The Open RACK Project
Engineering Summit
San Jose

13 AUG 13
Welcome

Who are we?

Who are you?

What are your goals for attending?

Is there anything in particular you want to cover today?
AGENDA

Morning Session:

11:15 – Noon  Welcome and Introductions

FB Open Rack Update

Noon – 1  Lunch
AGENDA

Afternoon Session:

Rittal Open Rack Update from Andy Gill

Review Previous Changes to Open Rack Standard

Discuss New Changes to Open Rack Standard

New Business

Wrap-up
Why Open Rack?
Open Rack Overview

Wide 21” equipment bay for maximum space efficiency

Shared 12v DC power system

Well-defined “Mechanical API” to standardize the interface between the server and the rack

Layout to optimize IT gear serviceability and deployment
Open Rack: Top View

1 or 3 Busbars located in the rear supply power from shared power subsystem

IT Gear is serviceable from the cold aisle

Cables located in front for serviceability
Open Rack: Front View

Wider 21” equipment bay optimizes room for IT Gear

Divided vertically into 48mm OpenU

Support ½ OpenU increments
Facebook Update
Open Rack Update

Steve Mills
Mechanical Engineer
Rack and Power Design, Infrastructure

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FB Open Rack Update: Busbar Lug Covers
FB Open Rack Update: IT Gear Support Changed to M5 Screw
Power Update: V1 Shelf

Single Phase 230/277V AC input
12V DC Output to 3 sets of busbars

6 PSUs + 1 redundant
700W per PSU * 6 per shelf = 4.2kW
3 shelves per rack = 12.6 kW per Rack

Currently in Production
Power Update: 208V Dual Feed Shelf

Currently in EVT

Minor Issues in Bring-up

No Changes from last summit
Lessons Learned
FB Lessons Learned

Adding Wood Brace to the front of the rack during shipping for very heavy configurations >800 kg IT gear
Lunch Break Until 1 pm
RITTAL Update on Open Rack

Andy Gill

Engineering Director
Review Open Rack Standard

Review changes from May Summit

Any new changes to the standard requested?
Why Create an Open Rack Standard?

Define the Mechanical and Electrical Interfaces between the Rack and the IT Gear

- Create Interoperability between Rack and IT Gear manufacturers
- Retain flexibility for innovation
- Optimize designs for large scale deployment
- Reduce development and deployment cost and cycle time
Review Open Rack Standard

Review changes from May Summit

Any new changes to the standard requested?
Possible Changes: Add width dimension

SECTION E-E

∅ 4±0.13
∅ 11±0.13
∅ 11±0.13
14±0.2
19±0.13
∅ 4.6±0.13

XXX +/- XX
Possible Changes: IT Gear Support Features
New Business
Feedback on Summit

What worked?

What could have been better?
Thanks
Backup
Open Rack Singlet

Front View  Back View
Rack

Open Rack
Three 13U Power Zones in one rack

120mm 180 180 120mm

23.6” (600mm)

10U Equipment Bay

12.5V 4.2KW Power Shelf

Bus Bar pairs
3mm thick
17mm apart

3U
Alignment Pin catches between the busbar

Float +/- 4mm horizontal
Float +/- 3mm vertical
Busbar Efficiency

Power Dissipation
(current flowing through 1 busbar blade from top to bottom)

Load (A)

power (W)

0 50 100 150 200 250 300 350 400

0 1 2 3 4 5 6 7 8 9 10

power