IP Address and Pre-configuration Information

Ethernet Connectivity: Connect your workstation or device to the Digi Cellular Device via one of these methods:

> Direct from workstation to Digi Cellular Device via an Ethernet crossover cable
> Via network hub or switch using a straight-thru Ethernet cable

Ethernet Port IP Addressing: Follow the Quick Start Guide and assign the Digi Cellular Device an IP Address. In most cases a static IP address is desired.

DHCP Sever: The Digi Cellular Device includes a DHCP server and can provide IP address configuration to remote devices and/or workstations. DHCP server is on by default and is configured to provide workstation IP addresses starting at 192.168.1.100.

Static IP Addresses: If static IP addresses are used, disable the Digi Cellular Device DHCP server via Configure > Network > DHCP Server Settings and follow these directions:

> 1. In order to properly communicate via the Digi Cellular Device, your workstation should be in the same subnet as the Digi Cellular Device. The simplest way to accomplish this is to use the Digi Cellular Device's DHCP server. If you are using the DHCP server, and the Digi device is at IP address 192.168.1.1, you should configure your workstation to be something like:

> > IP address: 192.168.1.2
> > Subnet mask: 255.255.255.0
> > Default gateway: 192.168.1.1 (i.e. the IP address of
> > Digi Cellular Device)

> 2. As shown above, any device using the Digi Cellular Device as a gateway via the cellular wireless network must have its default gateway configured to the Digi Cellular Device's Ethernet port IP address.

> 3. DNS Server IP addresses: If you plan to "browse" the Internet or make other outbound connections that utilize DNS names (e.g., www.digi.com), the carrier's DNS server IP addresses should be entered into the workstation's IP configuration. For example, for most Cingular® Blue APN types use 209.183.48.10 & .11. DNS info can be confirmed once the Digi Cellular Device has connected to the cellular network using the Digi Cellular Device WebUI via Administration > System Info > Mobile.

Changing the Digi Connect IP Address: The Digi Cellular Device IP address settings can be changed using the built-in WebUI or via command line.

Via Command Line: Use either the console port and a terminal emulation program or telnet to the Digi Cellular Device's IP address. Use the "`set net`" command similar to:

```
set net ip=172.16.5.88 mask=255.255.0.0 gateway=172.16.5.88
```

Type `set net` with no parameters to verify the settings. Reboot the Digi

Cellular Device by either re-powering or via the `boot action=reset` command.

Via WebUI: Point your browser to the Digi Cellular Device's Ethernet port IP address, select Configuration > Network and enter the desired settings. The Digi Cellular Device must be rebooted for the changes to take effect.

For example:
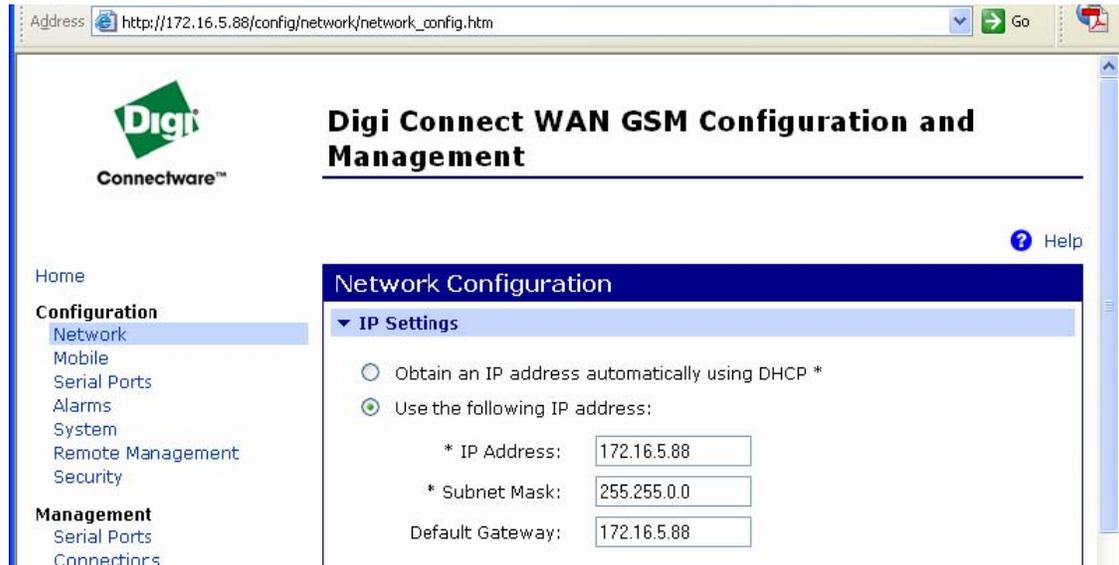
Press **Apply,** and then **reboot** the Digi Cellular Device for changes to take effect. You will lose connectivity to the unit until you reconfigure your workstation to be in the same subnet as the Digi Cellular Device; or use DHCP.

APN Configuration: In order to communicate on the GSM IP network the Digi Cellular Device must be configured for a certain Access Point Name (APN) type. In simple terms, the APN determines what type of IP address is provided to the Digi Cellular Device's mobile interface and how the provider's network communicates to the corporate LAN or application. The SIM card is provisioned to communicate and authenticate to the APN. This information must be worked out with your provider before you begin testing.

The two most important items to determine about an APN are: (1) is whether mobile terminated data required (i.e., does a host initiate the connection to the mobile device?) and (2) what type of IP addressing is required (e.g., is a public static IP address required?).

Connecting the Digi Cellular Device

1. Ensure the SIM is in place. If not, insert the SIM into the SIM garage.

2. Attach the antenna to the Digi Cellular Device. Place the Digi Cellular Device and/or antenna in a location that will ensure the best signal.

3. Connect the Digi Cellular Device Ethernet port to your workstation or device in

the method mentioned above (either via hub/switch or direct via crossover Ethernet cable).

4. Apply power to the Digi Cellular Device. After a few minutes observe the following:

> a. Green Ethernet Link LED located on the Ethernet port should be on. If not, make sure you are using the proper cable.

> b. Signal Strength LEDs on top of unit should show 2-4 LEDs. If not, try repositioning the antenna and unit if necessary. Do not extend the antenna cable; instead, reposition the Digi Cellular Device unit itself via longer Ethernet cable connection.

> c. Activity LED will be on solid for a few moments then go off.

> d. The Wireless Link LED on top of unit should go on solid once the APN type is properly configured. If not, verify the APN provisioning via Configuration > Mobile. Make sure it is set for the proper APN configuration. There are four primary Petrocom APNs:
> > i. isp.petrocom
> > ii. ispstat.petrocom
> > iii. isppriv.petrocom
> > iv. Custom APN
> > Please check with Petrocom to make sure the proper APN type is being used for your application. A user name and password is also required.
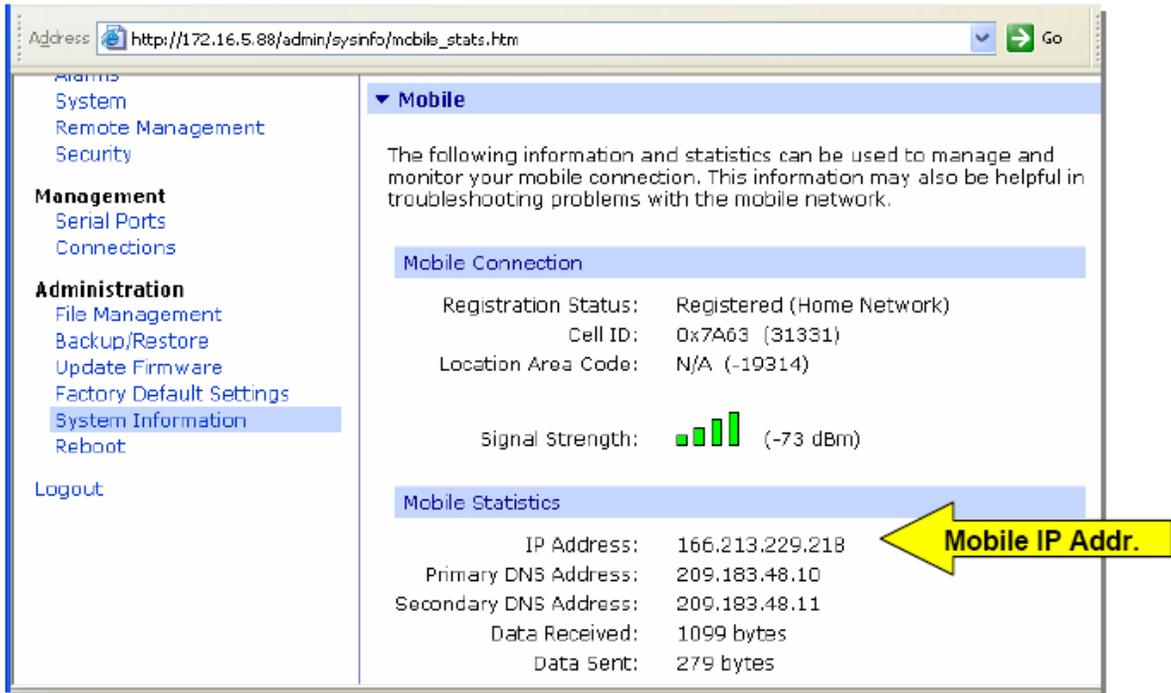
> e. Following is a Petrocom example of a Custom APN:

5. If you changed the APN type, reboot the Digi Cellular Device via Administration > Reboot if changes were made to the mobile provider or IP address settings.

6. Once the mobile link LED is on solid (which may take a few minutes), verify the mobile IP address from the Digi Cellular Device home page, via Management > Connections, or via Administration > System Info > Mobile (as shown below):

7. The Digi Cellular Device should now be ready to use.

Testing the Digi Connect from a Workstation

Once the Digi Cellular Device is connected to the cellular network and is accessible from network devices connected to its Ethernet port, you can do some simple tests to verify communications through the device.

A simple test is to connect *out* through the Digi Cellular Device to an Internet website like www.digi.com . Make sure your workstation's IP config is to use the Digi Cellular Device's Ethernet port IP as the default gateway and use the wireless provider's DNS server IP addresses (found via Administration > System Info > Mobile).
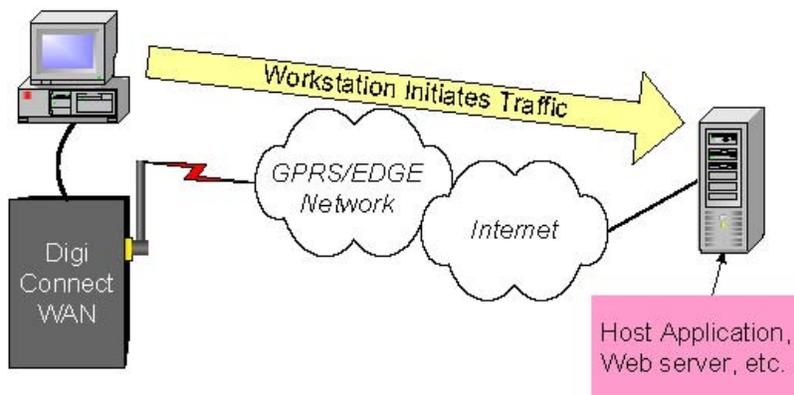
In-bound Connections require additional configuration to test. First, not all APN types allow incoming connections. Second, the Digi Cellular Device uses Network Address Translation (NAT)* to route traffic from the Public IP address on the cellular interface to the Ethernet port's private IP network. NAT provides two main benefits:

> **Security:** NAT hides the private IP addresses of the devices on the Digi Cellular Device's Ethernet network.
>
> **IP Address Availability**: IP addresses are in short supply and cost money. The Digi Cellular Device need be provided only one IP address from the wireless carrier.

Port forwarding* entries are required to pass incoming traffic through the Digi Cellular Device to a device or workstation connected to the Digi Cellular Device's Ethernet port.

> *Note that the Digi Connect Remote Gateway (RG) does not support NAT or port forwarding.*

Refer to the Digi Cellular Device application guide on mobile terminated connections for details on setting up in-bound connections.

A simple test to verify the Digi Cellular Device is on the wireless network and is accessible is to ping the mobile IP address from an Internet connected workstation. From the example above where the mobile IP address is 166.213.229.218: ping 166.213.229.218

If the request times out, try adding a "-w 5000" or "-w 10000" to the ping command: ping -w 5000 166.213.229.218

Other application scenario examples, such as using the Digi Cellular Device for a backup wireless WAN connection, are available from Digi International.

Finishing Up and Getting Assistance

Please register your Digi Cellular Device at
http://www.digi.com/support/customer%20services/warranty.jsp .

If you have any questions or need assistance, please contact your Digi Cellular Device vendor or Digi International at 952-912-3444, or Digi technical support at
http://www.digi.com/support/eservice/eservicelogin.jsp .