Upgrade Hardware System

Overview

This document talks about how to upgrade hardware and software running on the demo stacks. Currently, we have two stacks for the demo. Each stack has 12 boards in it. We give each board an ID. The first number of the ID indicates the stack number -- value range from 1 to 2. The second number indicates the position of the boards in stack -- value range from 0 to 9. Please notice that the two boards at top and bottom of a stack are not use as OpenFlow switches, so they don't have an ID.

The ID arrangement graph shows as follow:

Stack 1(Left)	Stack 2(right)
TOP	TOP
19	29
18	28
17	27
16	26
15	25
14	24
13	23
12	22
11	21
10	20
BOTTOM	BOTTOM

Upgrade System

We provide two ways to upgrade the system. You can upgrade the system either via Ethernet or build a bootable SD card. All necessary software is included in our upgrade package. You can connect a host pc to the control channel Ethernet, which is the network connects boards and Mac Mini. And run the script in our upgrade package to upgrade boards.
The upgrade package's name is demo.zip.
NOTICE: The script depends on "expect" which is a Linux tool. Check it first before use.

Ethernet upgrade

Upgrade via Ethernet can be done by using a bash script in upgrade package whose name is "auto_upgrade.sh"

If one want to upgrade board 10, execute the following command:

./ auto_setup.sh --net --select 1 0 --ip 10.0.0.11

Or the if the target board's IP == 10.0.0.XX. If XX equals to the target board's ID, then the command can be short to

./ auto_setup.sh --net --select 1 0

This command is equal to ./ auto_setup.sh --net --select 1 0 --ip 10.0.0.10

But at first time, the full command must be executed.

SD upgrade

The command is quite similar with Ethernet upgrade command. First, add a empty SD card(at least 4G). Then run the following command:

./ auto_setup.sh --sd --select 1 0

Upgrade the whole system

The first time you upgrade the stacks, the board's IP may difference from the IP we expected. So it is necessary to upgrade them one by one. It is important to upgrade one board at a time.

You may just execute the following command one by one:

./ auto_setup.sh --net --select 1 0 --ip 10.0.0.11
./ auto_setup.sh --net --select 1 1 --ip 10.0.0.12
./ auto_setup.sh --net --select 1 2 --ip 10.0.0.13
./ auto_setup.sh --net --select 1 3 --ip 10.0.0.14
./ auto_setup.sh --net --select 1 4 --ip 10.0.0.15
./ auto_setup.sh --net --select 1 5 --ip 10.0.0.16
./ auto_setup.sh --net --select 1 6 --ip 10.0.0.17
./ auto_setup.sh --net --select 1 7 --ip 10.0.0.18
./ auto_setup.sh --net --select 1 8 --ip 10.0.0.19
./ auto_setup.sh --net --select 1 9 --ip 10.0.0.20

./ auto_setup.sh --net --select 2 0 --ip 10.0.0.31
./ auto_setup.sh --net --select 2 1 --ip 10.0.0.32
./ auto_setup.sh --net --select 2 2 --ip 10.0.0.33
./ auto_setup.sh --net --select 2 3 --ip 10.0.0.34
./ auto_setup.sh --net --select 2 4 --ip 10.0.0.35
./ auto_setup.sh --net --select 2 5 --ip 10.0.0.36
./ auto_setup.sh --net --select 2 6 --ip 10.0.0.37
./ auto_setup.sh --net --select 2 7 --ip 10.0.0.38
./ auto_setup.sh --net --select 2 8 --ip 10.0.0.39
./ auto_setup.sh --net --select 2 9 --ip 10.0.0.40

How to determine IP of a board

I'm not quite sure about the actual IP of each boards. You'd better use the following command first to make sure the board is alive and just using the IP:

Step 1: Power on the first rack.

Step 2: run the following command:

ssh root@10.0.0.11

when it request password, please type "root"

Then you will login to the board system.

Step 3: Watch the single Ethernet port at the back of boards, you will find a LED is off, and the other LED is flashing. If you keep in typing something in ssh console, you may find one board's Ethernet LED status changes from flashing to ON. That means the board is the one your ssh is talking to.

Normally, the ID=10 board's IP is 10.0.0.11, and the ID=20 board's IP is 10.0.0.30.

The rest boards' IP are arranged in order of increasing strength.

After This Step

The old topology discover demo will run correctly.