

softMC Training – Module 3

# IP Configuration



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# IP Address Prerequisites

- softMC controller requires a LAN with DHCP IP address assignment (per factory-defined configuration)
- Check with IT manager at site, to make sure:
  - softMC controller will be able to connect to site's LAN
  - softMC controller will be able to get an IP address from a DHCP server.

# Ways to Define IP Address

IP address of the softMC controller can be defined in 3 ways

- DHCP – assigned by DHCP server – *recommended*
- Fixed IP address – assigned by user
- Manual IP address – assigned by ControlStudio

# Get IP Address from a DHCP Server

- Host PC and the softMC controller must get their IP address from the same DHCP server; therefore they must reside at the same IP subnet.
- Using a text editor over the serial (RS232 BR: 115200) connection, create and save a file named **FWCONFIG**:  

```
[nano] /FFS0/FWCONFIG
```
- Enter the instructions:  

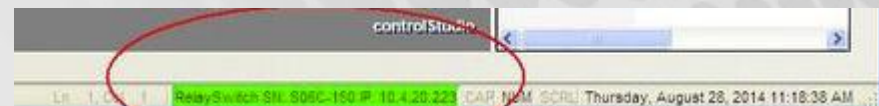
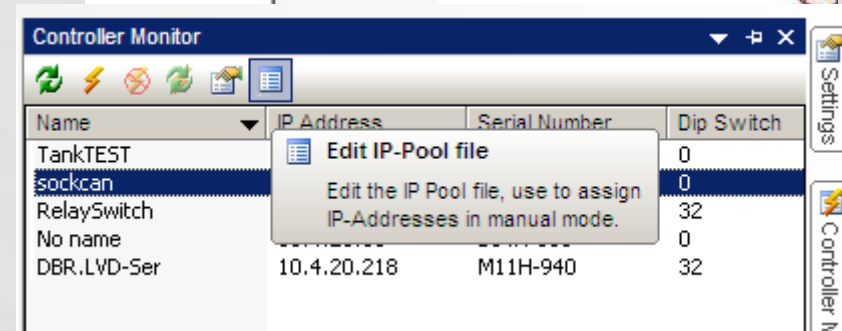
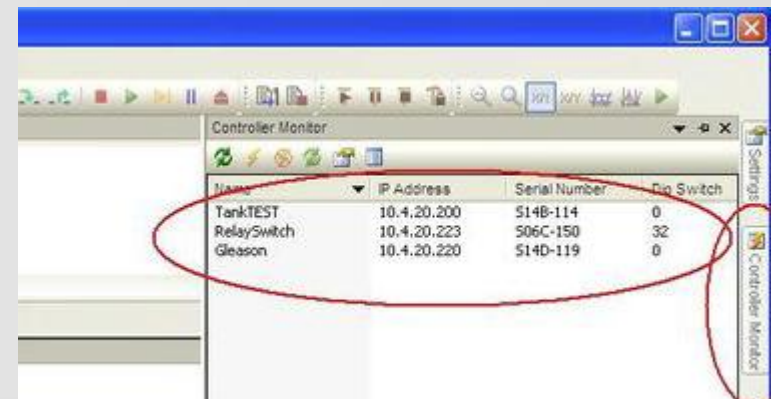
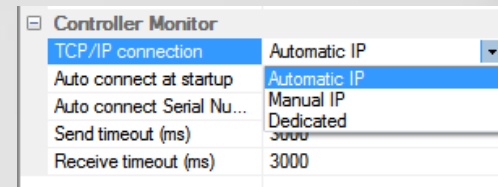
```
ipaddressmask dhcp  
sleep 20  
ramdisksize=64 mByte  
StringPreload=30000
```
- Reset the softMC controller.  
It will boot up with the IP address from the DHCP pool.

# Manually Assign an IP Address Using ControlStudio - 1

- Host PC's IP address must be in the same subnet as the addresses in the ControlStudio IP pool
- IP Pool file must contain a list of IP addresses that the network administrator has explicitly excluded from the DHCP range and reserved exclusively for use by softMC controllers

# Manually Assign an IP Address Using ControlStudio - 2

- ControlStudio searches for all softMC controllers present on the network.
- softMC controllers that do not yet have an IP address are assigned an IP address from the IP Pool file.
- ControlStudio displays a list of all controllers and the manual IP address assigned to each of them.
- To connect to a controller, select and double-click.
- Once the connection is established, the name and IP of the controller are displayed and highlighted in the status bar.





# Define a Fixed IP Address

- IP address of host PC and softMC controller must both be in same address space.
- Using a text editor over the serial (RS232) connection, create and save a file named **FWCONFIG**:

```
[nano] /FFS0/FWCONFIG
```

- Enter the following instructions:

```
ipaddressmask aaa.bbb.ccc.ddd:eee.fff.ggg.hhh  
sleep 20  
ramdisksize=64 mByte  
StringPreload=30000
```

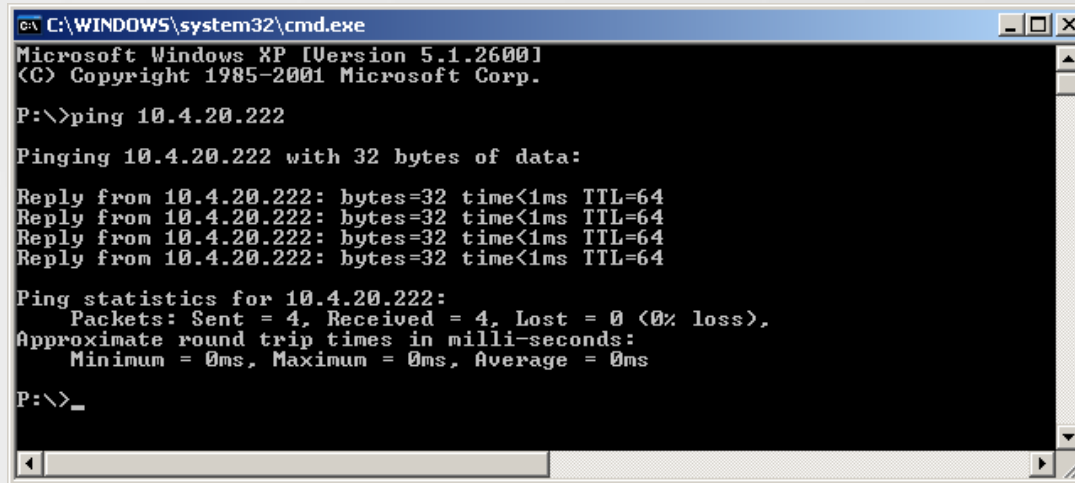
Where *aaa.bbb.ccc.ddd:eee.fff.ggg.hhh* holds the permanent IP address and subnet mask to be assigned to the controller

- Reset the softMC controller.  
It will boot up with the IP address from the DHCP pool.
- A fixed IP address can be changed from the application or in CONFIG.PRg, using the MC-Basic command SYS.IPADDRESSMASK.



# Note!

- To check the IP setting, restart the MC, then PING command from host computer:



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

P:\>ping 10.4.20.222

Pinging 10.4.20.222 with 32 bytes of data:

Reply from 10.4.20.222: bytes=32 time<1ms TTL=64
Reply from 10.4.20.222: bytes=32 time<1ms TTL=64
Reply from 10.4.20.222: bytes=32 time<1ms TTL=64
Reply from 10.4.20.222: bytes=32 time<1ms TTL=64

Ping statistics for 10.4.20.222:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

P:\>_
```

- Topology is likely to change when moving from lab to plant
- 2 different IP configurations may be required:
  - One configuration for application development
  - One configuration for system after softMC controller has been embedded into machine
- Get assistance from IT professionals

**END**