



# Web User Interface

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## Introduction to the Web User Interface

The Web User Interface (WebUI) provides network administrators with a single solution for provisioning, monitoring, and optimizing devices. After you complete the hardware installation, you need to setup the device with a configuration required to enable traffic to pass through the network. On your first day with your new device, you can perform a number of tasks to ensure that your device is online, reachable and easily configured. This is referred to as the Day 0 interface.



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**Note** A Day 0 configuration is defined as a device that is fresh out of the box with no startup-configuration.

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After the initial Day 0 configuration, the WebUI can be used for day to day configuration.

Once the router boots up in Day 0, the PC can connect to the 192.168.1.x network and can access WebUI using the IP address of 192.168.1.1 with any browser. After the configuration is applied through the WebUI, the router will display the message "Day 0 config done. Stopping autoinstall".

## Day 0 Cellular Mode

Cisco IOS XE release 17.9.1 provides new functionality allowing the router to be configured on Day 0 through the cellular pluggable module. This assumes a cellular pluggable module is already installed.

This mode helps configuring the Cellular APN, assuming the customer gets a private APN (or private LTE/5G) as WAN backhaul. By doing so, the APN value is stored in the modem. Once the router reboots, it is reset to factory-default, enabling the router to perform PnP over Cellular when private APN is used.



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**Note** Advanced Mode is needed in order to set up Cellular WAN, including public or private APN. This should be provided by your SIM's service provider.

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**Note** The pluggable interface is not hot swappable. If you wish to change a SIM, power off the router.

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The steps to configure through the cellular pluggable module follow:

1. Select the Cellular interface in the **WAN type**.
2. Enter the APN name.
3. There is no need to select a backup WAN.
4. Reboot the router.

PnP will now be able to run with private APN to connect to IOS OD, vManage, or DNA-C.

## Day 0 Web User Interface

Effective with IOS-XE Release 17.1.1, the Day 0 Web User Interface (WebUI) will be supported on the IR1101. Day 0 WebUI is supported only on LAN ports. These are FastEthernet ports 0/0/1 – 0/0/4 on the IR1101. Connect either a Windows, Linux or Mac PC/Laptop to one of the LAN ports of the IR1101 and boot the router on Day 0. The PC/Laptop should be configured to obtain an IP address through DHCP.

## Additional Modem Support for CAT 6 and CAT 7 Cellular Pluggable Modules

This release offers support for additional modems on the IR1101 and the IR1800.

The LTE Cat6 Pluggable Interface Modules (PIMs) will be updated with Cat7 modems. The following table shows the product transition:

**Table 1: Cat6 to Cat7 Transition**

Cat6 (Current)	Cat7 (Refreshed)
Sierra Wireless EM7455/7430	Sierra Wireless EM7411/7421/7431
Cat6 LTE Advanced	Cat7 LTE Advanced

The following are the new PIDs that will be available:

- P-LTEA7-NA
- P-LTEA7-EAL
- P-LTEA7-JP
- P-5GS6-R16SA

**Important**

For the new PIDs mentioned above, the following cellular functions have not been tested, and are not supported with IOS XE release 17.13.1 although the CLI commands may permit:

- GNSS/NMEA
- Cellular Dying-Gasp
- eSIM/eUICC support

**Note**

There is no new or changed command line interface with these new modems.

## Additional Modem Support for Cellular Pluggable Modules

Cisco IOS-XE Release 17.14.1 enhances connectivity options and throughput on the IR1101 and IR1800 platforms by supporting additional cellular modems:

- CAT 7 Modems:
  - P-LTEA7-NA
  - P-LTEA7-EAL
  - P-LTEA7-JP
- 5G Modem:
  - P-5GS6-R16SA-GL




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**Note** CAT 7 modems support GNSS and NMEA streaming, while currently P-5GS6-R16SA-GL module does not support GPS and NMEA streaming.

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## Galileo Support on the LTE Pluggable Modules

With Cisco IOS XE 17.11.1a and earlier, the only GNSS constellation supported was GPS. This release introduces support for Galileo.




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**Note** Only ONE constellation can be enabled at a time.

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There are new CLI options available to support the new constellation:

### Configuration Commands

```
config# controller cellular <slot/port>
(config-controller)# <no> lte gps constellation <gps | galileo | gnss >
```

Example:

```
(config-controller)#lte gps constellation ?
galileo  select Galileo as active constellation
gps      select GPS as active constellation
gnss     select multiple GNSS as active constellation
```




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**Note** The default setting is gps mode.

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The new galileo and gnss options in the above CLI are used to configure Galileo and Multiple/Simultaneous GNSS (GPS + Galileo etc) respectively.

If you disable the GPS configuration, ensure there is no constellation configured, consistent with GPS mode configuration. For example:

```
config# controller Cellular 0/1/0
(config-controller)# no lte gps constellation gps
```

### Show Commands

The following example shows the current GNSS constellation as Galileo:

```
#show cellular 0/1/0 gps detail
GPS Feature = enabled
GPS Mode Configured = standalone
Current Constellation Configured = galileo | gps | gnss
GPS Port Selected = Dedicated GPS port
GPS Status = GPS acquiring
```

Any changes made to the configuration will require the router to be rebooted.

More information is available in the [Cellular Pluggable Interface Module Configuration Guide](#).

## GPS Mode Enabled By Default

In IOS XE versions prior to 17.9.1, GPS was enabled by default, however, GPS Mode was disabled by default. This required that the user perform an additional modem power-cycle after the router came up in order to use GPS.

Starting with IOS XE 17.9.1, GPS Mode will be enabled by default, and will be set to standalone mode. This will help reduce the cellular link up time.



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**Note** This only applies to the cellular based GPS. This does not apply to the GPS/GNSS module in IR1800 (DR module), IR8140 (native GPS) and IR8340 (Timing module).

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Use the following command to check cellular GPS status:

```
Router# show cellular <slot> gps
auto-reset Enable reset modem automatically after configuring GPS enable or mode
```

## Guidelines and Limitations

The following are Guidelines and Limitations for the IR1101 and the IR1800:

### IR1101

Effective with IOS-XE Release 17.3.1, the Day 0 Web User Interface (WebUI) will be supported on the IR1101. Day 0 WebUI is supported only on LAN ports. These are FastEthernet ports 0/0/1 – 0/0/4 on the IR1101. Connect a PC to one of the LAN ports of the IR1101 and boot the router on Day 0. The PC can be configured to use DHCP or with a static IP address of 192.168.1.2/255.255.255.0.

The following are limitations to the Day 0 feature:

- The WebUI is not supported on the 1G port because this interface is dedicated to PnP. It is only supported on the 100M ports 1-4.
- Plug and Play (PNP) cannot be used if router is being used to configure using Day 0 WebUI as PNP will be aborted once the configuration is applied through Day 0 WebUI.
- Starting from release 17.1.2, an explicit **write memory** is not needed once the configuration is applied through the WebUI.

### IR1800

The Day 0 Web User Interface (WebUI) is supported on the IR1800. Day 0 WebUI is supported only on LAN ports. These are GigabitEthernet ports 0/1/0 – 0/1/3 on the IR1800. Connect a PC to one of the LAN ports of the IR1800 and boot the router on Day 0. The PC can be configured to use DHCP or with a static IP address of 192.168.1.2/255.255.255.0.

The following are limitations to the Day 0 feature:

- The WebUI is not supported on the GigabitEthernet 0/0/0 port. It is only supported on the LAN ports GigabitEthernet0/1/0 through GigabitEthernet0/1/3.

- Plug and Play (PNP) cannot be used if router is being used to configure using Day 0 WebUI as PNP will be aborted once the configuration is applied through Day 0 WebUI.

## Configuring Your Computer to Connect to the Router

The following section provides guidance for configuring your computer to properly interface with the IR1101.

You can access the application from a client web browser. Ensure that the following web client requirements are met:

- Hardware—A Mac (OS version 10.9.5) or Windows (OS version 10) laptop or desktop compatible with one of the following tested and supported browsers:
  - Google Chrome 59 or later
  - Mozilla Firefox 54 or later
  - Apple Safari 10 or later
  - Microsoft Edge browser
- Display resolution—We recommend that you set the screen resolution to 1280 x 800 or higher.

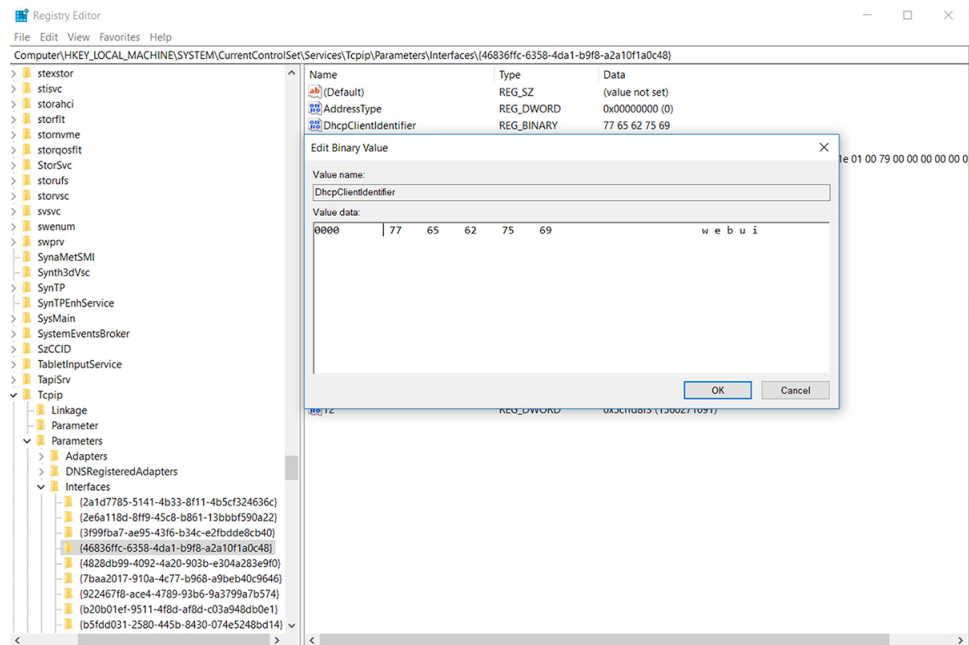
## Connecting to the Router Using DHCP

Set up the DHCP Client Identifier on the client to get the IP address from the router, and to be able to authenticate with Day 0 login credentials.

### Setting up the DHCP Client Identifier on the client for Windows

1. Type **regedit** in the Windows search box on the taskbar and press **enter**.
2. If prompted by User Account Control, click **Yes** to open the Registry Editor.
3. Navigate to **Computer\HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters\Interfaces\** and locate the **Ethernet Interface Global Unique Identifier (GUID)**.
4. Add a new REG\_BINARY **DhcpClientIdentifier** with Data **77 65 62 75 69** for **webui**. You need to manually type in the value.

Figure 1: Setting up DHCP Client Identifier on Windows

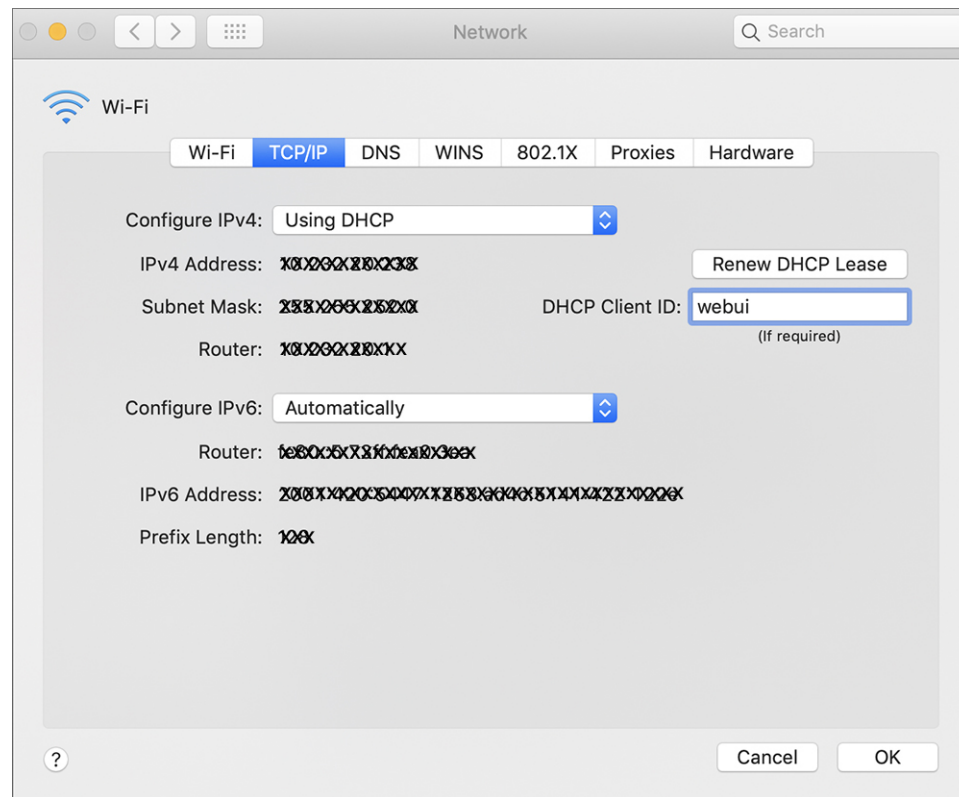


- Restart the PC for the configuration to take effect.

### Setting up the DHCP Client Identifier on the client for MAC

- Go to **System Preferences > Network > Advanced > TCP > DHCP Client ID:** and enter **webui**.

Figure 2: Setting up DHCP Client Identifier on MAC



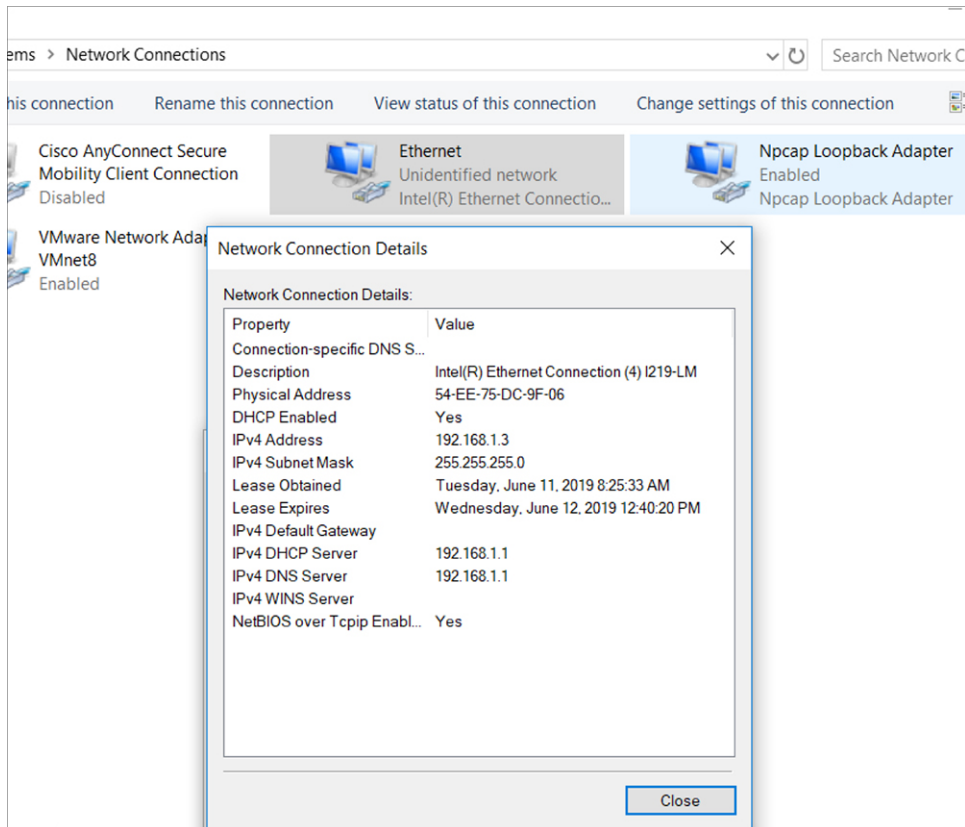
2. Click **OK** to save the changes.

### Continuing with the Configuration Wizard

The bootup script runs the configuration wizard, which prompts you for basic configuration input: (**Would you like to enter the initial configuration dialog? [yes/no]:** ). To configure Day 0 settings using the web UI, do not enter a response. Perform the following tasks instead:

1. Make sure that no devices are connected to the router.
2. Connect one end of an ethernet cable to one of the downlink (non-management) ports on the active supervisor and the other end of the ethernet cable to the host (PC/MAC).
3. Set up your PC/MAC as a DHCP client, to obtain the IP address of the router automatically. You should get an IP address within the 192.168.1.x/24 range.



**Figure 3: Obtaining the IP Address**

It may take up to three mins. You must complete the Day 0 setup through the web UI before using the router terminal.

4. Launch a web browser on the PC and enter the router IP address (**https://192.168.1.1**) in the address bar.
5. Enter the Day 0 username **webui** and password **cisco**.

## Configuring Basic Mode WebUI through the Browser

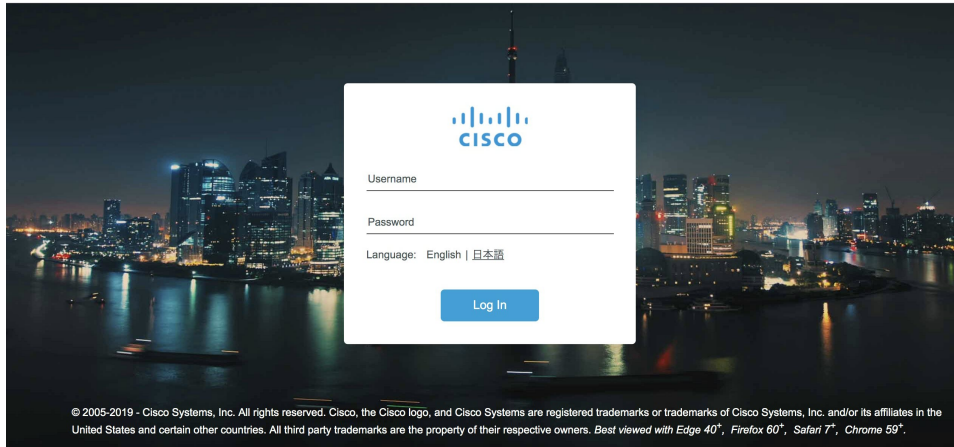
The following steps guide you through the process of using the browser on your PC/laptop to configure the WebUI.

### Procedure

#### Step 1

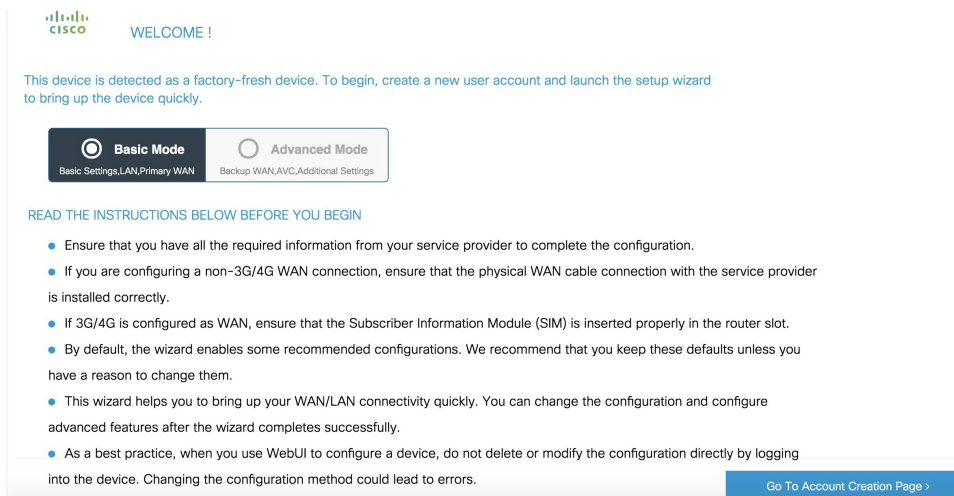
Open your browser and enter 192.168.1.1 in the address bar. The Login Screen appears. Enter the Username **webui** and the Password **cisco**. Then click **Log In**.

Figure 4: Login Screen

**Step 2**

The Welcome Screen appears. Select Advanced Mode or Basic Mode. Basic Mode allows for configuring Basic settings, LAN, and a Primary WAN. Advanced Mode allows you to configure an additional Backup WAN, AVC, as well as additional settings. For the purposes of this section, Basic Mode is used. Select **Basic Mode**.

Figure 5: Welcome Screen

**Step 3**

Click **Go To Account Creation Page**. The Create New Account Screen appears. Create a new Login Name and Password to access the WebUI.

Figure 6: Create New Account Screen

**Step 4**

Click **CREATE & LAUNCH WIZARD**. The Basic Settings Screen appears. Provide a Router Name (hostname), Domain Name, Time Zone and Date & Time Mode.

Figure 7: BASIC SETTINGS Screen

**Step 5**

Click **LAN SETTINGS**. The LAN Configuration Screen appears. Enter the webui\_dhcp Pool Name, VLAN interface IP address, and select the interface that is connected to your laptop from the list of available interfaces.

Figure 8: LAN Configuration Screen

**LAN Configuration**

Pool Name\*

Network\*

Create and Associate Access VLAN  ENABLED

Access VLAN\*

IP Address\*

Available (3)

- FastEthernet0/0/2 →
- FastEthernet0/0/3 →
- FastEthernet0/0/4 →

Selected ( 1 )

- FastEthernet0/0/1 ←

**HELP AND TIPS**

If you want to increase the DHCP Pool size or are planning to create a new DHCP pool with a different IP network for LAN, you can change it here.

< Basic Settings PRIMARY WAN SETTINGS >

**Step 6**

Click **PRIMARY WAN SETTINGS**. The PRIMARY WAN SETTINGS Screen appears. Configure the WAN interface by selecting the WAN Type and Interface from the available options. Next enter your DNS IP address information and select Enable/Disable NAT.

Figure 9: Primary WAN Interface Screen

**PRIMARY WAN**

WAN Type\*

Interface\*

**Connection and Authentication**

PPPoE  DISABLED

**DNS / IP Address**

Get IP automatically from ISP  NO

IP Address\*

Subnet Mask\*

Get DNS Server info directly from ISP  YES

NAT  ENABLED

**HELP AND TIPS**

Select the type of WAN Connection.

Select the Ethernet interface for configuring Ethernet WAN.

Select the appropriate IP address configuration information based on whether you are configuring an IPv4 or IPv6 address. Specify the details for the IP address depending on whether the IP address is dynamically or statically assigned.

It is recommended to enable NAT for WAN interfaces.

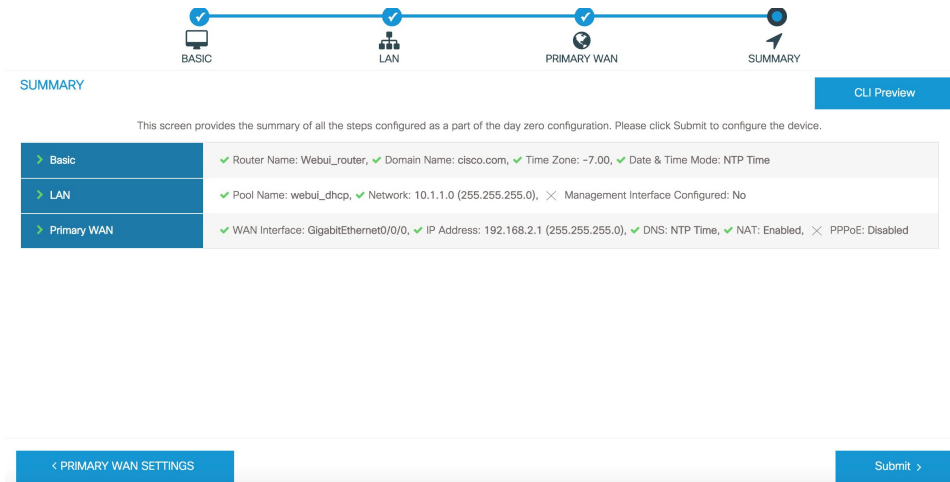
Username and password are to be obtained from service provider if PPPoE option is enabled and PAP or CHAP is preferred as authentication mechanism.

< LAN SETTINGS Day 0 Config Summary >

**Step 7**

Click **Day 0 Config Summary**. The Review Summary Screen appears. Verify your entries before applying the configuration.

Figure 10: Summary Screen

**Step 8**

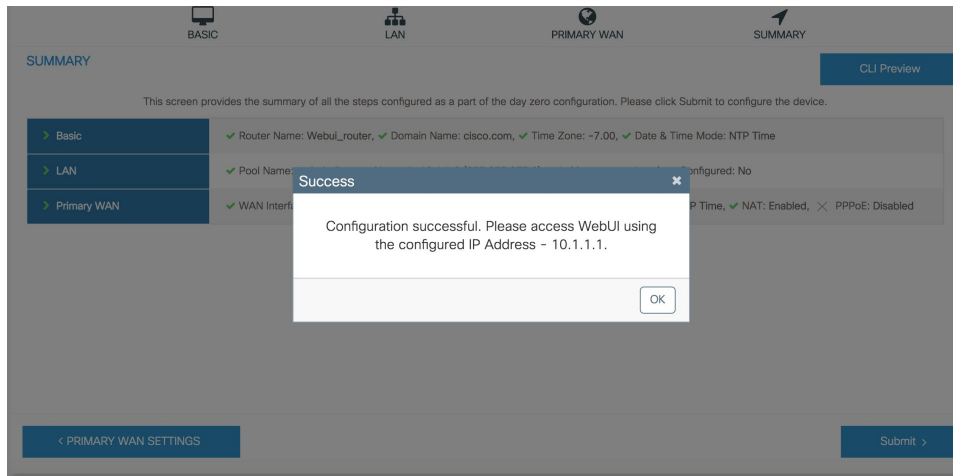
(Optional) You can click on **CLI Preview** to see the Configuration that is being applied to the router. Close the CLI Preview and if you are ready, Click **Submit**.

Figure 11: CLI Preview Screen

**Step 9**

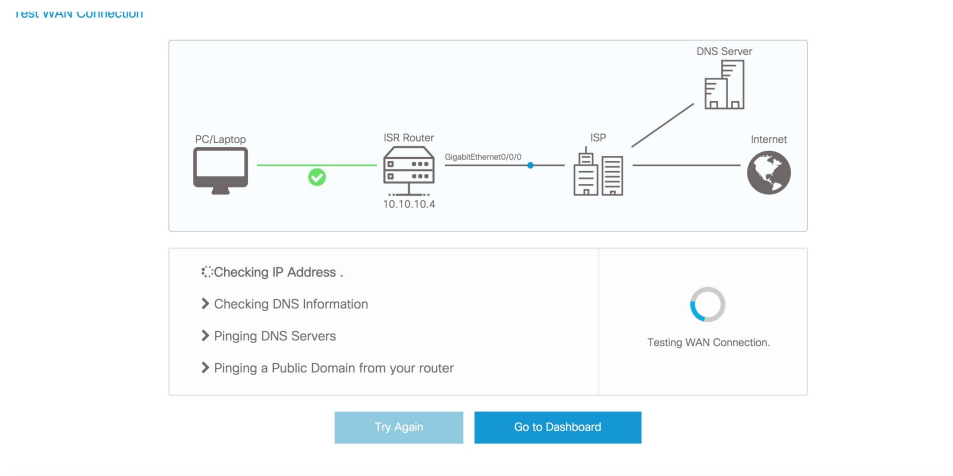
After clicking on **Submit**, a dialog box will appear which informs you that the configuration has been applied successfully. The new WebUI ip address is also presented.

Figure 12: Submit Dialog Box

**Step 10**

If you have web connectivity, the device will try to connect. It is recommended that you close the browser session and move to the newly configured WebUI ip address.

Figure 13: Test VLAN Connection Screen



## Configuring Advanced Mode WebUI through the Browser

The following steps guide you through the process of using the browser on your PC to configure the WebUI.

Make sure your laptop is configured to obtain an IP address through DHCP, or assign an IP address *n.n.n.n* matching the default subnet.

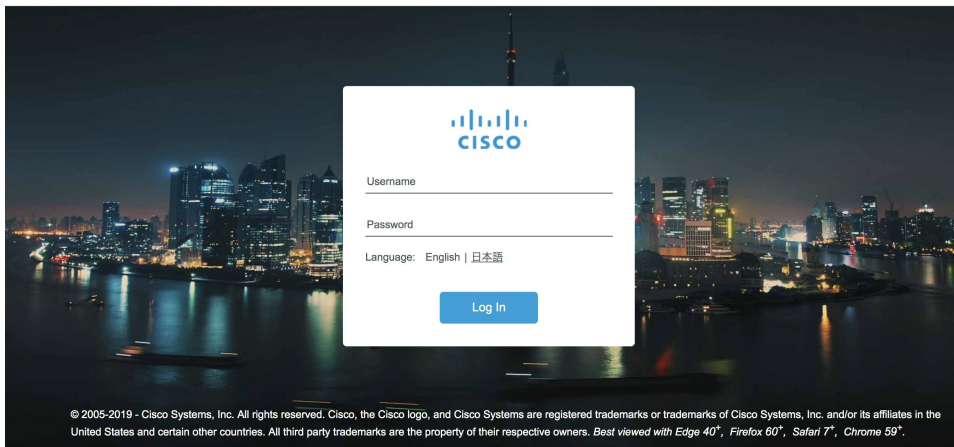


**Note** Advanced Mode is needed in order to set up Cellular WAN, including public or private APN.

## Procedure

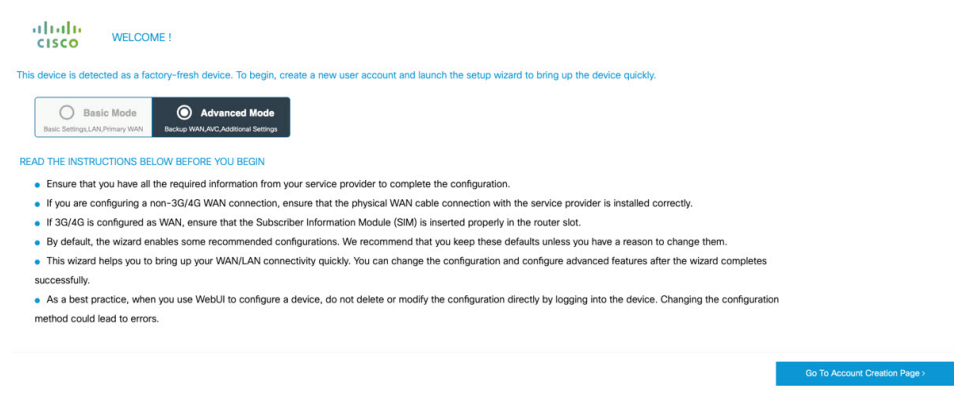
**Step 1** Open your browser and enter 192.168.1.1 in the address bar. The Login Screen appears. Enter the Username **webui** and the Password **cisco**. Then click **Log In**.

**Figure 14: Login Screen**



**Step 2** The WELCOME screen appears. Select Advanced Mode or Basic Mode. Basic Mode allows for configuring Basic settings, LAN, and a Primary WAN. Advanced Mode allows you to configure an additional Backup WAN, AVC, as well as additional settings. For the purposes of this section, Advanced Mode is used.

**Figure 15: WELCOME Screen**



**Step 3** Select **Advanced Mode**, then click **Go To Account Creation Page**. The Create New Account screen appears. Create a new Login Name and Password to access the WebUI.

Figure 16: Create New Account Screen

**Step 4** Click **CREATE & LAUNCH WIZARD**. The LAN Configuration screen appears. Provide a Pool Name, Network IP Address, Subnet, Access VLAN, and Device IP Address. A list of available interfaces is shown to select from.

Figure 17: LAN Configuration Screen

**Step 5** Click **PRIMARY WAN SETTINGS**. The WAN Configuration screen appears. Select the WAN Type and Interface from the pull-downs. Provide an APN (Access Point Name) from your LTE Service Provider, and then select the DNS and IP Address settings for your network.



Figure 18: WAN Configuration Screen

**Step 6** Click **BACKUP WAN SETTINGS**. The BACKUP WAN Configuration screen appears. Select the button to Enable or Disable a backup WAN.

Figure 19: BACKUP WAN Configuration

**Step 7** Click **Day 0 Config Summary**. The SUMMARY screen appears. Verify your entries before applying the configuration.

Figure 20: Summary Screen

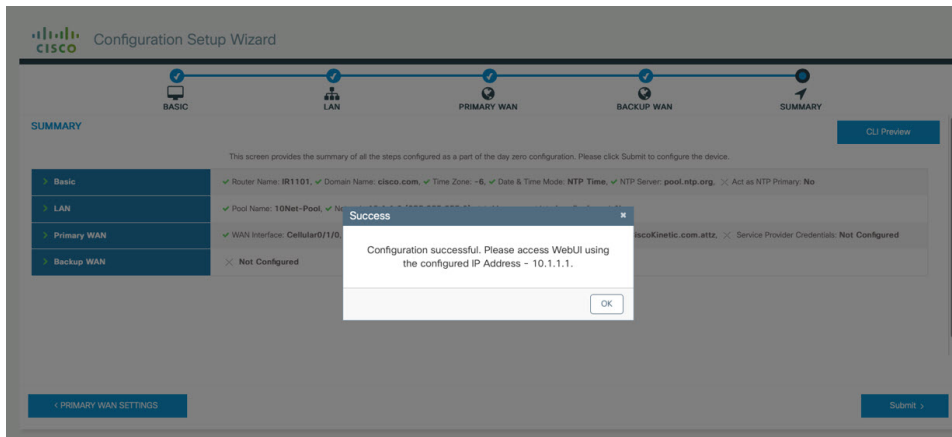
Step	Configuration Summary
Basic	✓ Router Name: IR1101, ✓ Domain Name: cisco.com, ✓ Time Zone: -6, ✓ Date & Time Mode: NTP Time, ✓ NTP Server: pool.ntp.org, ✗ Act as NTP Primary: No
LAN	✓ Pool Name: 10Net-Pool, ✓ Network: 10.1.1.0 (255.255.255.0), ✗ Management Interface Configured: No
Primary WAN	✓ WAN Interface: Cellular0/1/0, ✓ IP Address: NTP Time, ✓ DNS: NTP Time, ✓ NAT: Enabled, ✓ APN Name: CiscoKinetic.com.attz, ✗ Service Provider Credentials: Not Configured
Backup WAN	✗ Not Configured

**Step 8** (Optional) You can click on **CLI Preview** to see the Configuration that is being applied to the router. Close the CLI Preview, and if you are ready, click **Submit**.

**Note** A CLI Preview example is found at the end of this section.

**Step 9** After clicking on **Submit**, a dialog box will appear which informs you that the configuration has been applied successfully. The new WebUI ip address is also presented.

**Figure 21: Submit Dialog Box**



## Example

The following is an example of a CLI Preview:

```

ip domain name cisco.com
clock timezone GMT -6 00
ntp server pool.ntp.org

username admin privilege 15 secret 0 Mjc1N0dsb2NrIQ==

hostname "IR1101"
interface vlan 1
ip address 10.1.1.1 255.255.255.0
no shutdown
vlan 1
interface FastEthernet0/0/1
switchport access vlan 1
switchport trunk native vlan 1
switchport mode access
no shutdown
interface FastEthernet0/0/2
switchport access vlan 1
switchport trunk native vlan 1
switchport mode access
no shutdown
interface FastEthernet0/0/3
switchport access vlan 1
switchport trunk native vlan 1
switchport mode access
no shutdown
interface FastEthernet0/0/4
switchport access vlan 1

```

```
switchport trunk native vlan 1
switchport mode access
no shutdown
ip dhcp pool 10Net-Pool
dns-server 10.1.1.1
network 10.1.1.0 255.255.255.0
import all
default-router 10.1.1.1
lease 0 2

ip dhcp excluded-address 10.1.1.1

ip dns server
ip dns view default
default dns forwarder
default dns forwarding
default domain lookup
default domain name-server
interface Cellular0/1/0
description primary_wan
ip address negotiated
dialer in-band
dialer-group 1
pulse-time 1
shutdown
no shutdown
ip nat outside
exit
dialer-list 1 protocol ip permit

controller Cellular 0/1/0
lte sim data-profile 2 attach-profile 2 slot 0

ip route 0.0.0.0 0.0.0.0 Cellular0/1/0

ip nat inside source list 197 interface Cellular0/1/0 overload
access-list 197 permit ip any any
```

## WebUI Dashboard

After completing the Day 0 setup, the WebUI can now be used for day to day administration. The WebUI opens up to an easy to use dashboard.



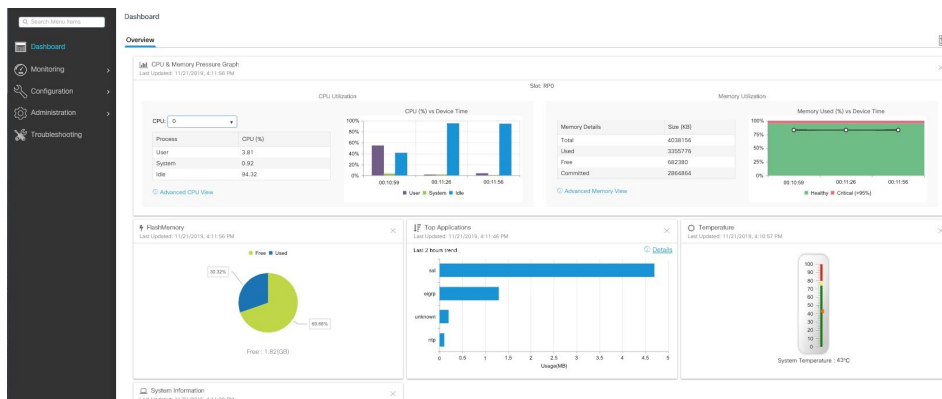
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**Note** WebUI feature support may vary based on the license and platform type of your device.

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The following figure shows the dashboard:

Figure 22: Dashboard



The following table provides an overview of the dashboard.

Dashboard	View dashlets that give you a snapshot of CPU and memory utilization and system information.
Monitoring	Monitor your network on a daily basis and perform other ad hoc operations related to network device inventory and configuration management.
Configuration	Configure your device.
Administration	Specify system configuration settings and user administration settings.
Troubleshooting	Troubleshoot connectivity problems and packet loss using Ping and Traceroute, and monitor device health and performance using web server logs and syslogs.

## Cisco WebUI Access Point Name (APN)

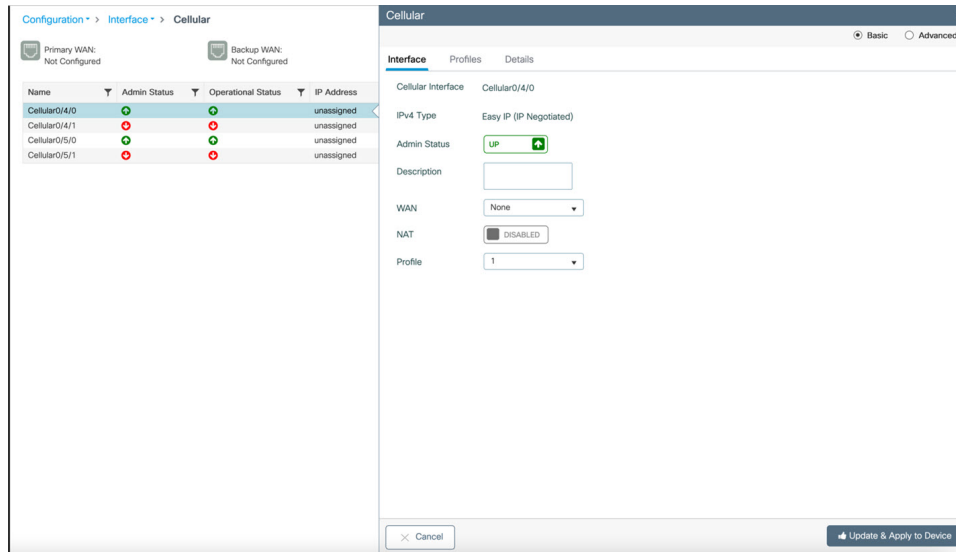
IOS XE 17.9.1 added the ability to add, edit, or delete the APN from the Cisco WebUI Interface. The following provides an overview of how to perform this function.



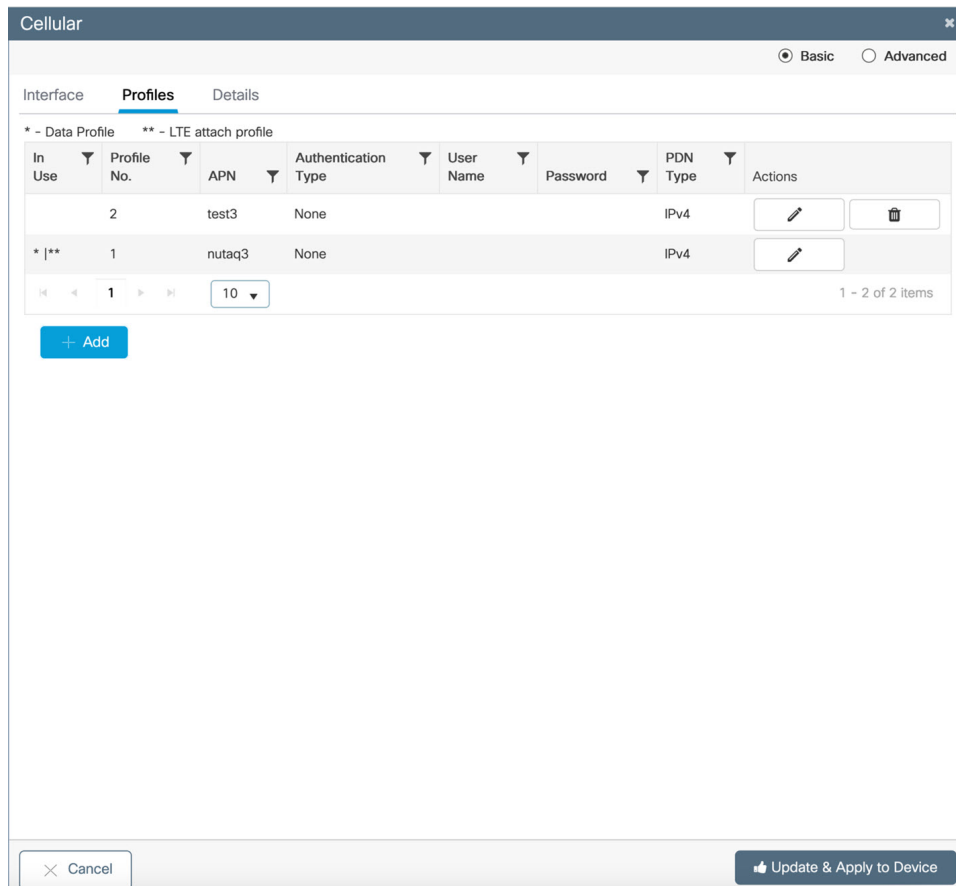
**Note** This section only describes new functionality and is not a complete overview of the WebUI.

### Adding the APN

From the WebUI, navigate to **Configuration > Interface > Cellular**. Double click on the cellular interface based upon your platform.



On the Cellular window, click on the **Profiles** tab.



From the **Profiles** tab, you can Add, Delete, or Edit the APN. Once the profile is modified, click on **Update & Apply to Device** at the bottom of the window.

## Changing the SIM Slot

By default, the APN is attached to SIM slot 0. You can change the APN to SIM slot 1 by using the WebUI.

From the WebUI, navigate to **Configuration > Interface > Cellular**. Click on the **Advanced** radio button on the top of the window.

Cellular
✕

Basic
  Advanced

Interface

Controller

Profiles

Details

Cellular Interface	Cellular0/4/0	Data Profile	1
IPv4 Type	Easy IP (IP Negotiated)	Attach Profile	1
Admin Status	<span style="border: 1px solid green; padding: 2px;">UP</span>	Dialer In-Band	<span style="border: 1px solid green; padding: 2px;">ENABLED</span>
Description	<input style="width: 80%;" type="text"/>	Dialer Idle Timeout	<input style="width: 50%;" type="text" value="0"/> ⓘ
WAN	<input style="width: 80%;" type="text" value="None"/>	Dialer Group	<input style="width: 50%;" type="text" value="1"/> ⓘ
NAT	<input checked="" type="checkbox"/> DISABLED	Pulse Time	<input style="width: 50%;" type="text" value="1"/> ⓘ
		Load Interval	<input style="width: 50%;" type="text" value="30"/> ⓘ

✕ Cancel

Update & Apply to Device

Click on the **Controller** tab at the top of the window.

The screenshot shows the 'Cellular' configuration window in the Cisco WebUI. The window has a title bar with 'Cellular' and a close button. Below the title bar, there are two radio buttons: 'Basic' (unselected) and 'Advanced' (selected). The main content area is divided into four tabs: 'Interface', 'Controller' (selected), 'Profiles', and 'Details'. Under the 'Controller' tab, there are three configuration items: 'Primary SIM Slot' with a dropdown menu showing '0', 'Changing the link recovery' with a dropdown menu showing '0', and 'Link Recovery' with a dropdown menu showing '1'. A 'Cancel' button is located at the bottom left, and an 'Update & Apply to Device' button is at the bottom right.

Click on the Primary SIM Slot pull-down and select slot 1. Click on **Update & Apply to Device** on the bottom of the window.

