INNOVATION - WE ALWAYS FIND A BETTER WAY

INNOVATION Quarterly RECOGNITION

1st Quarter 2023

December- March

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MONTHLY RECOGNITION

"What can we change to make things / processes / products better?"

PROJECT:

Wukong RFP: Design for cable/ hybrid backplane

TEAM:

- David Tsai
- Hank Lin
- Sam Tsai
- Tim Liao
- Sam Lyu
- Maxine Lin
- Ashley Chang

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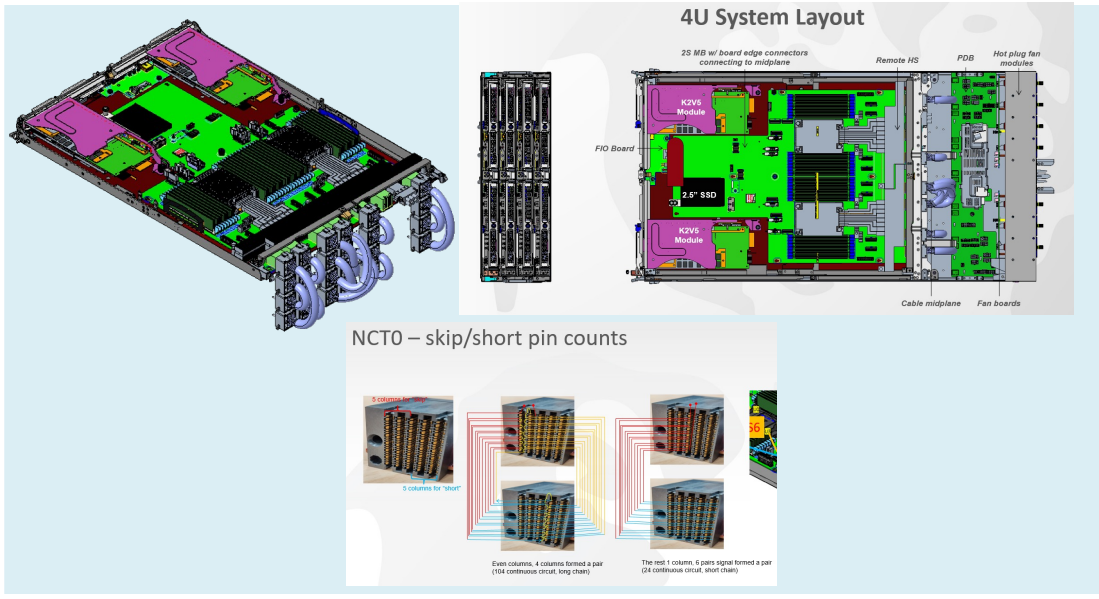
Wukong RFP: Design of cable/hybrid backplane

Month: Jan 2023
Nominator: Jay Shenoy

Wukong is an 8S system RFP design that we submitted to Woody. QBR feedback is “this is the best RFP submission ever from Hyve”. A key part of this is the electrical analysis and design that led to a hybrid backplane design along with a validation plan to test out early the new aspect of this design

	Teamwork	Company Impact	Customer Delight	Comments (-> Add your own assessment on each criteria as Low/Med/High)
	H	H	H	Iterative design led to a robust design
Team Member List (2-7)	David Tsai, Hank Lin, Sam Tsai, Tim Liao, Sam Lyu, Maxine Lin, Ashley Chang			

- SI analysis of multiple options at multiple speeds
- Quick data gathering from vendors, one was new to Hyve
- Adapting existing concepts into new design
- Refining iteratively
- Clear organization and presentation of ideas that led to this design
- Wukong is the most complex design Hyve has ever proposed and this is a key part.



Hybrid backplane + validation

MONTHLY RECOGNITION

"What can we change to make things / processes / products better?"

PROJECT:

Wukong RFP: Analysis of thermal designs

TEAM:

- Tomothy Chiu
- Steve Pulos
- Bridget Burt
- David Iannamico
- Yuting Huang
- Vita Wei
- Peter Lin

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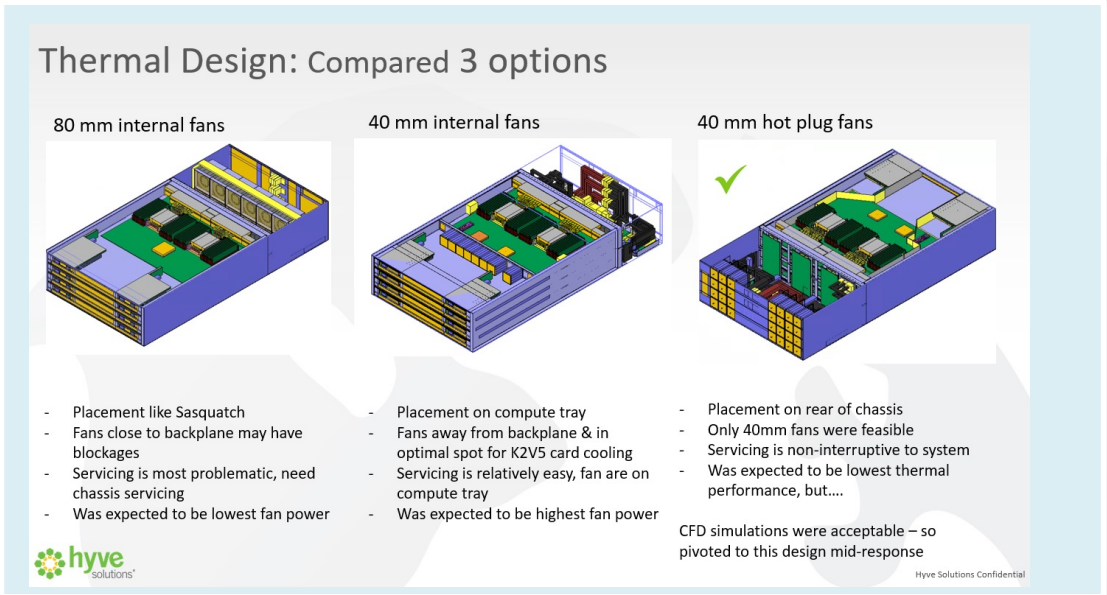
Wukong RFP: Analysis of thermal designs

Month: Jan 2023
Nominator: Jay Shenoy

Wukong is an 8S system RFP design that we submitted to Woody. QBR feedback is “this is the best RFP submission ever from Hyve”. ME team (across sites) & thermal engineer collaborated to completely analyze 3 different thermal designs in one month and provide a detailed comparison.

	Teamwork	Company Impact	Customer Delight	Comments (-> Add your own assessment on each criteria as Low/Med/High)
	H	H	H	Iterative design led to a robust design
Team Member List (2-7)	Timothy Chiu, Steve Pulos, Bridget Burt, David Iannamico, Yuting Huang, Vita Wei, Peter Lin			

- Set up a pipeline of work – Fremont ME prepares initial design, Thermal engineer does CFD, Taiwan ME for detailed design
- Partly this way due to RFP work being done in December
- 3 different designs were analyzed apples-to-apples and quite thoroughly
- Some surprising findings, but root causes identified
- Led to a good set of options, data center trade offs are involved that Woody will need to chime in for final pick (serviceability vs fan power)
- We went with meeting most RFP requirements and picked a design to proceed with



Three separate designs analyzed!

MONTHLY RECOGNITION

"What can we change to make things / processes / products better?"

PROJECT:

Wukong RFP: DDR Validation Proposal

TEAM:

- Dennis Pham
- Chiang Wu
- Ashley Chang
- Jay Shenoy

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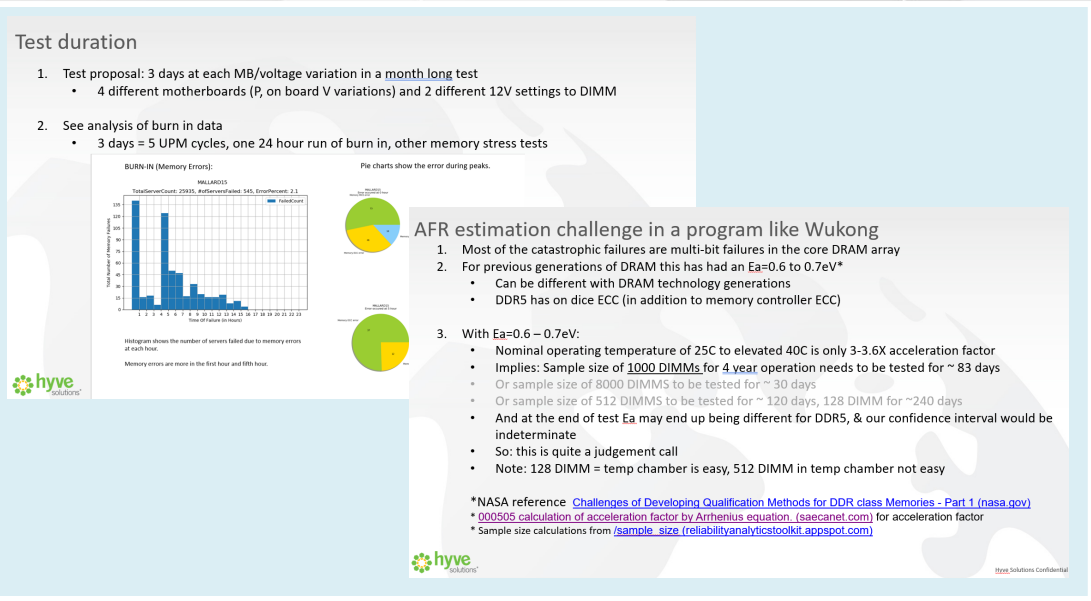
Wukong RFP: DDR validation proposal

Month: Jan 2023
Nominator: Jay Shenoy

Wukong is an 8S system RFP design that we submitted to Woody. QBR feedback is “this is the best RFP submission ever from Hyve”. Wukong is DRAM heavy and so DDR qualification at a reasonable cost & time is the most complex of any server system type, and Hyve especially is trying to overcome feedback that our NRE is usually very high.

	Teamwork	Company Impact	Customer Delight	Comments (-> Add your own assessment on each criteria as Low/Med/High)
	H	H	H	Different from DDR quals that Hyve or any other ODM have done
Team Member List (2-7)	Dennis Pham, Chiang Wu, Ashley Chang, Jay Shenoy			

- Contained base NRE cost by aggressively using the notion of a low-cost development SKU (5X cheaper than lowest configuration). We got feedback that our NRE was lowest.
- That leads to just DDR qual costs being a knob that Woody & Hyve can turn based on analysis.
- Our DDR5 qual work with Micron and analysis of manufacturing test data gave us a suitable background
- So, we submitted an adjoining DDR5 qualification proposal that shows how to get most qualification coverage at mot efficient cost
- And tabulated expectations of coverage based on statistical estimation



Parts of DDR qual proposal

MONTHLY RECOGNITION

"What can we change to make things / processes / products better?"

PROJECT:

Hercules: EVT
Customer Sample
Expedition

TEAM:

- Terry Chen
- Chiang Wu
- Chris Ferrin
- Neil Phipps
- Maxwell Chen
- Tom Chang
- Shelby Roy

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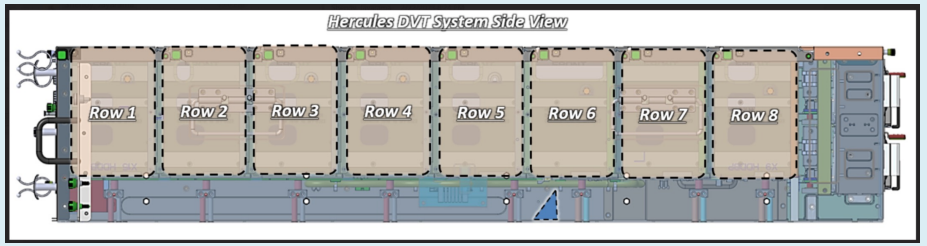
HERCULES: EVT Customer Sample Expedition

Month: February 2023
Nominator: Dennis Pham

HECULES is 4U ultra dense storage server that we are developing for Coco. Initial customer samples are expected to land at Coco's datacenter by B/MAR 2023. This is a highly visible milestone for the customer. As a result, a SWAT team was formed consisting of multiple cross-functional teams who built, tested, debugged and validated QTY x 4 customer samples.

	Teamwork	Company Impact	Customer Delight	Comments (-> Add your own assessment on each criteria as Low/Med/High)
	H	H	H	Debug / Resolution of Multiple Sightings, On-Time Delivery
Team Member List (2-7)	Terry Chen, Chiang Wu, Chris Ferrin, Neil Phipps, Maxwell Chen, Tom Chang, Shelby Roy			

- Sighted and resolved numerous high impact bugs prior to shipment.
- Expedited build and configuration of QTY 4 x customer samples.
- Multiple firmware (BMC, Expander) builds to resolve high impact bugs.
- System performance benchmarking and power sanity check.



MONTHLY RECOGNITION

"What can we change to make things / processes / products better?"

PROJECT:

ARMOR: POC 2

TEAM:

- Chiang Wu
- Shelby Roy
- Alberto Sanchez
- Dennis Pham

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ARMOR: Proof Of Concept (POC) 2

Month: February 2023
Nominator: Dennis Pham

ARMOR is a study of conformal coating to prevent system level corrosion which increases overall system reliability from highly impactful events during operation. The team has been conducting numerous empirical tests of different coating types from various manufacturers. After the completion of phase 1, WDY leadership challenged the team to present a more cost effective POC.

	Teamwork	Company Impact	Customer Delight	Comments (-> Add your own assessment on each criteria as Low/Med/High)
	H	H	H	Display of Customer Obsession to Identify an Alternative Solution and Expedited Validation of Solution
Team Member List (2-7)	Chiang Wu, Shelby Roy, Alberto Sanchez, Dennis Pham			

- Summary: QTY 3 x viable low-cost solutions identified and validated in less than 1W timeframe
- Expedited Commercial Quotes
- Expedited Material Procurement (Out of Pocket)
- Day of Coating Application, Validation and Results Summary Generation
- Onsite Customer Support.
- SAFETY FIRST APPROACH!

MONTHLY RECOGNITION

"What can we change to make things / processes / products better?"

PROJECT:

CPU Bent Pin Physical Damage Motherboard on Ramses Pure Improvement: Inhouse Quality

TEAM:

- Tony Ly
- Brandon Selva
- Binh Thai
- Ebba Genna

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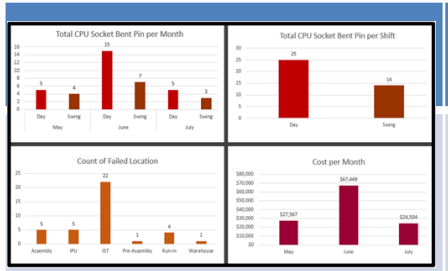
CPU Bent Pin Physical Damage Motherboard on Ramses Pure Improvement: Inhouse Qlty

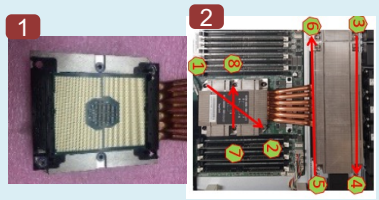
Month: December 2022
Nominator: Lance Fong

Problem Statement: the CPU Bent Pin physical damage on Motherboard rate on the Ramses Pure lines is high with quantities 9, 22, and 8 respectively on May, June, and July. On average, there were 13 damages per month. All details of estimated cost and shift are displayed on the chart.



Teamwork	Company Impact	Customer Delight	Comments
H	H	H	The CPU is attached to the plastic carrier then the whole assembly is attached to the heatsink as pic 1. The heatsink with carried CPU is installed to the MB and use 12 in-lb to tighten the Torx bit screw in the following order as pic 2.

Tony Ly, Brandon Selvar, Binh Thai (leader), Ebba Genna



					To be updated after taking action		
No	Potential Failure Mode	Occurrence	Detection	RPN	Occurrence	Detection	RPN
1	Lack of training	1	1	1			
2	Carelessness	3	5	15			0
3	Tired	1	3	3			
4	Wrong CPU installation on the carrier	1	1	1			0
5	Sequence tightening is not following properly	3	3	9			0
6	No tool support so the heatsink has possibility of having non-aligned	3	3	9			0
7	MB come with bent pin	3	3	9			0
8	Lack of light	3	3	9			0
9	Pressure of output number	3	1	3			

No	Countermeasure Action	PIC	Due Date
1	Share the data to operators and convey to them the message of carelessness	Ebba	9/30/2022
2	Give awareness training to operators and log training record on CIS	Tony	10/15/2022
3	Come up with a tool guider to prevent the mis-alignment	Binh Thai	Prototype: 09/30/22 Test: 10/15/22 Implementation: 11/01/22
4	Track data every week for 3 months after implemented	Binh Thai	2/1/2023
5	Measure the light level of each station and	Brandon	10/15/2020

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“What can we change to make things / processes / products better?”

PROJECT:

Individual Contributor

TEAM:

- Manpuneet Singh

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Individual Contribution: Manpuneet Singh

Month: Jan 2023
Nominator: Nauman Navaid

Manpuneet is a Test Engineer in NPI team and Contributed well by working on Tetra project and delivering test racks on time to customer and fixed all issues internally for a smooth transition to Mass production. This program will be a high runner at Hyve and will contribute significant to revenue.

	Teamwork	Company Impact	Customer Delight	Comments (-> Add your own assessment on each criteria as Low/Med/High)
	H	H	H	On time execution with excellent quality
Team Member List (2-7)	Manpuneet Singh			

- Worked on three Tetra SKUs (Tetra 01, 03 and 05) simultaneously
- Executed test plan with utmost customer satisfaction
- Because of his work by testing racks, Hyve was ahead of schedule delivering test racks to Woody
- Tetra project went very smoothly in NPI due to his forward thinking by working with internal teams
- One of the big compliment got is: "every Hyve TPM wants him as TE for their project".

Thank you!