

Bootloader Networking

Starting with V1.6.0, U-Boot now supports networking using the Zynq GEM ethernet.

The primary features now available are DHCP, NFS, and ping.

To use these features, [enter the RCE bootloader shell](#).

To obtain an IP address via DHCP:

- Set the autoload environment value to "no".
- Execute the dhcp shell command.

Example output:

```
zynq-uboot> setenv autoload no
zynq-uboot> dhcp
PHY not detected, assuming PHY at address 0
BOOTP broadcast 1
DHCP client bound to address 192.168.204.34
```

To load a file over NFS into memory:

- Obtain IP address using DHCP or assign statically.
- Set the NFS server IP address.
- Choose a memory address to load the file into.
- Choose the filename to load.
- Execute the `nfs` shell command

Example output:

```
zynq-uboot> setenv serverip 192.168.204.12
zynq-uboot> nfs 0x700000 /ul/reg/users/smaldona/dat/cscnrc/fw/uImage
PHY not detected, assuming PHY at address 0
Gem.e000b000:0 is connected to Gem.e000b000. Reconnecting to Gem.e000b000
Using Gem.e000b000 device
File transfer via NFS from server 192.168.204.12; our IP address is 192.168.204.34
Filename '/ul/reg/users/smaldona/dat/cscnrc/fw/uImage'.
Load address: 0x700000
Loading: #####
#####
#####
#####
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#####
done
Bytes transferred = 3678504 (382128 hex)
```

Once the file is loaded into memory, it can then be written to the SD card using the fatwrite command.

See [Restoring a File Using the Bootloader](#) for instructions on using the fatwrite command.

To ping an IP address:

- Obtain an IP address using DHCP or assign statically.
- Execute the ping shell command.

Example Output:

```
zynq-uboot> ping 192.168.204.12
PHY not detected, assuming PHY at address 0
Gem.e000b000:0 is connected to Gem.e000b000. Reconnecting to Gem.e000b000
Using Gem.e000b000 device
host 192.168.204.12 is alive
```