Open Rack V3 Family Status Update

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1> Rack Frame
2> Power shelf
3> Power Shelf Input Connector
4> Liquid Cooling Interfaces
1> Rack Frame
2> Power shelf
3> Power Shelf Input Connector
4> Liquid Cooling Interfaces
Status:
- Rough Layout is complete
- Working on Detailed design
- Open Rack specification will require update to support Open Rack V3
- IT Gear will require minor changes to the chassis to fit into ORV3

Challenges:
- Blind-mate liquid cooling
1> Rack Frame

2> Power shelf

3> Power Shelf Input Connector

4> Liquid Cooling Interfaces
Power Shelf Group (Power Shelf)

- 21” IT Gear
- ORV3 Power Shelf
- Power from Data Center
Power Shelf – 1U Shelf

Power Shelf Group (Power Shelf)

- Power Shelf
- Universal Input Connector
- 48V Output Connector
- Power Management Controller
- Rectifiers
Status:

- Preliminary specifications and prototypes are complete for both 1OpenU and 2OpenU shelves
- FB has working prototype 1OpenU shelves for testing
- Both shelves share the same PSU and Shelf Controller

Next Step:

- Update the specification based on prototype evaluation
Power Shelf – 1U Shelf

- 48V Output Connector
- Universal Input Connector
- Power Shelf
- Power Management Controller
- Rectifiers
Status:
• Preliminary specification is complete
• Facebook has protos in-house for evaluation

Next Step:
• Update the specification based on prototype evaluation
1> Rack Frame
2> Power shelf
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Power Shelf Input Connector

- LEFT CONNECTOR
- RIGHT CONNECTOR
Status:
• Preliminary specification is complete for both 1OpenU and 2OpenU shelves
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Next Steps:
• Update the specification based on prototype evaluation
1> Rack Frame

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Rack Frame Features - Geometry

- 48V BUSBAR
  - Same volume as 12V
  - Different connector

- Optional Hot-Plug Data Bus
  - Optical or Copper

- Optional Liquid Cooling Solution
  - Hot-Plug, Drip-Less Interconnect

- Cold Manifold
- Hot Manifold

Rear View
IT Gear

Manifold
Status:

- Group was formed earlier this year with 12 members including manifold suppliers, hose and coupling suppliers, ODM’s, solution providers, and hyperscalers.
- Multiple concepts for blind mate quick connectors presented to the group are under review.
- Manifold team members are investigating port design options, bleed-off valve locations & options, and mfg. tolerances.
- Several members have started to meet and author a Manual Hoses and Couplings best practices white paper.
- Rack frame focused members are investigating frame interfaces and brackets.

Next Steps:

- Review the QC concepts and determine preferred option(s)
- Start defining the IT gear and manifold interfaces based on team’s preferences
- Develop details around the mating sequence for the blind mate QC’s
Call to Action

• Get involved
• Become an active contributor
• Help develop the specifications and solutions

• https://www.opencompute.org/wiki/Main_Page#How_to_Join
• https://www.opencompute.org/wiki/Rack_%26_Power/Advanced_Cooling_Solutions
• https://ocp-all.groups.io/g/OCP-ACS
• https://ocp-all.groups.io/g/OCP-RackandPower