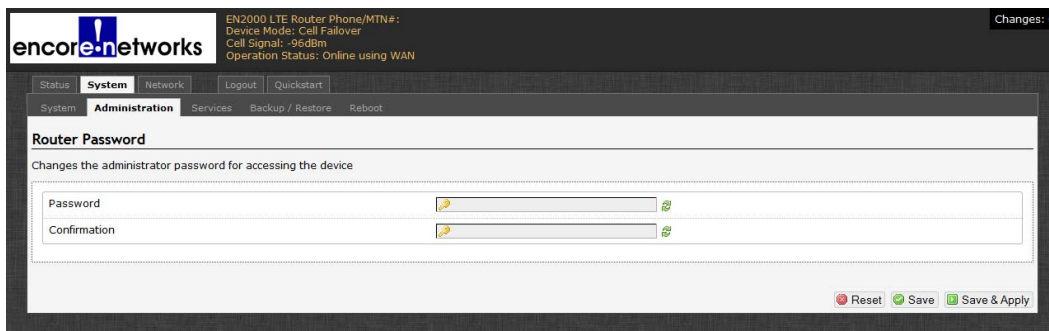
The following sections describe basic administrative configuration:

- [Changing the EN-2000's Password](#)
- [Configuring the EN-2000 for Recovery](#)

### 10.1.1 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 10-2](#)).

Figure 10-2. Screen to Set a New Password



- 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.

### 10.1.2 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 10-3](#)).

Figure 10-3. Screen to Configure System Services

The screenshot shows the 'Services' configuration page in the Encore Networks web interface. The page is titled 'Services' and contains two main sections: 'Ping Watchdog' and 'Auto Reboot'. The 'Ping Watchdog' section has fields for 'Enable Ping Watchdog' (checked), 'IP Address to Ping' (8.8.8.8), 'Ping Interval (secs)' (30), 'Startup Delay (secs)' (600), and 'Failure Count to Reboot' (10). The 'Auto Reboot' section has fields for 'Enable Auto Reboot' (checked), 'Mode' (By Time), and 'Time (HH:MM 24 Hours)' (12:41). At the bottom right, there are buttons for 'Reset', 'Save', and '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.

## 10.2 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™ 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](#)

### 10.2.1 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 10-4](#)).

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.

Figure 10-4. System Screen for General Settings

The screenshot displays the 'System' configuration page for an EN-2000 device. At the top, the device status is shown as 'Online using WAN | Auto Refresh: on'. The 'System' tab is selected, and the 'General Settings' sub-tab is active. The 'System Properties' section contains the following fields:

- Local Time:** Tue Sep 30 17:07:56 2014, with a 'Sync with browser' button.
- Hostname:** EN2000
- Timezone:** America/New York

The 'Time Synchronization' section includes:

- Enable NTP client:** Checked
- Provide NTP server:** Unchecked
- NTP server candidates:** A list of four servers: 0.time-a.nist.gov, 1.time-b.nist.gov, 2.time-c.nist.gov, and 3.time-d.nist.gov.

At the bottom right, there are three buttons: 'Reset', 'Save', and 'Save & Apply'.

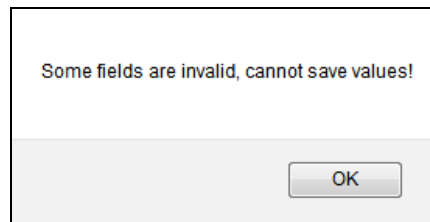
- 2 In the **Hostname** field, type a name for the EN-2000, to identify it in the network. Then click the **Save & Apply** button (in the lower right corner of the screen).

**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 10-5](#) is displayed.

Figure 10-5. Message about Invalid Entry



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.

## 10.2.2 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 10-6](#)).

Figure 10-6. Screen to Set System Logging

The screenshot shows the 'System' configuration page in the Encore Networks web interface. The page title is 'System' and it includes a navigation menu with 'System', 'Network', 'Logout', and 'Quickstart'. The main content area is titled 'System Properties' and contains two sections: 'General Settings' and 'Logging'. The 'Logging' section has the following fields:

- System log buffer size: 16 (unit: kiB)
- External system log server: 0.0.0.0
- External system log server port: 514
- Log output level: Debug (dropdown menu)
- Cron Log Level: Normal (dropdown menu)

Below the 'Logging' section is the 'Time Synchronization' section, which includes:

- 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 (list with delete and add icons)

At the bottom right of the page, there are three buttons: 'Reset', 'Save', and '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](#).

## 10.2.3 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 10-7).

Figure 10-7. System Screen for General Settings

**Note:** Time-of-day **Time Synchronization** parameters are listed in the lower half of the screen (detail in Figure 10-8). These parameters are listed regardless of the heading (**General Settings** or **Logging**) in the upper portion of the System Screen.

Figure 10-8. System Screen, Time Synchronization Settings

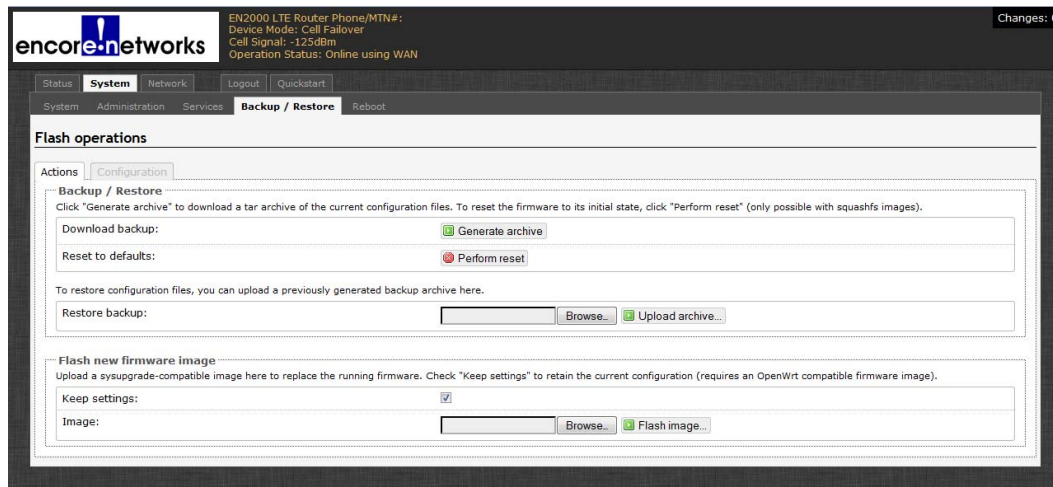
- 2 Consult your network administrator to determine whether the EN-2000 will provide time-of-day synchronization ([substep a](#)) or will receive that synchronization ([substep b](#)).
  - a If the EN-2000 will provide the time of day, select the box to **Provide NTP Server**. Go to [step 3](#).
  - 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.







Figure 10-9. Screen to Save or Load Configuration Files



### 3 Select one of the following actions:

- To save the EN-2000's configuration, go to [Backing Up the EN-2000's Configuration](#).
- To restore an earlier configuration to the EN-2000, go to [Restoring a Previous Configuration to the EN-2000](#).
- To reset the EN-2000 to its default configuration, go to [Resetting the EN-2000 to its Default Configuration](#).
- To load an upgrade for the EN-2000's operating software, go to [Upgrading the EN-2000's Operating Software](#).

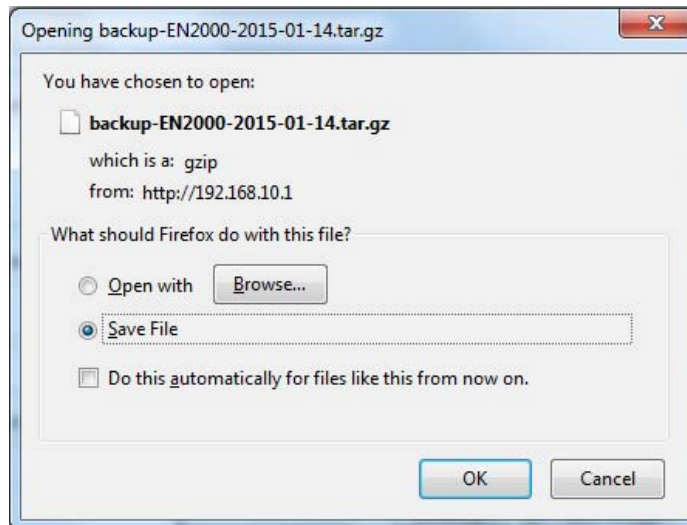
**Note:** The files discussed in [Preserving Software Configuration](#) allow the software upgrade to retain the EN-2000's configuration.

#### 10.3.2.1 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 Load Configuration Files (recall [Figure 10-9](#)), select the **Generate Archive** button.
  - ❖ The EN-2000 names the file and stamps the file with the date and time ([Figure 10-10](#)).

Figure 10-10. 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."

### 10.3.2.2 Restoring a Previous Configuration to the EN-2000

To restore a previous configuration, do the following:

- 1 On the Screen to Save or Load Configuration Files (recall [Figure 10-9](#)), 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 10-11](#).

Figure 10-11. Information during Upload



- ❖ 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.

### 10.3.2.3 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 Load Configuration Files (recall [Figure 10-9](#)).

! **Caution:** 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 configuration in any other way.

### 10.3.2.4 Upgrading the EN-2000's Operating Software

**Note:** As indicated in [Preserving Software Configuration](#), the EN-2000 retains its configuration when its software is upgraded.

- 1 To upgrade the EN-2000 software, do the following:
- 2 Select the **Status, Overview** tabs to see the firmware version currently in use. (For detailed information, select the **Network, Failover,** and **Advanced** tabs.)

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

- 17322 03 12 (122)

- 3 Then select the **System, Backup/Restore,** and **Action** tabs to return to the Screen to Save or Load Configuration Files (recall [Figure 10-9](#)).

**Note:** You might need to get the software upgrade file (with the extension ".img") from your network administrator before you can perform [substep 4](#).

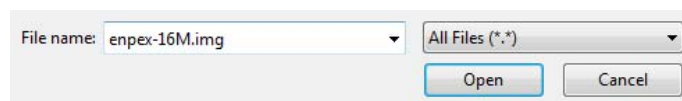
You might also be able to download the software upgrade file to your local computer from your EN-2000 distributor's FTP server or website.

- 4 On the Screen to Save or Load Configuration Files, under the heading **Flash New Firmware Image**, in the row for **Image**, select the **Browse** button.

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

- 5 Browse to the directory that contains the \*.img file.

Figure 10-12. Screen to Verify the \*.img File for Upgrade



- 6 Select **Open** to load the \*.img file.

❖ The names of the selected path and file are displayed in the **Image** field.

- 7 Then select the **Flash Image** button.

- ❖ The EN-2000 calculates information for the upload and generates a Screen to Verify Loading the Software Upgrade (Figure 10-13).

Figure 10-13. Screen to Verify Loading the Software Upgrade



- After you review the information on that screen, do one of the following:
  - Select the button to **Cancel** the software upgrade.
    - ❖ The upgrade is not performed. If you wish to try again, repeat [step 2](#).
  - Select the button to **Proceed** with loading the software upgrade.
 

**Note:** The upgrade takes a few minutes. Continue to [substep 9](#).
- 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.
- 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 12](#)).