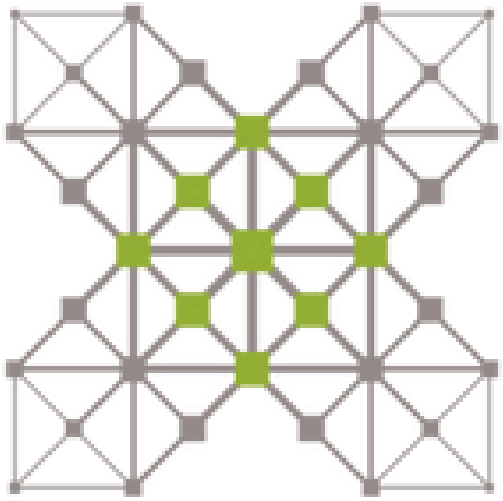

trinityX

by ClusterVision

ClusterVision in a nutshell

Turn-key AI, HPC, Big Data & Cloud solution provider

20 YRS

Leading SME specialist for HPC

PacificTeck
HPC and AI Experts

Partnership with PacificTeck for the Japanese market

800+

Projects successfully completed

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Developer of TrinityX, The open source cluster manager

20+

Top500 HPC Installations historically

We know HPC

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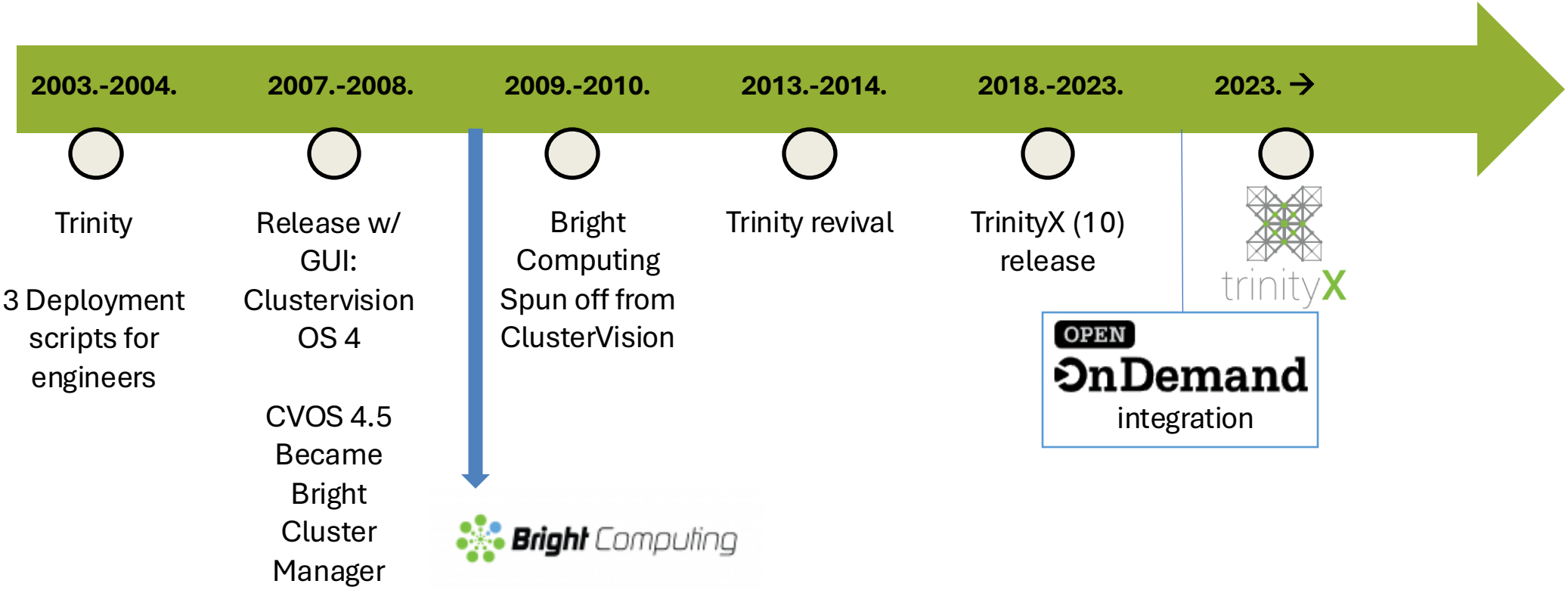
Open Source HPC & AI Cluster Manager designed to make your cluster agile, reliable, and responsive to your organizational needs

- Designed ground up to provide all services required in a modern HPC system
- Allows full customization of your cluster installation
- Dramatically speeds up installation time and reduces administrative efforts
- Allows for unified management of HPC, A/I and cloud bounced clusters
- Follows the tool-box approach
- Very modular

https://github.com/clustervision/trinityX

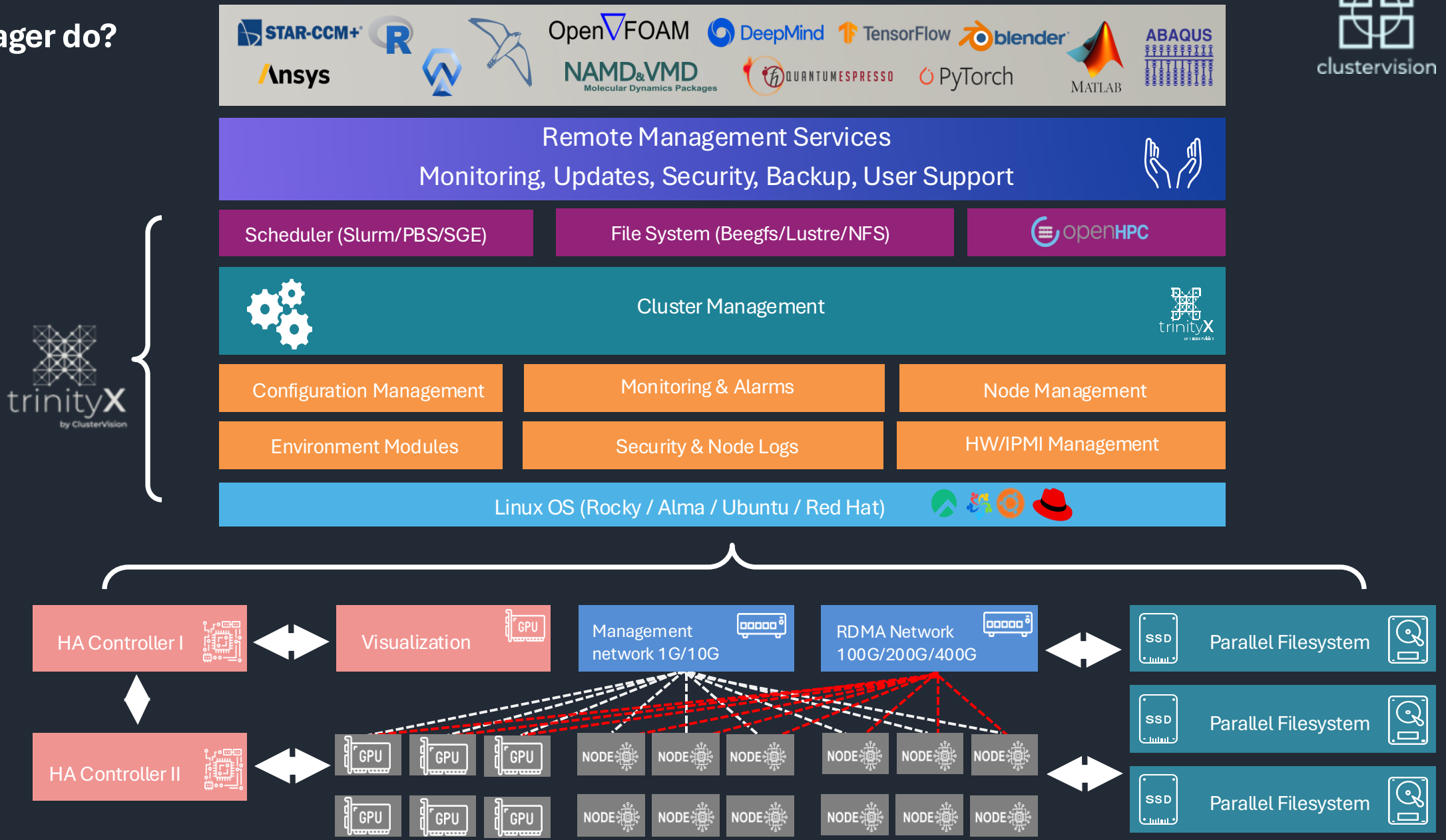
Rocky Linux™ AlmaLinux Ubuntu debian

Brief history of TrinityX



What does a cluster manager do?

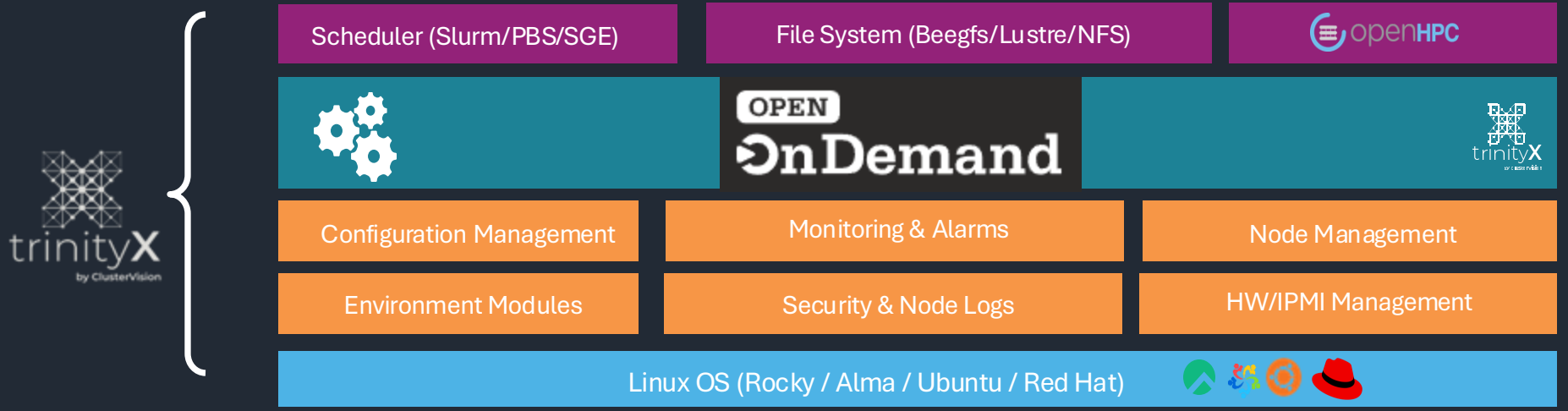
clustervision



What does a cluster manager do?

clustervision

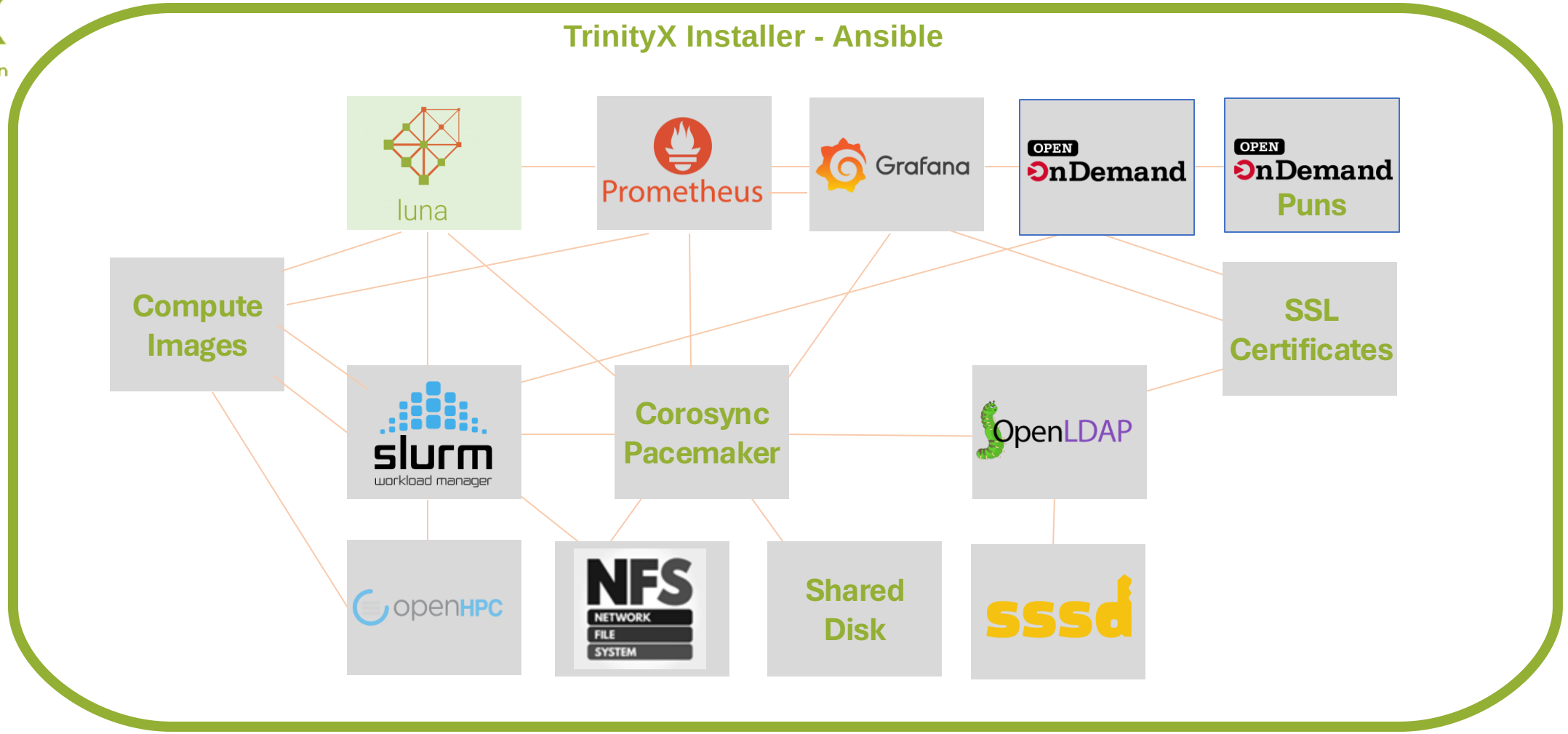
It's the glue between the many components and manages the flow of an AI/HPC cluster



Most commonly, a cluster manager is command line driven, however OpenOndemand integration provided a sturdy graphical framework for our in-house developed applications.

This, of course besides off-the-shelve third party applications for administrators but also users! The latter is not so standard.

Main components of TrinityX in tin-foil hat formation



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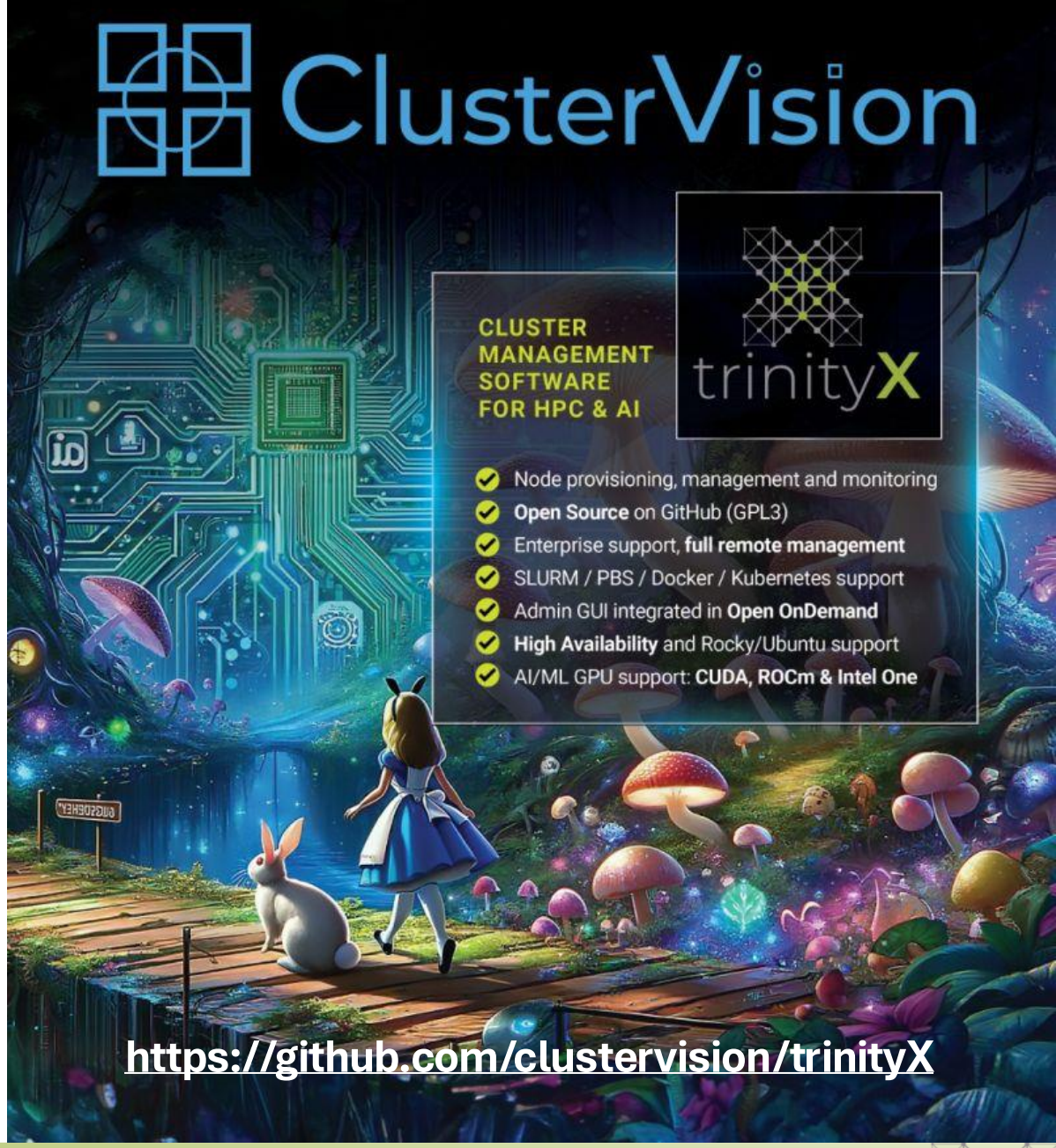
Demo Time!!

THANK YOU!

Feel free to contact our partner:

PacificTeck
HPC and Machine Learning Experts

www.pacificteck.com
E-mail: sales@pacificteck.com



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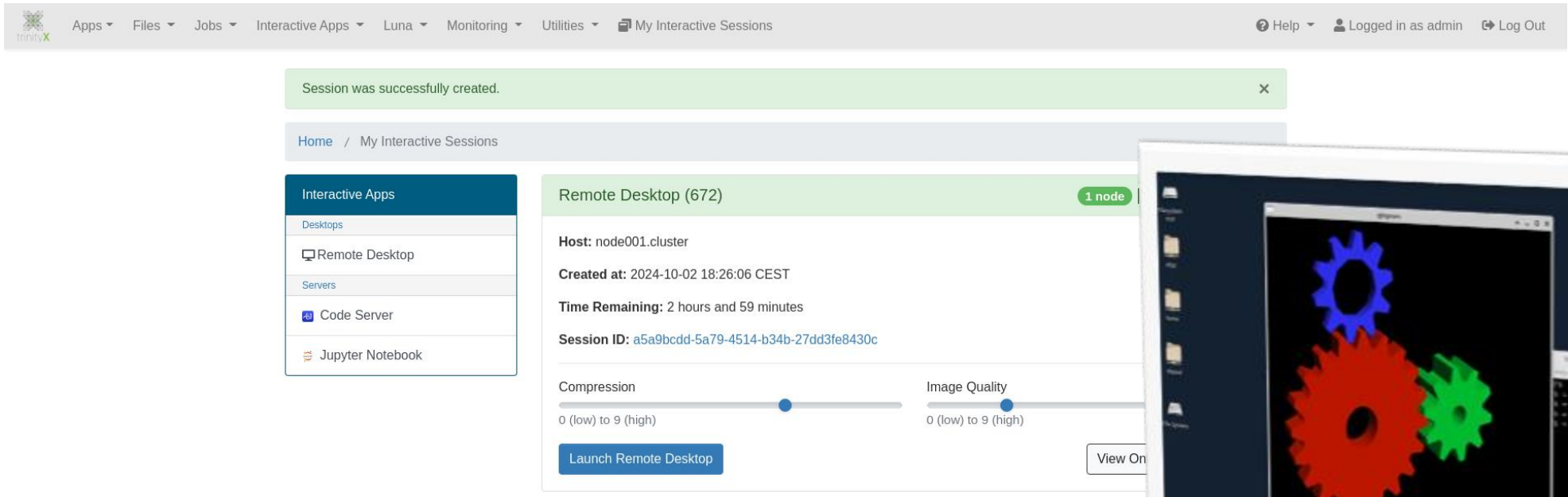
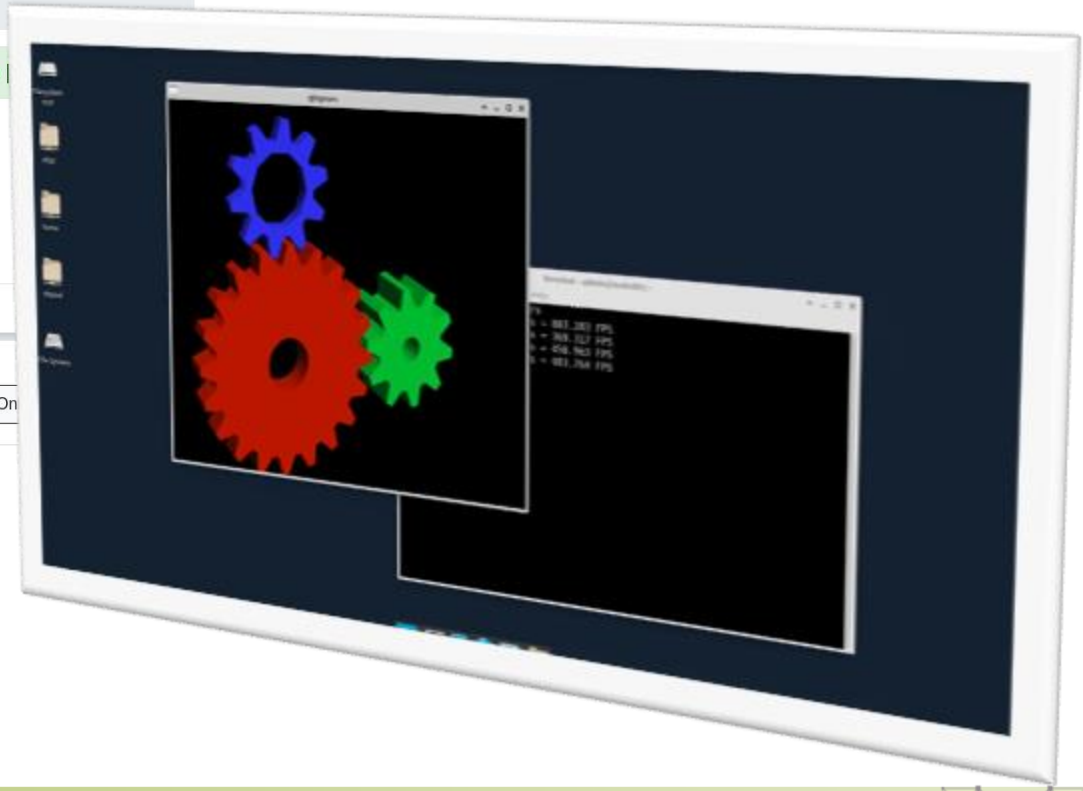
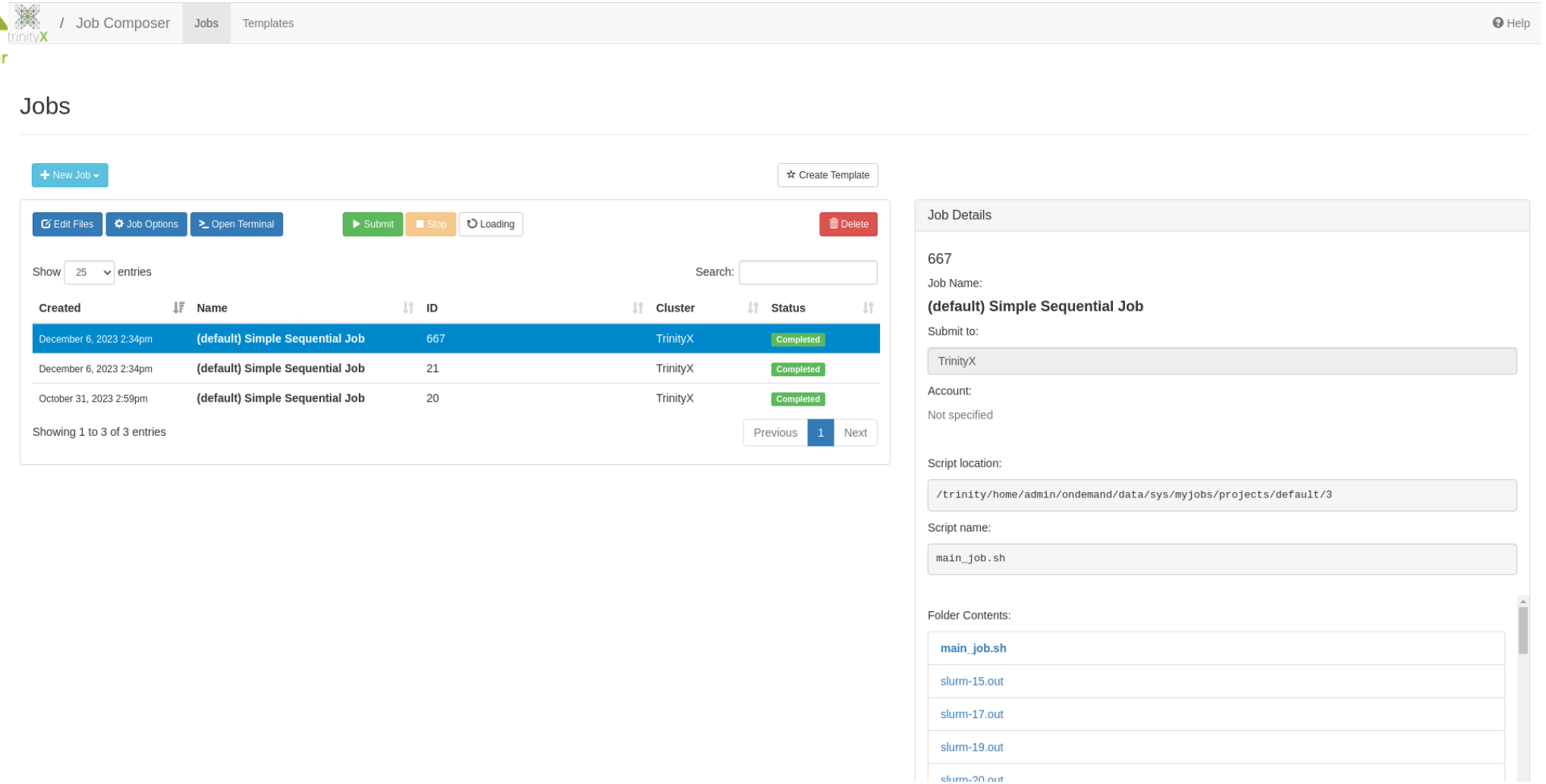
Starting a stateful remote desktop





OOD applications

Submit a job based on template or custom script



Luna - node, group and osimage management

Home / Node

Node List

Add New Node

Show 10 entries

Search:

S. NO.	NAME	GROUP	OSIMAGE	OSIMAGETAG	SETUPBMC	BMCSETUP	STATUS	TPM_UUID	ACTIONS
1	node001	compute	compute	NONE	TRUE	compute	Luna installer: success	False	
2	node002	compute	compute	NONE	TRUE	compute	Luna installer: success	False	
3	node003								
4	node004								
5	node005								
6	node006								
7	node007								
8	node008								
9	node009								
10	node010								

Showing 1 to 10 of 10 entries

Home / Group

Group List

Add New Group

Show 10 entries

Search:

S. NO.	NAME	BMCSETUPNAME	OSIMAGE	OSIMAGETAG	ROLES	INTERFACES	ACTIONS
1	compute	compute	compute	NONE	NONE	interface = BOOTIF network = cluster interface = BMC network = ipmi	
2	ubuntu	compute	ubuntu	NONE	NONE	interface = BOOTIF network = cluster interface = BMC network = ipmi interface = ext1 network = external	
3	login	compute	compute	NONE	NONE	interface = BOOTIF	
4	my_compute	compute					

Showing 1 to 4 of 4 entries

Home / OS Image

OS Image List

Add New OS Image

Show 10 entries

Search:

S. NO.	NAME	KERNELVERSION		STRIBUTION	OSRELEASE	ACTIONS
1	compute	5.14.0-427.35.1.el9_4.x86_64	compute-172	redhat	9	

Showing 1 to 1 of 1 entries

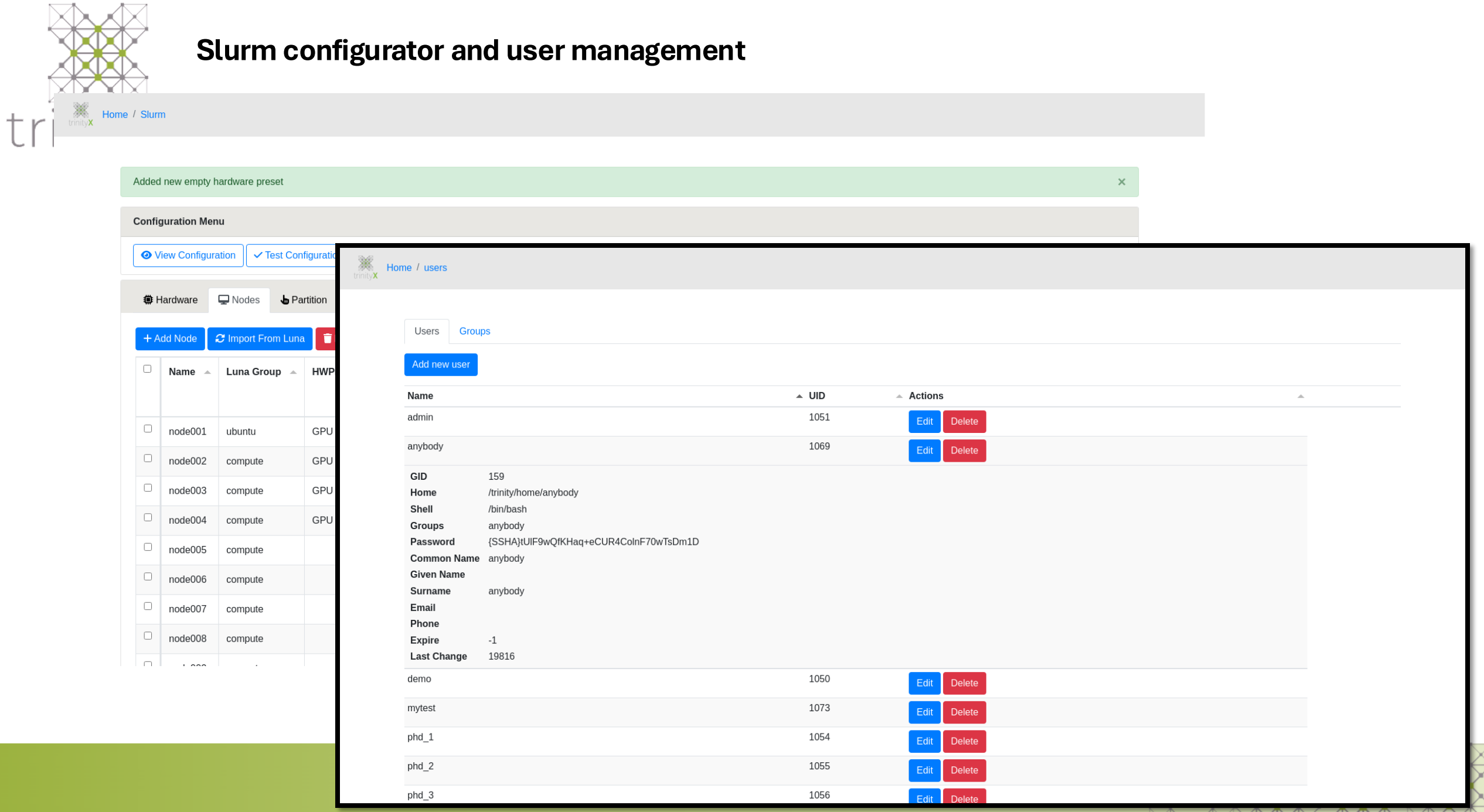
Previous 1 Next

Packing OS Image >> compute...

```
osimage pack for compute queued
2024-09-27 12:30:19 :: queued pack osimage compute with id 35
2024-09-27 12:30:19 :: assembling kernel and ramdisk for osimage compute
```

Close

Slurm configurator and user management

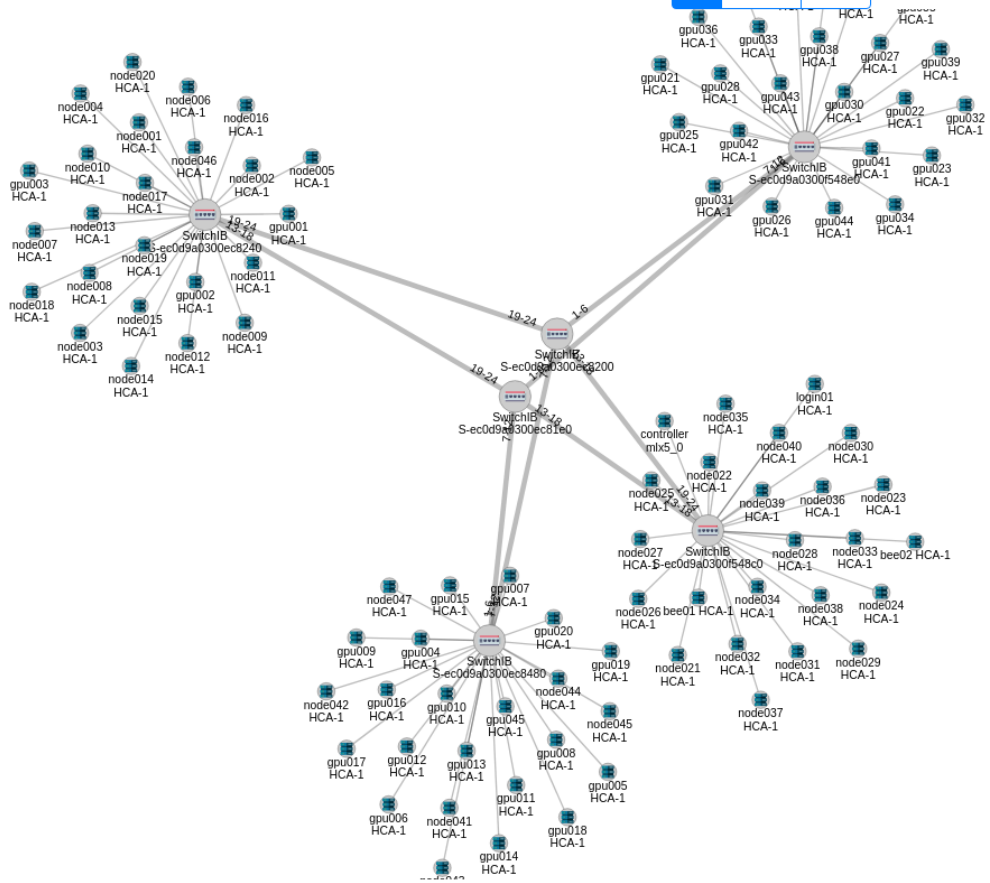


Infiniband Diagnostics – identifies bad links easily

Home / infiniband

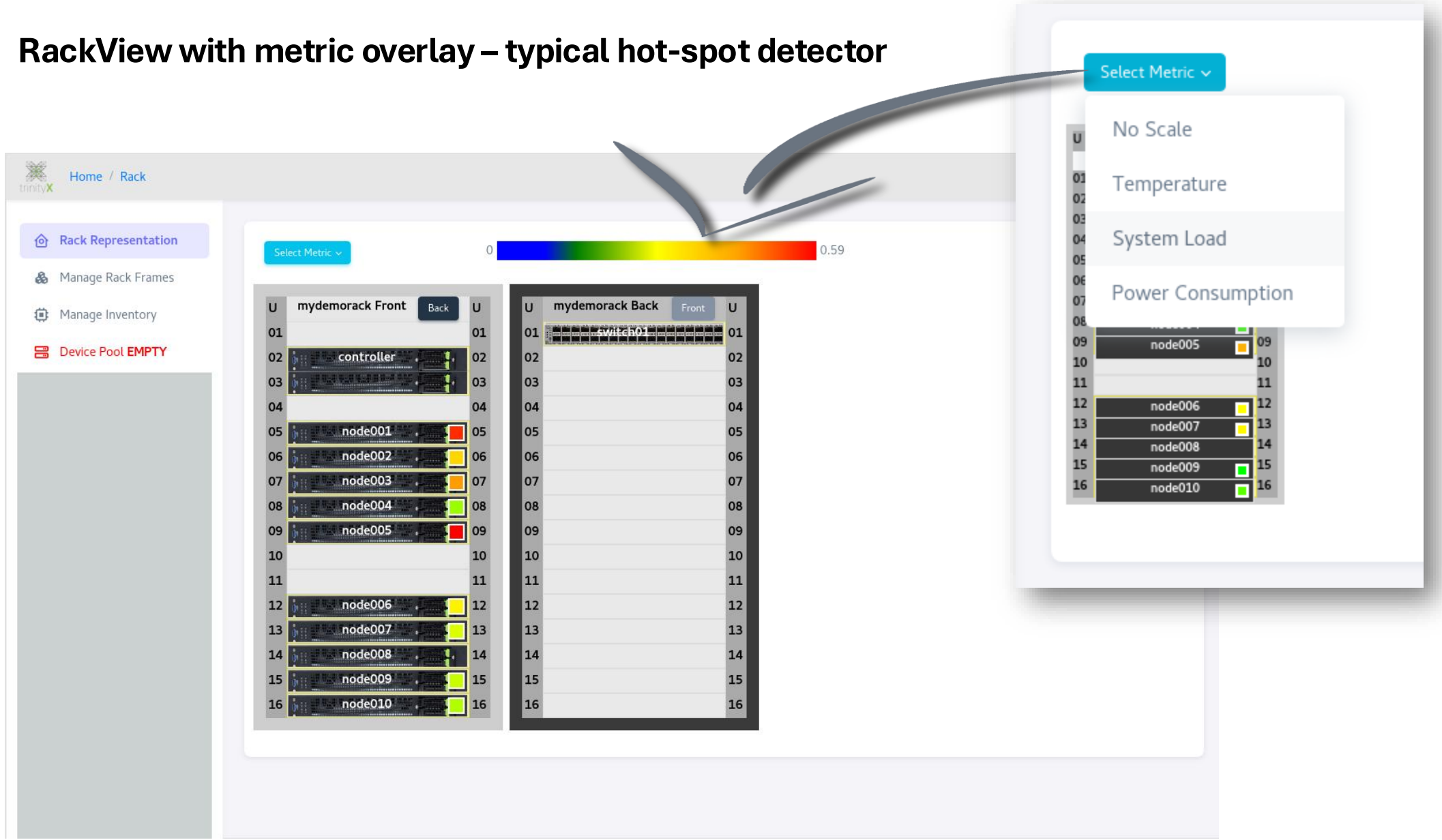
# Switches	6	# Nodes	96	# Links	104	Simulation	All

All | Nodes | Links | Save

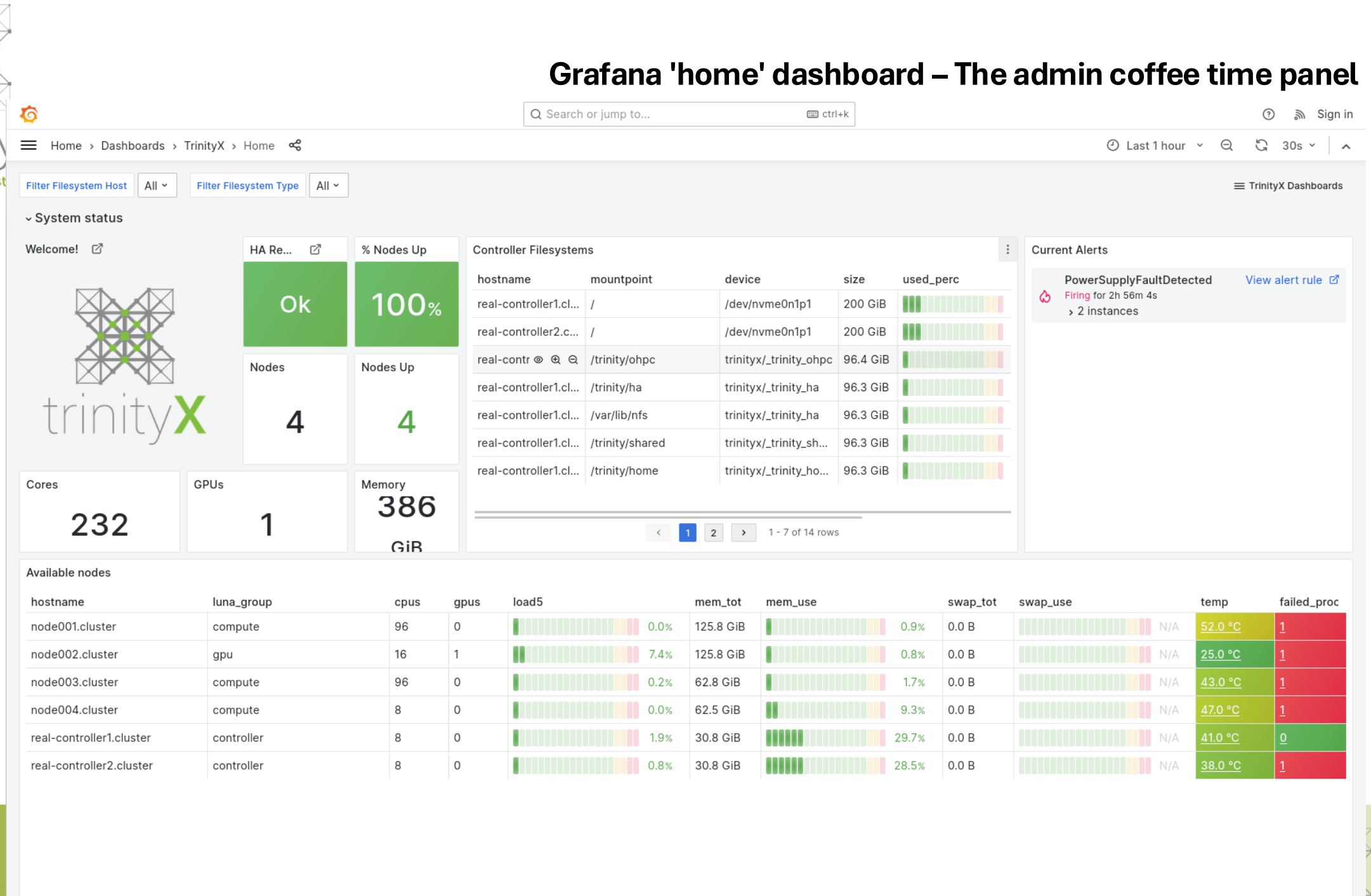


Name	UID	Port	Target
SwitchIB Mellanox Technologies	S-ec0d9a0300ec8240		
SwitchIB Mellanox Technologies	S-ec0d9a0300ec8480		
SwitchIB Mellanox Technologies	S-ec0d9a0300f548e0		
SwitchIB Mellanox Technologies	S-ec0d9a0300ec8200		
SwitchIB Mellanox Technologies	S-ec0d9a0300ec81e0		
SwitchIB Mellanox Technologies	S-ec0d9a0300f548c0		
node019 HCA-1	H-506b4b03003fa98a		
node017 HCA-1	H-506b4b03003fa9a2		
node015 HCA-1	H-506b4b030043f9b2		
node013 HCA-1	H-506b4b030043f9aa		
node011 HCA-1	H-506b4b030043fa72		
node009 HCA-1	H-506b4b03003fa952		
node007 HCA-1	H-506b4b030041d02a		
node005 HCA-1	H-506b4b03003fa9a6		
node003 HCA-1	H-506b4b030043fa6e		
node001 HCA-1	H-506b4b03003fa962		
gpu002 HCA-1	H-506b4b030043fa3e		
gpu003 HCA-1	H-506b4b030043fa86		
node046 HCA-1	H-08c0eb0300ddc0f6		
gpu001 HCA-1	H-506b4b030043f9f6		
node004 HCA-1	H-506b4b030043f9de		

RackView with metric overlay – typical hot-spot detector



Grafana 'home' dashboard – The admin coffee time panel



Host All GPU All

Home TrinityX Dashboards

GPU [node002.cluster] [1c222a41-e1aa-b1f5-cbf7-1f35c2a8f2e3]

Name
NVIDIA RTX A6000

P-State
P0

Driver Version
550.78

Vbios Version
94.02.5C.00.02

GPU Utilization %

Memory Utilization %

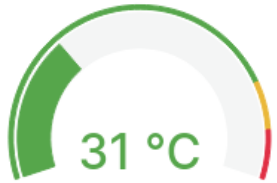
Temperature

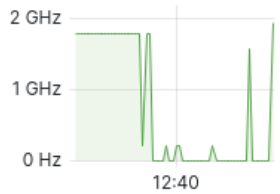
Throttle Reasons
No data

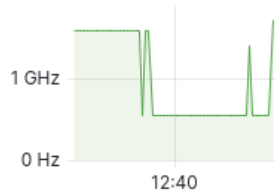
GPU Clock Spee...

Memory Clock S...

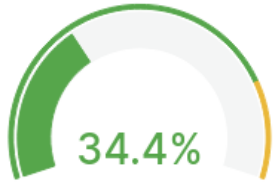
Fan Speed %

Temperature


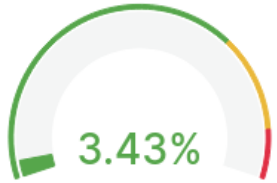
Graphics Clock S...


Video Clock Speed


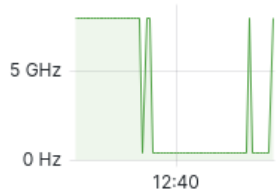
Power Draw

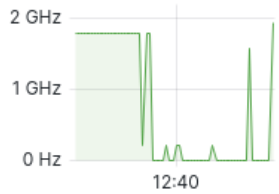
Power Draw %


GPU Utilization %

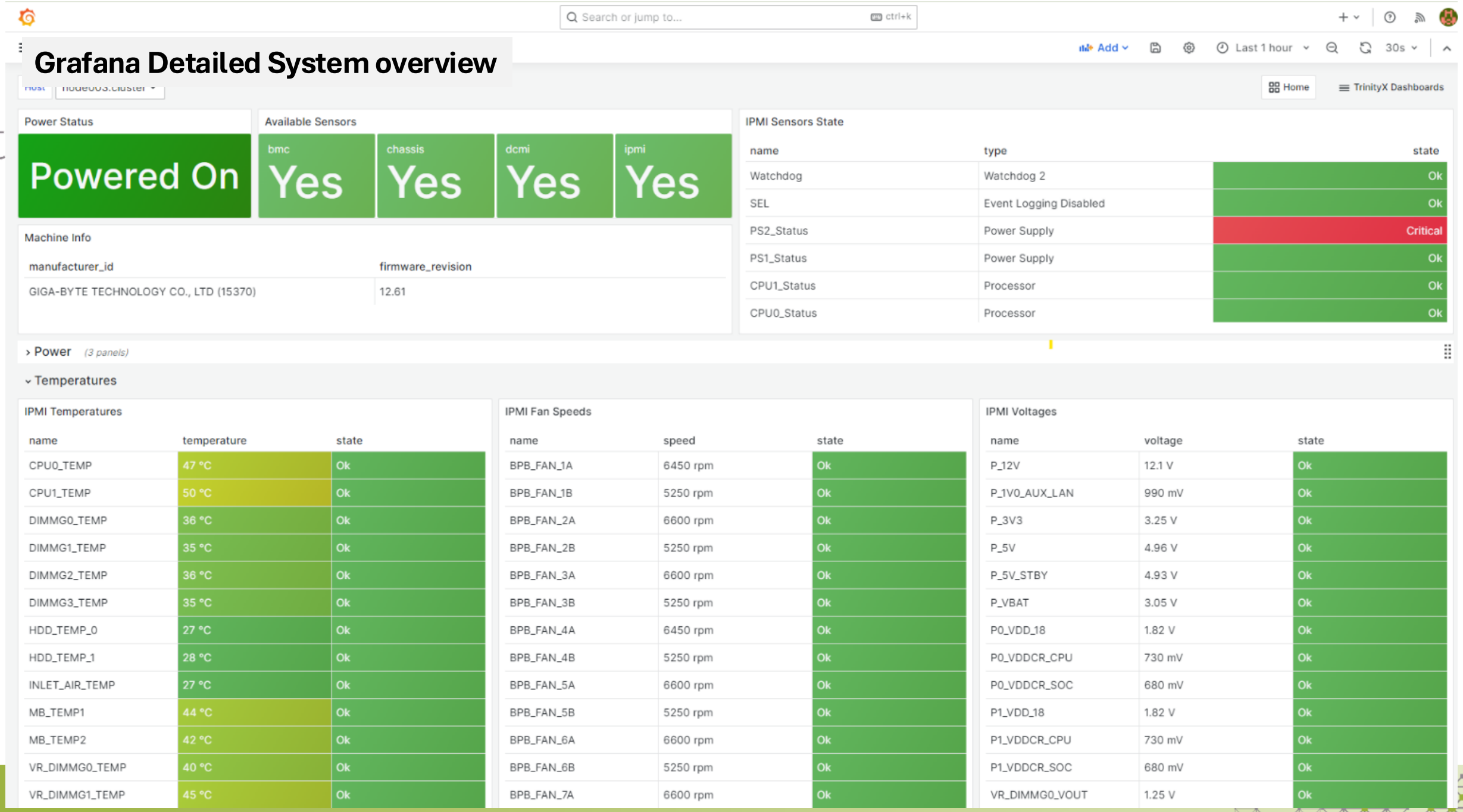
Memory Allocati...


Memory Utilizati...

Memory Clock S...


SM Clock Speed


Grafana Detailed System overview



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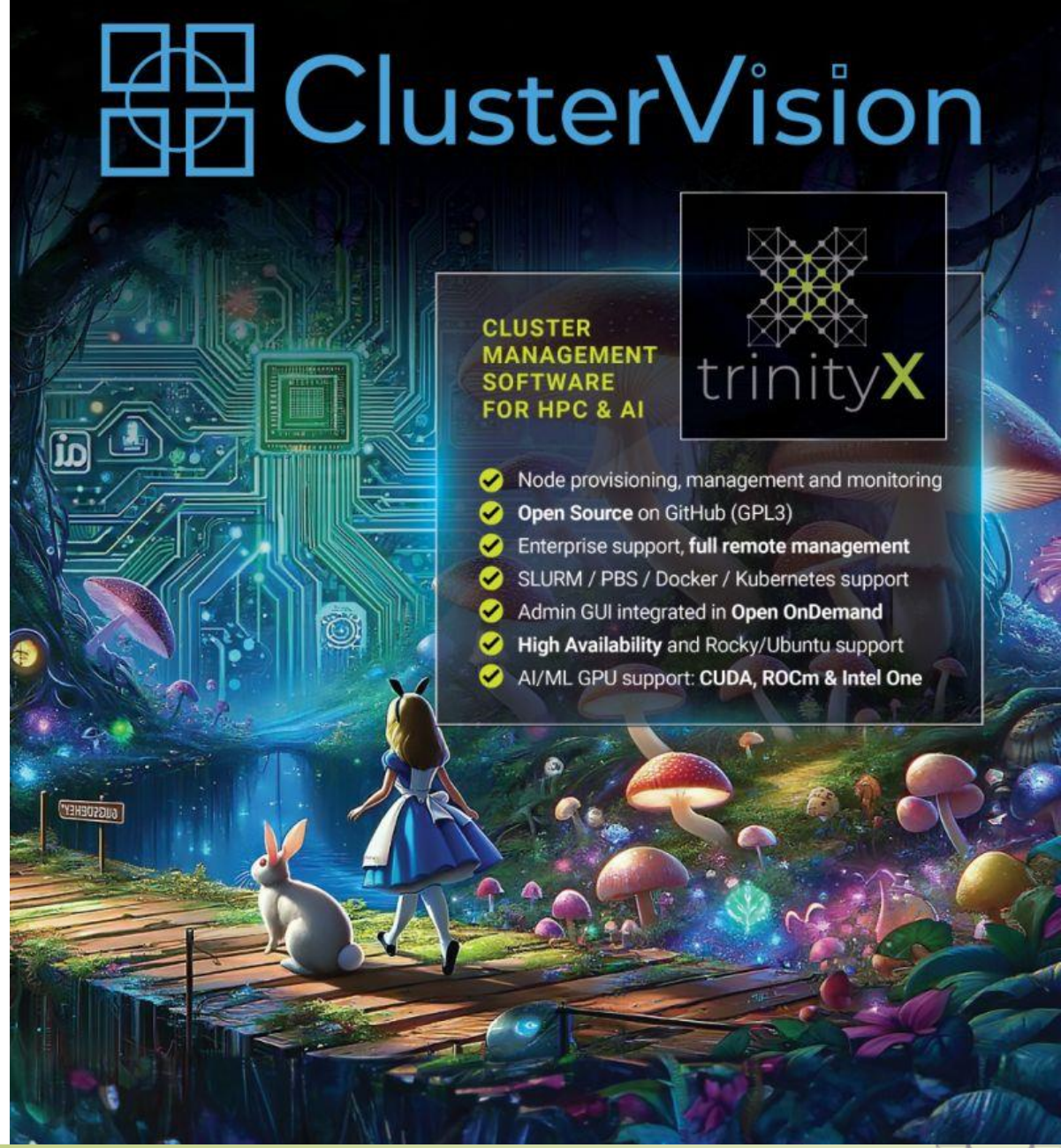
THANK YOU!

https://github.com/clustervision/trinityX



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