Dell Unity: Using the IPMI Tool on Unity Systems (User Correctable)

Audience Level: Customer

Summary: This article describes how to use the IPMI Tool on Unity Systems.

Detailed Article

Instructions

The IPMI Tool is a Windows utility that is used to establish a Serial-over-LAN connection to the Unity Service Processors (SPs).
The IPMI tool and the Technical Notes are available from the links here.

The IPMI Tool is useful for:

- When there is no access over the management IP
- Observing the SP output directly during reboots
- Direct Command Line access to the SP for troubleshooting
- Placing an SP into Service Mode for maintenance activities

IPMI Tool can be run in a Windows PowerShell window. PowerShell allows for logging the session output, which Command Prompt does not do. PowerShell streamlines capturing data and is easier than repeatedly performing a copy and paste process.

Be advised that only the SP that is running as Primary can be used to run UEMCLI commands, though either SP can be used to run the Service Scripts (See svc_help).
To check what SP is primary, run "pgrep ECOM" (without quotes - case sensitive), and the primary returns a process ID for ECOM (management services) whereas the secondary SP returns nothing.

Accessing the Unity SPs using the IPMI Tool:

1. Download and install the IPMI Tool on your laptop.
2. Connect your laptop to a portable switch, and connect Ethernet cables from the switch to each SP's Service LAN port:
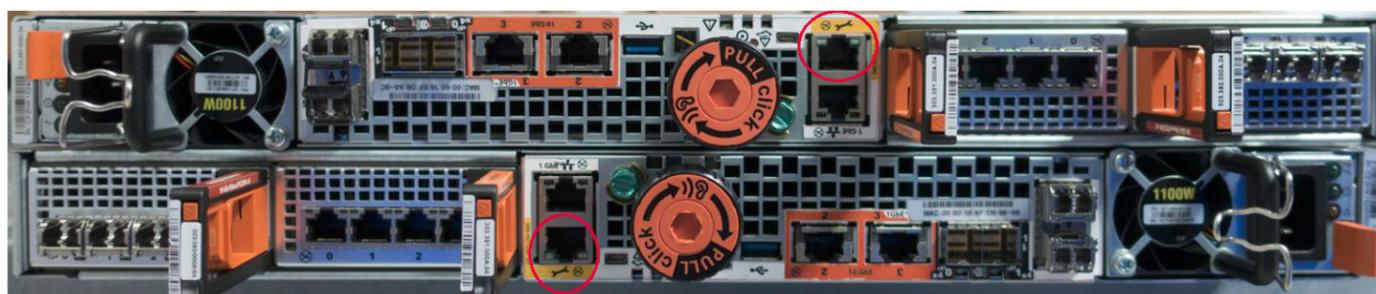
   Note: If a switch is not available, connect to a Service LAN port directly from your laptop. This provides direct access to the connected SP.
3. Configure the laptop with an IP address for the Service LAN network:

   ```
   128.221.1.250, netmask 255.255.255.0, no gateway required
   ```

4. cd to the IPMItool directory

   ```
   C:\>cd IPMItool
   ```

5. Open two command prompts on the laptop, and use the following syntax to connect to each SP:

   ```
   c:\> ipmitool.exe -I lanplus -C 3 -U console -P <unity_serial_number> -H
   128.221.1.252 sol activate
   (SPA's Serial-over-LAN IP)
   c:\> ipmitool.exe -I lanplus -C 3 -U console -P <unity_serial_number> -H
   128.221.1.253 sol activate
   (SPB's Serial-over-LAN IP)
   ```

Note: The user is "console" and password is the Serial Number of the system for the Serial-over-LAN connection only, NOT to be confused with the "service" user account and password when logging into the SP itself.

It may be desired to capture the logs more easily than copy and paste efforts. Use Windows PowerShell instead of command prompt, which allows for a log capture to be taken and saved.
See the Additional Info paragraph below for the KB article with more details.

6. Once the IPMI connection is established, press the Enter key once. If the system is rebooting, console output is displayed directly.
7. Once the SPs have completed reboot, a login prompt is displayed. Login using the "service" user account and password. Verify the basic state of each SP by running the following:

Note: IPMI sessions may drop back to the command prompt at random times. Use the up arrow to get to the IPMI command to reconnect. No repeated login required.

```
spb:~> svc_diag
======== Now executing basic state ========
* System Serial Number is: FNM0015xxxxxxx
* System Friendly Host Name is:
* Current Software version: upc_Unity_2_9_upcBuilder-4.0.0.7329527-GNOSIS_RETAIL
* Unisphere IP address(es): xx.xx.xx.xx xxxxxxxxxxxxxxxxxxxxxxxxx
* SSH Enabled: true
* FIPS mode: Disabled
* Boot Mode: Normal Mode
-----abbreviated-----------
```

Note: Each SP shows its "Boot Mode" as "Normal Mode" if the system is running as normal. If one or more SPs have an issue, the "Boot Mode" may show as "Rescue Mode" (i.e, Service Mode):

```
spa:~> svc_diag
======== Now executing basic state ========
* System Serial Number is: FNM0015xxxxxxx
* System Friendly Host Name is:
* Current Software version:
upc_nextUnity_mcs_20160607xxx_upcBuilder-4.1.0.7769613-GNOSIS_RETAIL
* Unisphere IP address(es): xx.xx.xx.xx xxxxxxxxxxxxxxxxxxxxxxxxx
* SSH Enabled: true
* FIPS mode: Disabled
* Boot Mode: Rescue Mode
----abbreviated----
```

8. If determined that the Unity system appears to be OK, except for being in Service Mode (e.g., no visible Fault LEDs or Hardware failures), clear the boot counters, and reboot each SP using the following sequence on each SP (if in doubt, please stop here and contact Dell Technical Support or your Authorized Service Representative, and quote this Knowledgebase article ID):

```
svc_rescue_state  -l   Lists the current boot counter numbers
svc_rescue_state  -c   Clears the boot counters to zero
svc_shutdown  -r       Reboots this SP
```

Note: If the Service/Rescue Mode condition is transient, the SP reboots back into Normal Mode, which can be verified by using svc_diag.

9. If the Service Mode condition does not clear, contact Dell Technical Support or your Authorized Service Representative, and quote this Knowledgebase article ID.
10. For additional Troubleshooting, use the Service Scripts (svc_help), general Linux commands, or UEMCLI commands if connected to the Primary SP.

Examples:

```
spa:~$ pgrep ECOM
20291    --> Returns of a Process ID indicates that this is the Primary SP.


spa:~$ uemcli /sys/general show
1:    System name          = u300
      Model                = Unity 300
      Platform type        = EMC Storage System
      Product serial number = FNM00153xxxxxx
      Auto failback        = on
      Health state         = OK (5)


spa:~> df
Filesystem        1K-blocks    Used Available Use% Mounted on
/dev/mapper/eroot  11226476 5750304   4883076  55% /  ---output abridged----
```

Additional Information

```
c:\> ipmitool.exe -I lanplus  -C 3 -U console -P <unity_serial_number> -H
128.221.1.252 sol activate
Info: SOL payload already active on another session
```

If the error above is encountered while running the IPMI setup commands, the session is already open or was left open if the CMD window was closed abruptly. Only one instance of an IPMI connection is possible on a particular SP.

In this case, deactivate the session, then reactivate the session again.

```
c:\> ipmitool.exe -I lanplus  -C 3 -U console -P <unity_serial_number> -H
128.221.1.252 sol deactivate
```

```
c:\> ipmitool.exe -I lanplus  -C 3 -U console -P <unity_serial_number> -H
128.221.1.252 sol activate
```

Additional KB references:
IPMI Tool can be run in a Windows PowerShell window. See the following article for more details:
Dell EMC Unity - How to log and or end an IPMItool SOL session with Windows PowerShell(Dell EMC Correctable).

MobaXterm can be used with the IPMI Tool. It is more like putty and can log all the session's output. See the following article for more details:
Dell EMC Unity: How to log an IPMItool session in Windows using MobaXterm(User Correctable)

How to place an SP into Service Mode using the IPMI command prompt. See the following article for more details:
Dell EMC Unity: How to Insert and Bring Out an SP out of service mode (User Correctable)

Affected Products

Dell EMC Unity Family

Products

Dell Unity 300, Dell EMC Unity 300F, Dell EMC Unity 400, Dell EMC Unity 400F, Dell EMC Unity 500, Dell EMC Unity 500F, Dell EMC Unity 600, Dell EMC Unity 600F, Dell EMC Unity Family |Dell EMC Unity All Flash, Dell EMC Unity Family, Dell EMC Unity Hybrid