How to set up a Shelf Manager

> ⚠️ **Updating Shelf Information**
>
> If the shelf name or COB-specific Shelf IP Info is changed, each COB will need to have its cached value updated. This is most easily done by issuing the COB Cold Data Reset command. This is the moral equivalent of removing the board from the slot, though it does not actually remove Management Power. This command cycles the COB payload power (DPMs, DTM, RTM, etc) and invalidates all cached state in the IPMC before resetting the IPMC. After this the IPMC will reacquire the Shelf Info from the Shelf Manager, and the RCEs will get these refreshed values when they boot.
>
> Until there is an SDK command to send the Cold Data Reset command (0xF9), one can use ipmitool as described on Interacting with the COB IPMC via the Shelf Manager.

Example Shelf Manager

- ASIS ShMM-500 based on Pigeon Point software

Minimum requirements

- Network connectivity
- A name for the shelf
- Many other configuration parameters exist which can be set up as desired
- See the manual for details
- An older version (but newer than the version we have installed on most of our shelf managers) of the manual is here

Shelf Manager setup

There are multiple ways to do this. One method is described here.

- Get a 9 pin serial cable and connect one end to the shelf manager module and the other to a computer
- Install a remote terminal server program
    - We use `minicom` with a USB hub
    - In the example below `usb7` is the port to which the computer end of the serial cable is attached
- Establish communications with the shelf manager

```
$ minicom usb7


Welcome to minicom 2.1

OPTIONS: History Buffer, F-key Macros, Search History Buffer, I18n
Compiled on Jul 26 2006, 06:38:12.

Press CTRL-A Z for help on special keys


shmm500 login: root
Password:
#
```

    - Use the `root` account
    - The password is initially blank
        - It can be changed if desired
- Provide the shelf manager with a network configuration

```
clia setlanconfig 1 3 "172.21.6.22"
clia setlanconfig 1 6 "255.255.255.0"
clia setlanconfig 1 12 "172.21.6.1"
```

    - The above example sets the IP address, the subnet mask and the default gateway IP address, respectively
- Give the shelf a name

```
clia shelfaddress "darwin"
```

- If you need to find the MAC address of the Shelf Manager you can execute

```
clia getlanconfig 1 5
```

- Add the name/IP combination to the DNS configuration
  - Edit `/var/named/lab1.reg.zone`
  - Add a line

    ```
    darwin-sm    A    172.21.6.22
    ```

  - Restart the service

    ```
    sudo service named restart
    ```

- Reboot the shelf manager
  - From the '#' prompt, enter:

    ```
    reboot
    ```

  - Another method is to toggle the board's extraction handle

Testing the setup

Any of the following tests should be sufficient.

- Try logging in over the network

  ```
  ssh root@darwin-sm
  ```

- The `ipmi_` commands should now work
- Try using the web interface

  ```
  konqueror http://darwin-sm
  ```

- `ping` the board

Setting the Shelf IP Information

Once the Shelf Manager is set and you can ping it, you will be able to set the COB-specific Shelf IP Information. There are 3 commands in the SDK which manipulate the Shelf IP info, they are display_shelf_ip_info, set_shelf_ip_info, and delete_shelf_ip_info. The help for set_shelf_ip_info describes the parameters available.

```
Usage is: set_shelf_ip_info --shelf <shelf_ip> [OPTIONS]

Required arguments:
 -s,--shelf=SHELF_IP               IP address of shelf with FRU info to set

Optional arguments:
 When specified w/o parameters, the optional arguments will assume
 their default values. When omitted, the values present in the Shelf
 FRU Information will be retained.

 -i, --vlan=VLAN_ID                VLAN ID (12-bits)
 -u, --untagged=DISCARD            When DISCARD is 1, incoming
                                   untagged frames will be discarded.
 -t, --tagged=DISCARD              When DISCARD is 1, incoming
                                   tagged frames will be discarded.
 -x, --boundary-violations=DISCARD When DISCARD is 1, incoming
                                   boundary violations are discarded.
 -b, --group-base=BASE_IP          BASE_IP is the base address for
                                   the block of addresses available
                                   to the shelf. Host ID of all ones
                                   or all zeros are not permitted.
 -e, --group-end=END_IP            END_IP is the end address for
                                   the block of addresses available
                                   to the shelf. Host ID of all ones
                                   or all zeros are not permitted.
 -m, --subnet-mask=SUBNET_MASK     SUBNET_MASK is the subnet mask
                                   for the shelf. It defines the
                                   network assigned to the shelf.
 -g, --gateway=GATEWAY_IP          GATEWAY_IP is the IP address
                                   of the  gateway


 -d, --dry-run                     When this option is used, the
                                   nothing is written back to the shelf.
 -f, --force                       When this option is used, write to
                                   the shelf even if there are no changes.
                                   When there is no record present in the
                                   shelf, this can be used w/o any other
                                   configuration options to create a
                                   default record
 -v, --verbose=VERBOSITY           VEBOSITY can range from 1 to 3.

Return Value:
 0 if OK
 1 if there is a problem with the arguments provided
 2 if there are problems communicating with the shelf
```

Applying updates

- TBD