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App Note - Configuring the Perseus IP Address

Revision history

Revision	Date	Comments
1.0	March 2013	First edition.
1.1	July 2014	Up to date for Sotfware Tools Release 6.6
1.2	October 2015	Up to date for Sotfware Tools Release 7 - Added Perseus611x mention in introduction

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1 Introduction

The Perseus hardware is shipped with an embedded Linux image which uses the static IP address 192.168.0.101. There are multiple ways to modify that address or to allow it to be given through a DHCP server.

This procedure applies to both Perseus601x and Perseus611x FMC carriers. They are conjointly referred to as a Perseus.

2 Configuring the Perseus to Temporarily Use a Static IP Address

As for all Linux devices, it is possible to change the Perseus IP address temporarily.

For the purpose of this example, 192.168.0.103 will be used as the new IP address.

To configure the new address using the UART console:

1. Log in to the Perseus command line.
2. Disable the Perseus Ethernet interface: `ifdown eth0`.
3. Set the new IP address: `ifconfig eth0 192.168.0.103`.
4. Enable the Ethernet interface: `ifup eth0`.

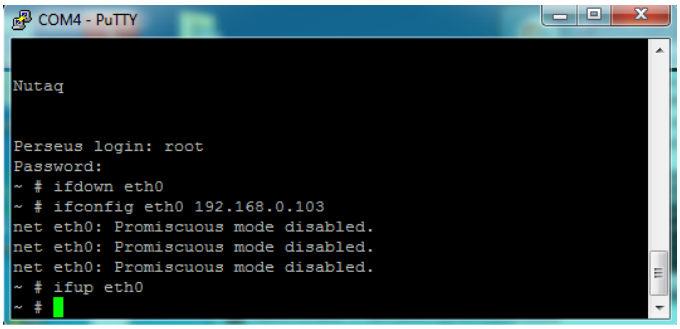

Figure 2-1 Configuring the Perseus to temporarily use a static IP address

The Perseus will now use the new IP address. Note that the configuration will be lost next time the device is reset or power-cycled.

3 Configuring the Perseus to Temporarily Get an IP Address from a DHCP Server

To get an IP address from a DHCP using the UART console:

1. Log in to the Perseus command line.
2. Disable the Perseus Ethernet interface: `ifdown eth0`.
3. Request an IP address from the DHCP: `udhcpc`.
4. Enable the Ethernet interface: `ifup eth0`.

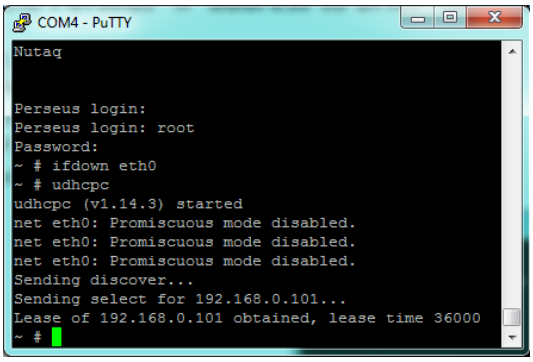

Figure 3-1 Configuring the Perseus to temporarily get an IP address from a DHCP server

The Perseus will now request a DHCP address from the local network. Note that the configuration will be lost the device is reset or power-cycled.

4 Configuring the Perseus to Permanently Use a Static IP Address

The osconfig module of the Command Line Interface (CLI) software allows the user to set a permanent static IP address for a Perseus.

For the purpose of this example, 192.168.0.102 will be used as the new IP address.

To set a permanent static IP address using CLI:

1. Connect to the Perseus: `connect 192.168.0.101`.
2. Set the static address:
   `osconfig_create_static_entry CONFIG_NAME IP_ADDRESS GATEWAY MASK`
3. Select the IP address to be used by Perseus:
   `osconfig_useentry CONFIG_NAME`

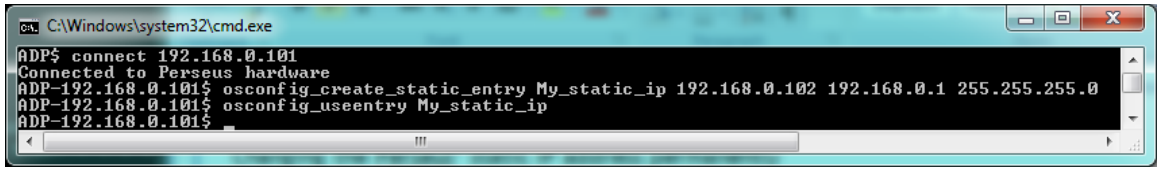

Figure 4-1 Configuring the Perseus to permanently use a static IP address

4. Reboot the Perseus.
   It will now use its new static IP address.

Please refer to the functional examples section for a full osconfig module example.

5 Configuring the Perseus to Permanently Get an Address from a DHCP Server

The osconfig module of the Command Line Interface (CLI) software allows the user to set the Perseus to permanently get an address from a DHCP server.

To get a permanent IP address from a DHCP using CLI:

1. Connect to the Perseus: `connect 192.168.0.101`.
2. Set an entry for the new IP address: `osconfig_create_dhcp_entry My_dhcp`.
3. Select the entry to be used by Perseus: `osconfig_useentry My_dhcp`.

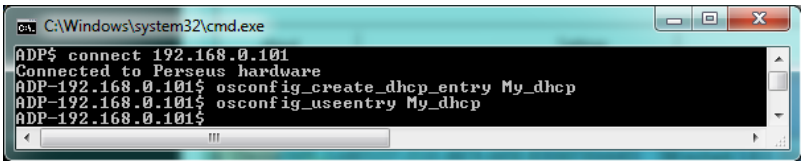

Figure 5-1 Configuring the Perseus to permanently get an address from a DHCP server

4. Reboot the Perseus.

   It will now request an IP address from a DHCP server.

Please refer to the functional examples section for a complete osconfig module example.

6 Using the Perseus with a DHCP Server

To use the Perseus with a DHCP server:

1. Install a DHCP server on the host computer.
2. Configure the server.

   Refer to the documentation of the server for details.
3. Program the Perseus FPGA with a valid bitstream (a bitstream designed for PetaLinux).

   See FPGA development with VHDL for details.

   It takes approximately 25 seconds before the IP address is configured.

   Refer to the server log to acquire the new address assigned to the Perseus.
4. In Windows, start a command window or, in Linux, open a command console.
5. Type `ping xxx.xxx.xxx.xxx` (where xxx.xxx.xxx.xxx corresponds to the Perseus IP address) and press Enter.

   If the Perseus answers your request, it is configured correctly.