Application for Management and Monitoring of xTCA Hardware

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Agenda

- **ATCA crate management, vendor-provided tools**
- **The role of the application**
- **The capabilities**
- **Data exchange with ATCA Shelf Manager**
- **Internal application structure**
ATCA Crate Management

Ethernet-based System Manager Link

Web:

IPM Controller Information

10: Entity: (0xf0, 0x60) Maximum FRU device ID: 0x08
   PICMG Version 2.2
   Hot Swap State: M4 (Active), Previous: M3 (Activation In Pro

20: Entity: (0xf0, 0x1) Maximum FRU device ID: 0x10
   PICMG Version 2.2
   Hot Swap State: M4 (Active), Previous: M3 (Activation In Pro

CLI:

```
# clia ipmc -v
Pigeon Point Shelf Manager Command Line Interpreter
10: Entity: (0xf0, 0x60) Maximum FRU device ID: 0x08
   PICMG Version 2.2
   Hot Swap State: M4 (Active), Previous: M3 (Activation In Pro
20: Entity: (0xf0, 0x1) Maximum FRU device ID: 0x10
   PICMG Version 2.2
   Hot Swap State: M4 (Active), Previous: M3 (Activation In Pro
```
The application provides real-time monitoring capabilities and enables for supervision and management of the ATCA-based system being performed in more efficient and convenient manner.
Functionality (monitoring)

- **Graphical representation of the shelf front panel for real-time monitoring (remote virtual shelf)**

- **Determining FRUs and IPMCs presence and state**
Functionality (management)

- FRU activation and deactivation
- FRU resetting
- Fan level monitoring and control
- SEL browsing
- Custom IPMI messaging (access to non-standard hardware functionality)
Interfaces Compared

# clia getfanlevel fan_tray 2
Pigeon Point Shelf Manager Command Line Interpreter
5c: FRU # 0 Override Fan Level: 15, Local Fan Level: 1
# clia setfanlevel fan_tray 2 2
Pigeon Point Shelf Manager Command Line Interpreter
5c: FRU # 0 Set Fan Level to: 2
# clia getfanlevel -v fan_tray 2
Pigeon Point Shelf Manager Command Line Interpreter
5c: FRU # 0 Override Fan Level: 2, Local Fan Level: 1
# clia minfanlevel
Pigeon Point Shelf Manager Command Line Interpreter
Minimal Fan Level is 3
Dynamic Minimum Fan Level is 3
# clia minfanlevel 5
Pigeon Point Shelf Manager Command Line Interpreter
Minimal Fan Level is set to 5
Cooperation with Shelf Manager

- ATCA Shelf Manager
- CLI
- Ethernet-based System Manager Link
- Send command
- FRU devices (12)
- CLI:
  - activate
  - airfilterreplace
  - amcportstate
Internal Application Structure
CLI Output Data Interpretation

```java
private final String entityRegex = "\\w+: Entity:.+";
private final String hotSwapRegex = "(Hot Swap State: ).+\,";
private final String devIDStrRegex = "(Device ID String: \")+.+\"\";
private final String suppFtrsRegex = "(Supported features: ).+\((\"\.+\")\[(\.)]+\)";
```
Summary

- Improvement of control and supervision efficiency as compared to vendor-provided tools
- Additional real-time monitoring capabilities
- Access to custom hardware functionality
- The architecture of the application supports expandability
- Further development plans
Thank You