OPEN POSSIBILITIES.

Rack Management Solution by Wiwynn
Rack Management Solution by Wiwynn

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## System Overview

<table>
<thead>
<tr>
<th>Standard Telecom Friendly Form Factor</th>
<th>EIA 19&quot; Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compact Design Good for edge Applications</td>
<td>Less than 17&quot; Depth</td>
</tr>
<tr>
<td>Expedite Open Source Eco-Systems</td>
<td>AKRAIN0 O-RAN OpenRMC System Management</td>
</tr>
<tr>
<td>Power Supply</td>
<td>2x 2000W Slim AC/DC or DC(±48V)/DC 1+1 Redundant Hot-swappable PSU.</td>
</tr>
<tr>
<td>Integrated Stand-Alone Design</td>
<td>Chassis Level RMC &amp; OCP 3.0 NIC 1 X 1Gb RJ45 for Management 2 X 10G SFP+ for Data or Chaining Multiple Chassis</td>
</tr>
</tbody>
</table>

https://www.opencompute.org/products/379/wiwynn-ep100-1s-1u-openedge-server-node
Hardware Stack Overview

EP100

RMC Board

PSU0
PSU1

PMBus over I²C

RMC

Internal Switch

SFP+

OpenRMC Northbound

Client

IPMB

LAN

SLED0
SLED1
SLED2
SLED3
SLED4

BMC
CPU

BMC
CPU

BMC
CPU

BMC
CPU

BMC
CPU
Agenda

1. System Overview
2. System Bootup and SLED Discovery
3. OpenRMC Northbound API Implementation
4. Demo
Software Stack Overview

**Application Layer**
- IPMI
- SLED MON
- LIGHTTPD
- FW UPDATE
- GPIO APP
- REDFISH®
- I²C APP
- ADC APP
- SENSOR MON
- BUSYBOX

**Kernel & UBOOT**
- TIMER
- GPIO
- WDT
- ADC
- SOC BSP
- LAN
- I²C
- UART
- SPI
- CONFIG
- UBOOT

**HW Layer**
- PSU 0
- RTC
- AST2520
- EEPROM
- V-SENSOR
- PSU 1
- SPI FLASH
- NETWORK SWITCH
- TEMP SENSOR
System Bootup and SLED Discovery

- After power up, RMC boots from UBOOT then Linux kernel, and load IPMI stack, Services and Chassis device monitor task when initializing.

- SLED Monitor Task get initialized for message exchange between RMC and SLEDs.

- RMC discovers each SLED and has the dedicated IPMB bus to monitor system status.

- Redfish stack collects the SLED System information and populates them in OpenRMC Northbound API Specification format.
Agenda

1. System Overview
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4. Demo
Collect System Information

RMC
- Temp Sensor
- PSU
- FRU
- Voltage Sensor
- ADC

BMC
- Temp Sensor
- FRU
- Power Sensor
- CPU
- Temp
- Fan
- PECI
- Tach
- PWM

SLEDs

IPMB over I²C
OpenRMC Northbound API Implementation

- Current supported items as below and the rest are under development (ETA will be the end of this year)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Capacities</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSU Status /Health</td>
<td>Obtain the status and health of PSU</td>
</tr>
<tr>
<td>Node Power Status</td>
<td>Obtain the node power readings</td>
</tr>
<tr>
<td>Node Power Control</td>
<td>Determine the power status of the node</td>
</tr>
<tr>
<td>Node Temperature</td>
<td>Obtain the node temperature</td>
</tr>
<tr>
<td>Firmware</td>
<td>Obtain the firmware revision of RMC Update RMC firmware</td>
</tr>
<tr>
<td>Account Management</td>
<td>NB Admin/User accounts</td>
</tr>
</tbody>
</table>

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Demo

```
root@Pine:~# curl -ks -u admin:wiwynn -G https://10.248.41.207/redfish/v1/ | jq . | less
```
Thank you!