LINUX CLUSTER MONITOR

- One Year Progress Review -

Supermicro Solution and Integration Center

April 5th 2021

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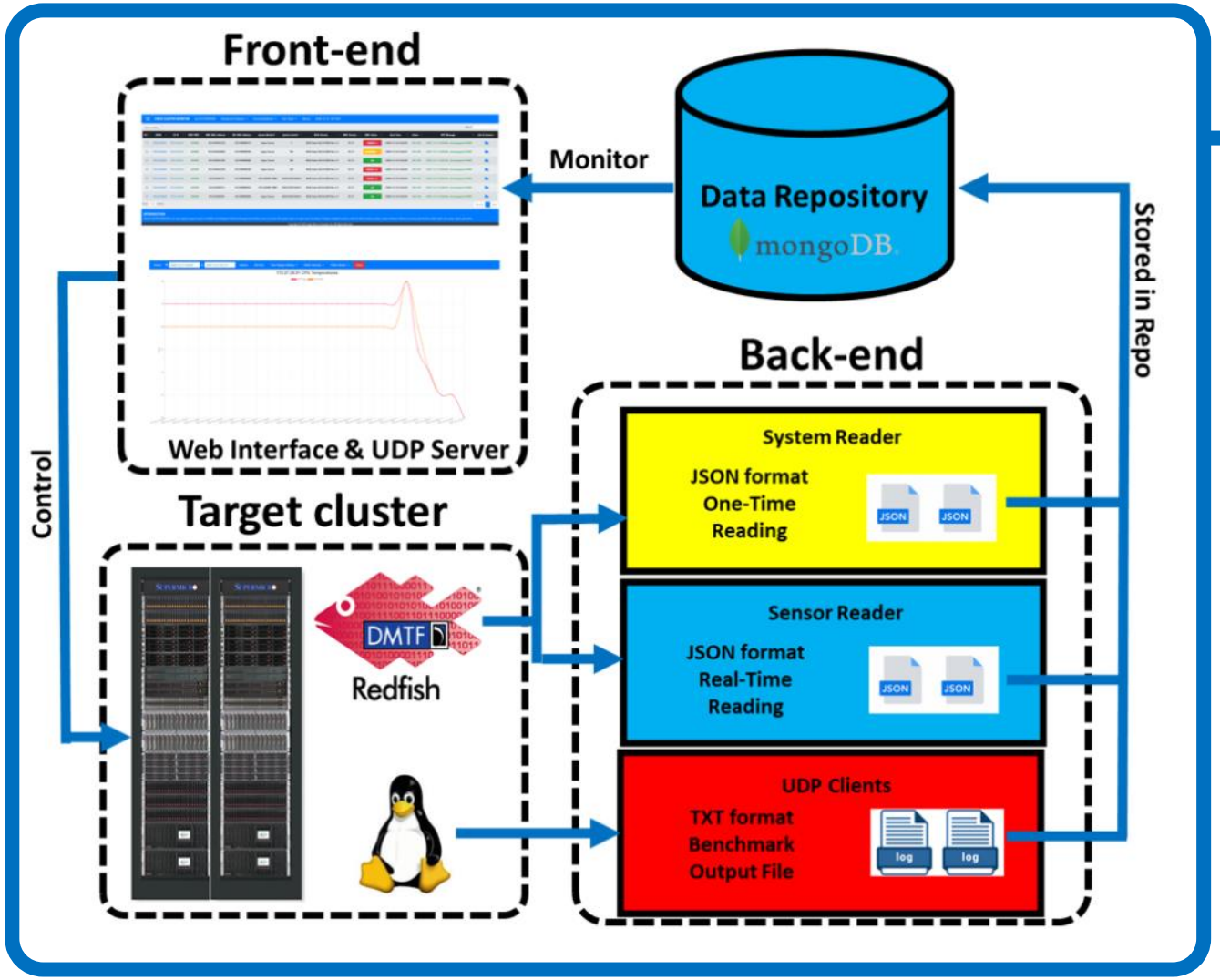
Outline

- ❑ System architecture
- ❑ Latest updates overview
- ❑ Page by page introduction
- ❑ L12 test archive: Facebook project
- ❑ Quick deployment steps

System Architecture



Containerize

docker

Auto-Generated Docker Compose file

Single command deployment anywhere:
$ docker_deploy RACK

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Latest Updates Overview

Front-end:

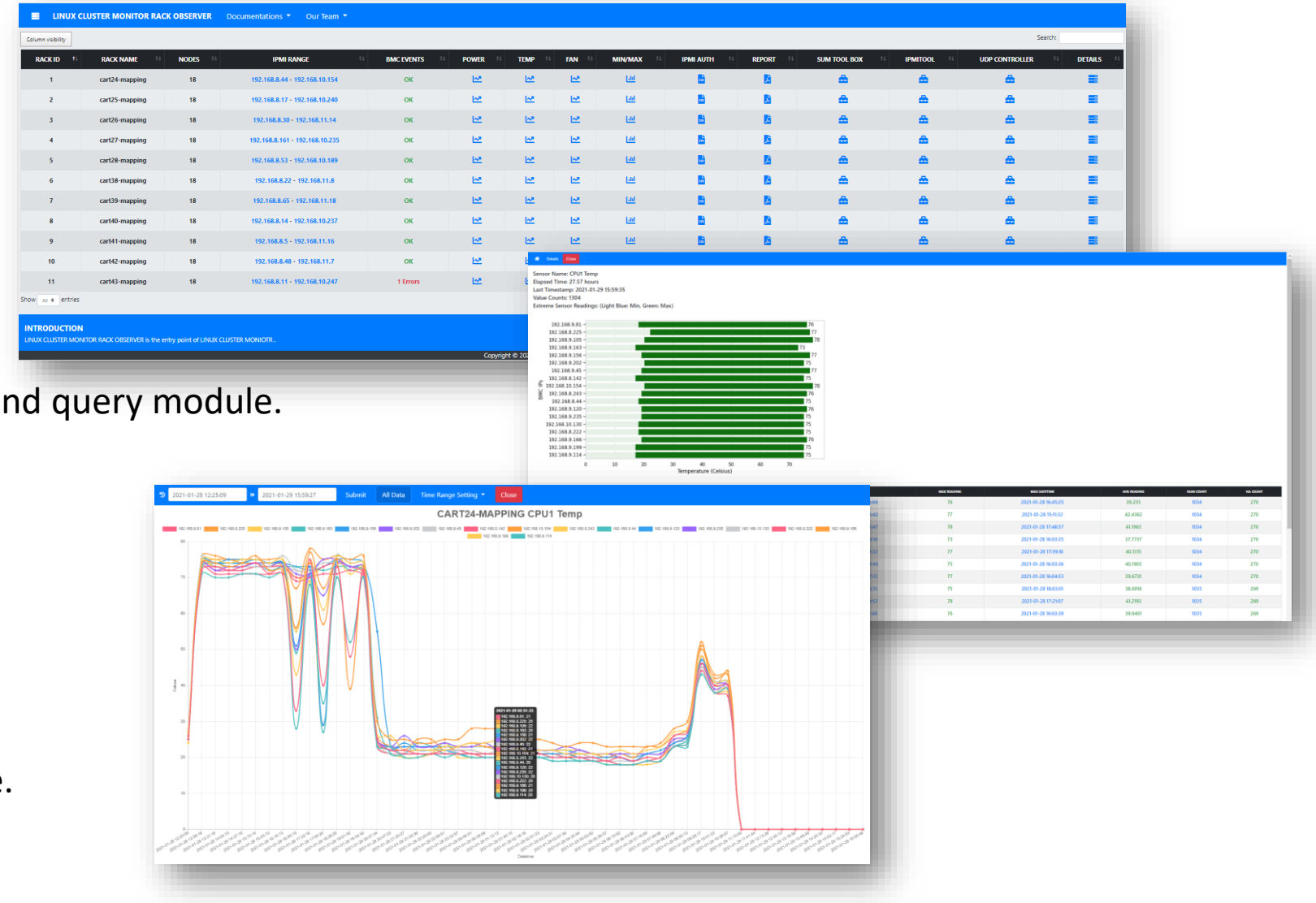
1. More advance features.
2. Min/Max reading page.
3. Benchmark support.
4. Parallelize optimized.

Back-end:

1. System password reading and query module.
2. Real-time diagram display.
3. Benchmark support.
4. Testing data backup.

Docker:

1. UDP server/client.
2. Containerize the program.
3. Compose the docker image.
4. Multi-clusters deployment.



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New: Clusters View

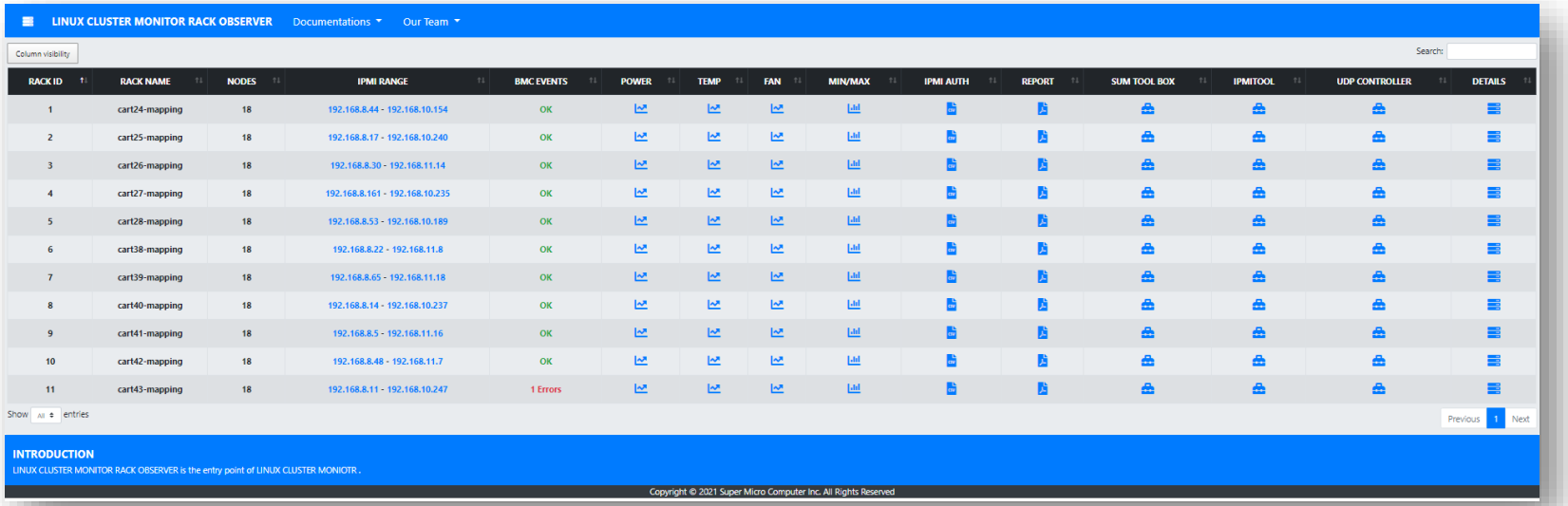
No Clusters View page

Before

By the end of Feb. 2020

New contents:

- Number of Nodes.
- Cluster status.
- Min/Max reading.
- Sensor reading.
- SUM Tool Box.
- UDP Controller (Benchmark).
- PDF report.



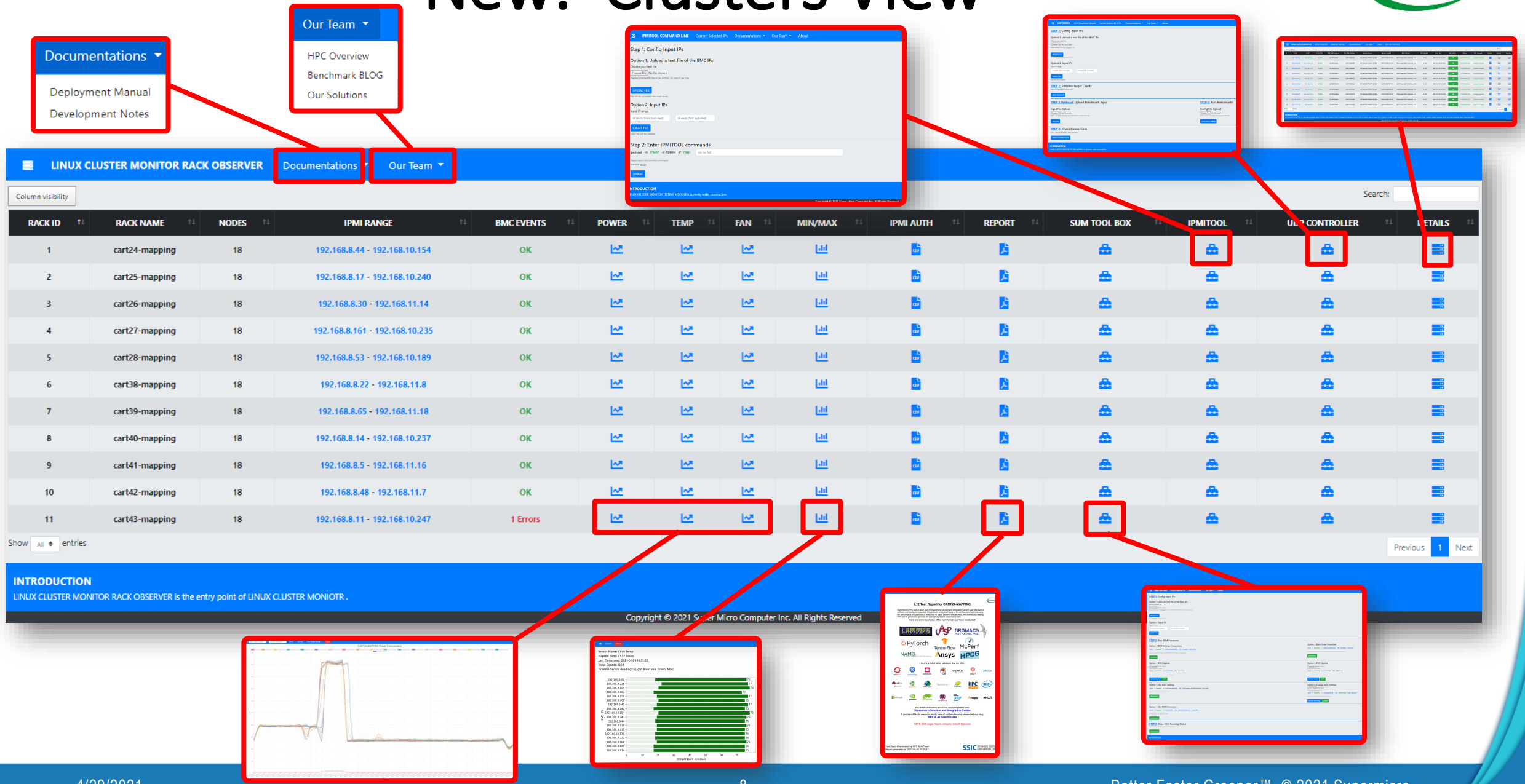
Current version

By the end of March 2021

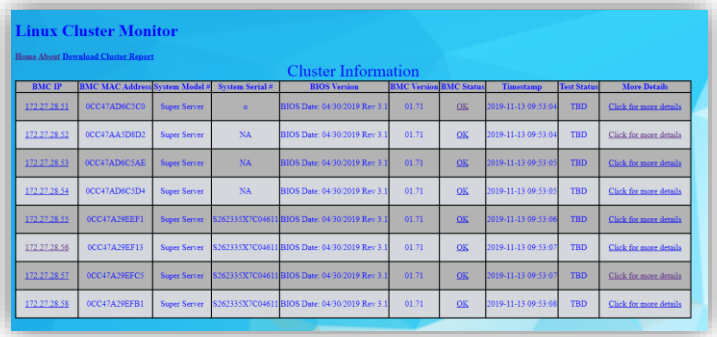
Usage:

1. Home page of Linux Cluster Monitor.
2. Cluster level monitoring.
3. Cluster level tuning.

New: Clusters View



Remake: Nodes View



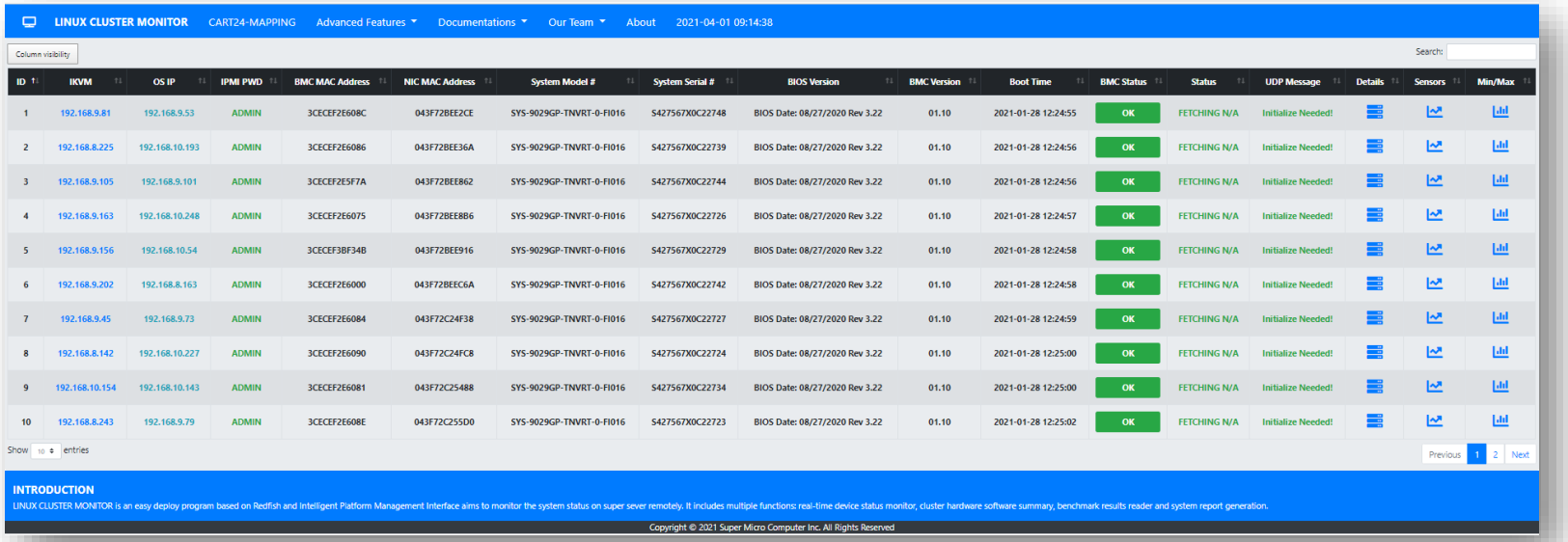
Before

By the end of Feb. 2020

New contents:

- Benchmark status
- Sensor readings.
- Min/Max readings.
- OS IP displays.
- Node status
- PDF report.

……



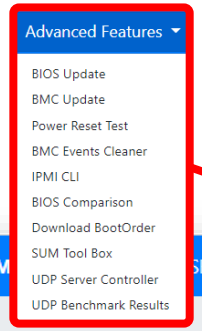
Current version

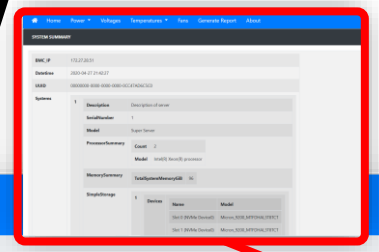
By the end of March 2021

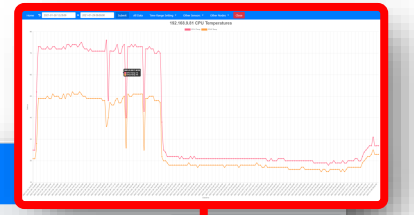
New features:

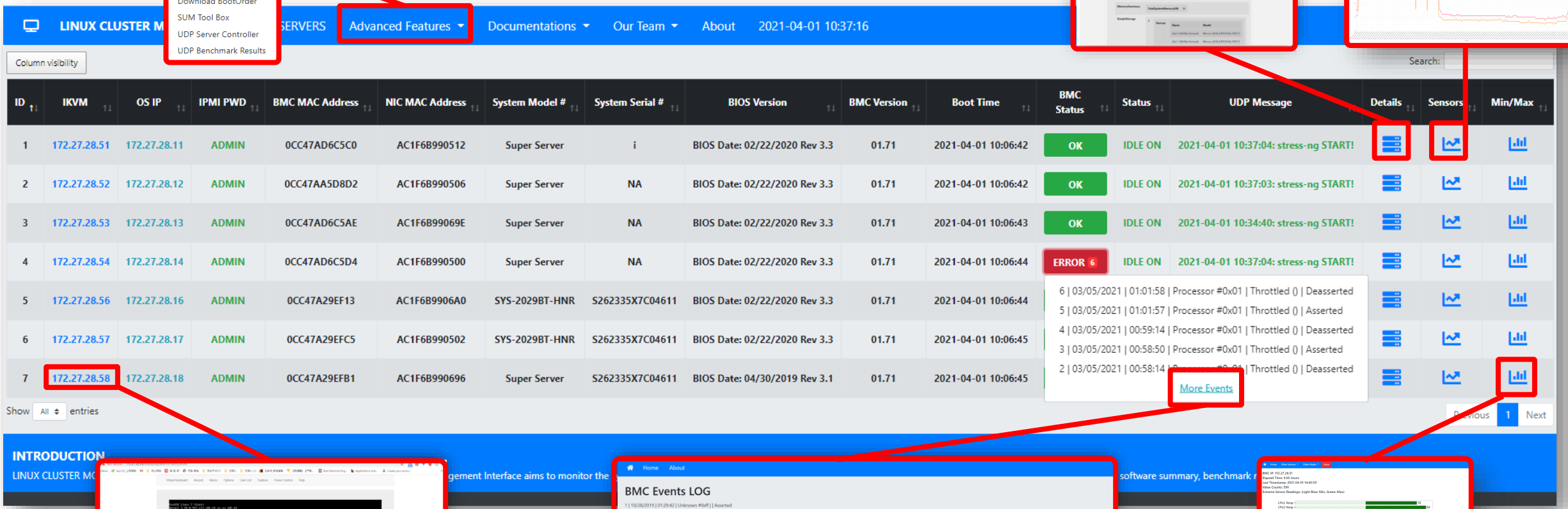
1. Column can be sorted by contents.
2. Set maximum rows for each page.
3. Column visibility setting
4. Search box to locate important message.

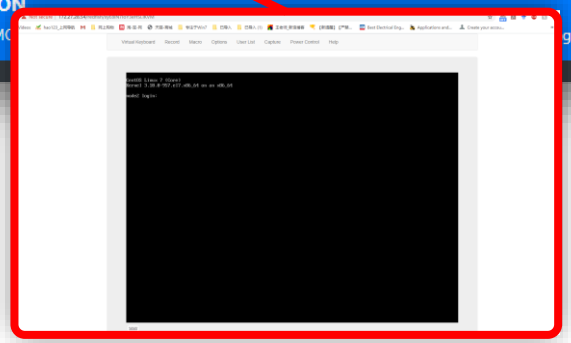
Remake: Nodes View



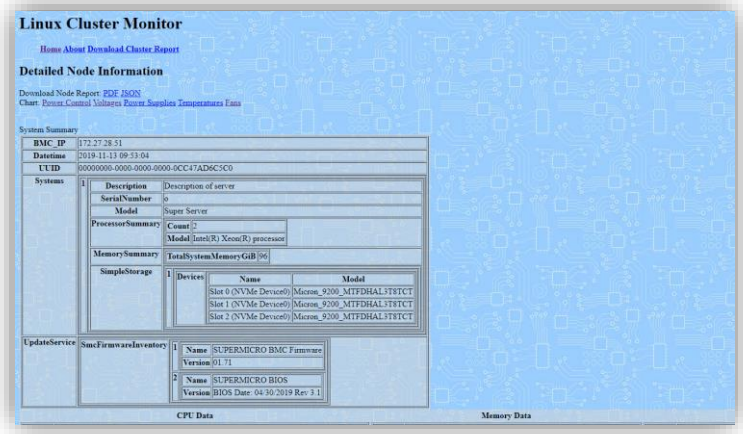








Remake: Details Page

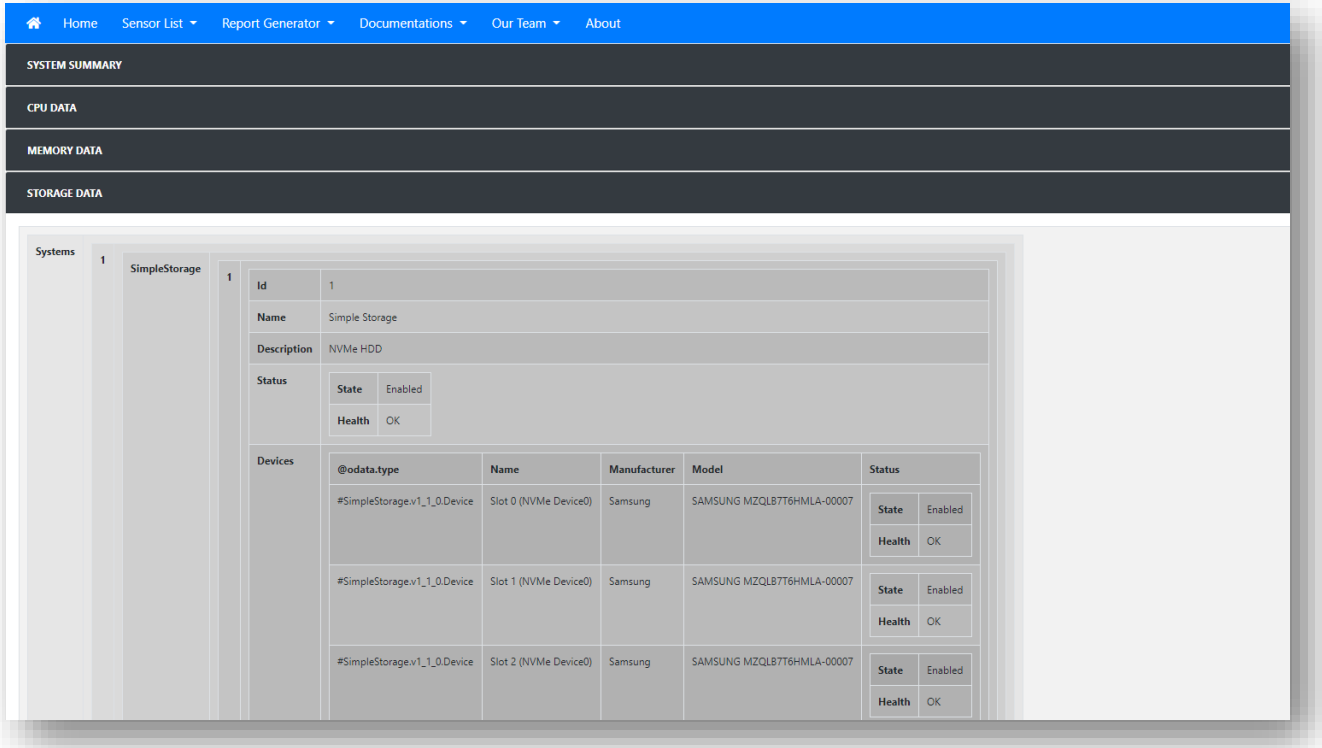


Before

By the end of Feb. 2020

New contents:

- Sensor list with Min/Max reading
- New report generator.
- More diagrams.
- Foot notes.



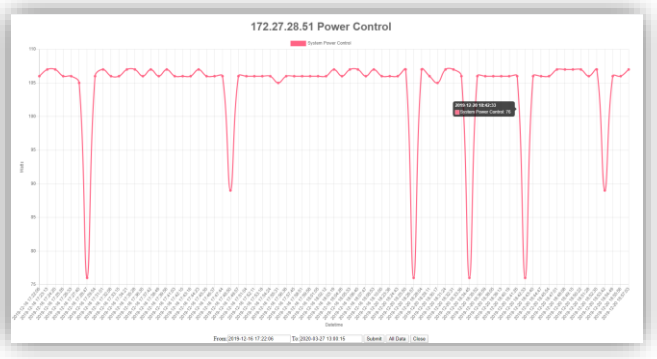
Current version

By the end of March 2021

New features:

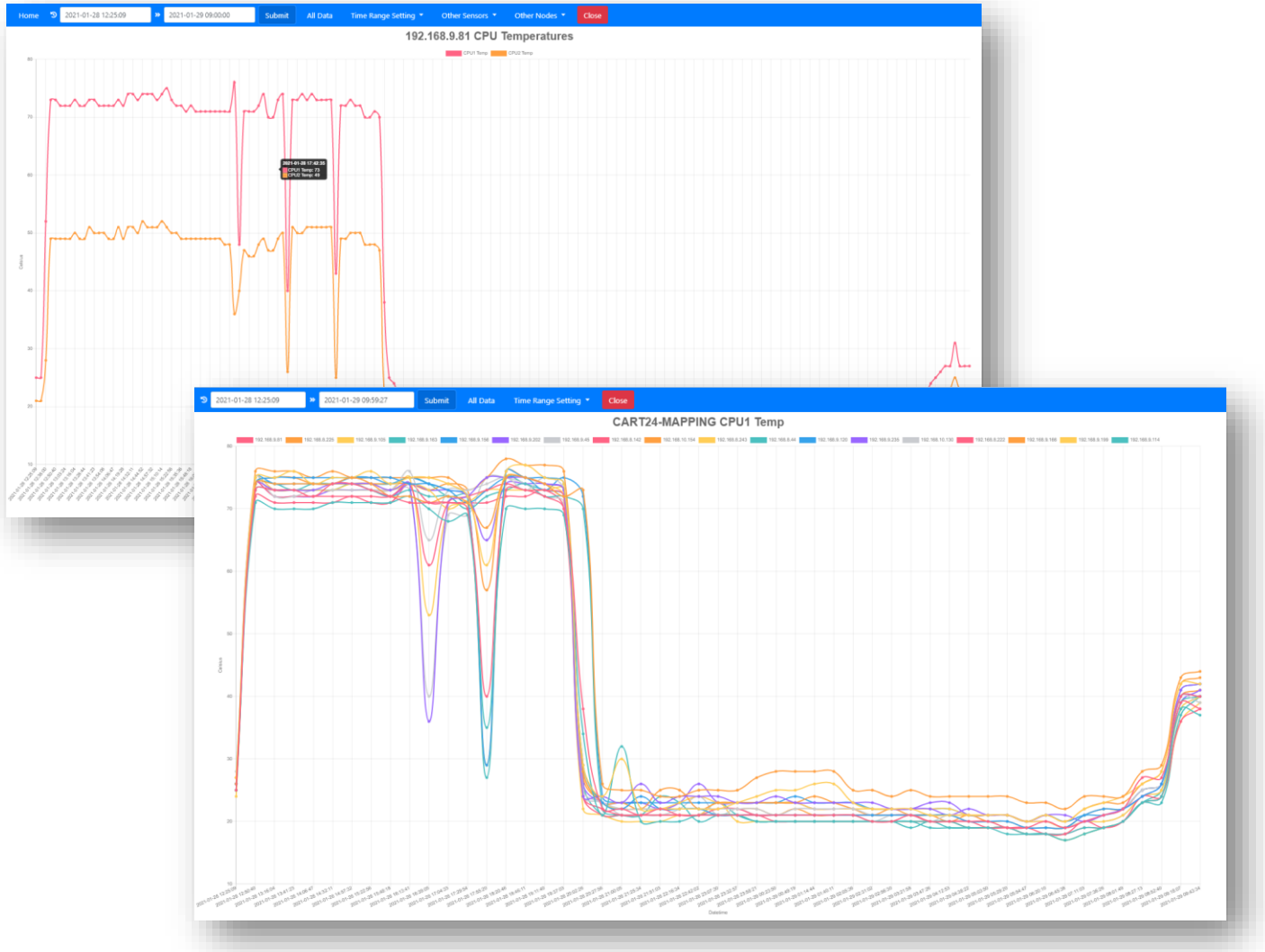
1. Navigation bar with dropdown menu.
2. Collapsible table with hardware information.

Remake: Sensor Reading



Before

By the end of Feb. 2020



Current version

By the end of March 2021

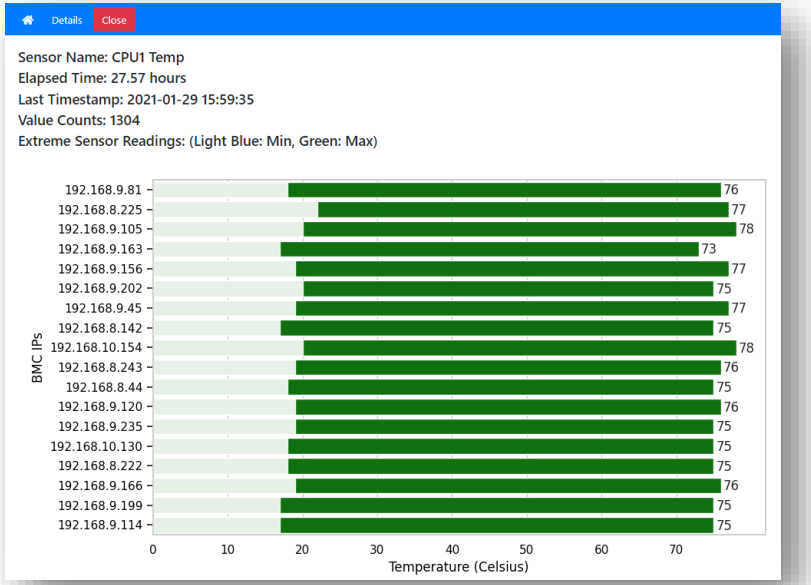
New contents & features:

- More sensors included.
- Group by node and by cluster.
- Adjustable time range.
- Quick jump to other sensors.
- Performance has been optimized.

New: Min/Max Reading

About this page:

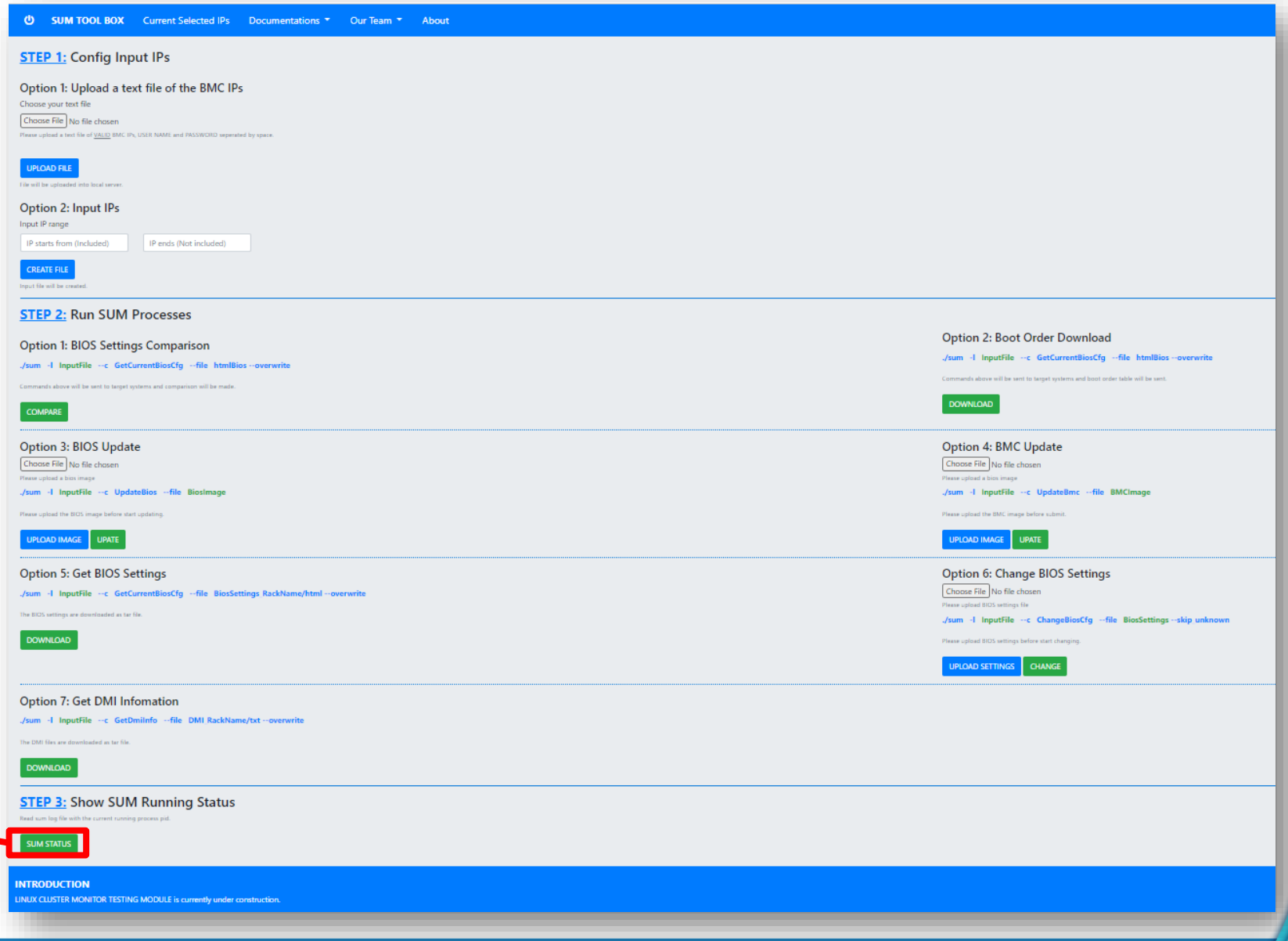
- Locate the peak readings.
- Locate the abnormal node.
- Timestamp of peak readings.
- Bar-plot and table.
- Group by node and by cluster.
- Average readings.
- Count N/A readings.
- Temperature, Fan speed, Voltage and Power are all included.



New: SUM Tool Box

About this page:

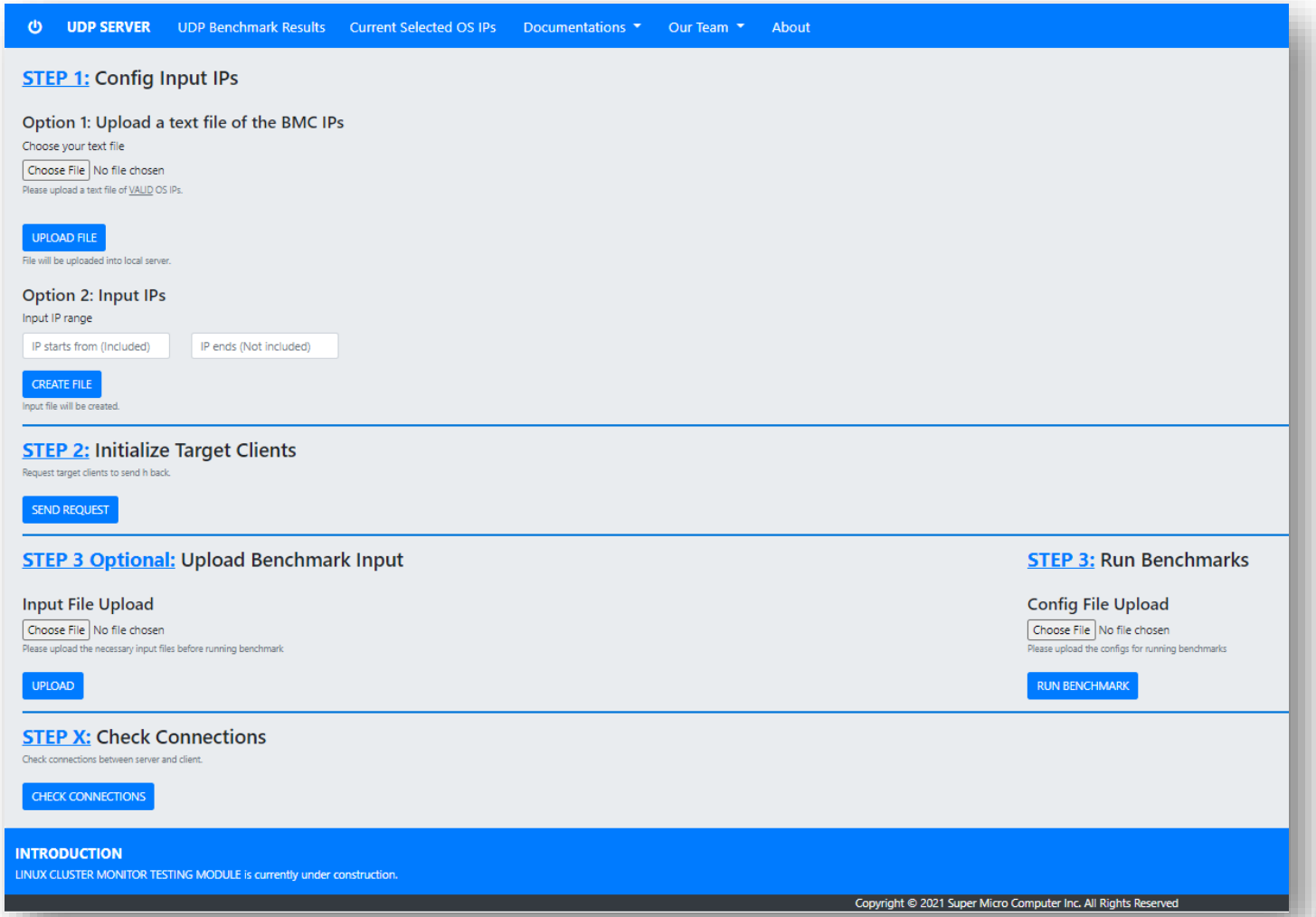
- Update BIOS.
- Update BMC firmware.
- Get BIOS settings for all nodes.
- Compare BIOS settings.
- Change BIOS settings
- Download boot order.
- Get DMI information.
- Show SUM running status.



New: Benchmark Control Center

About this page:

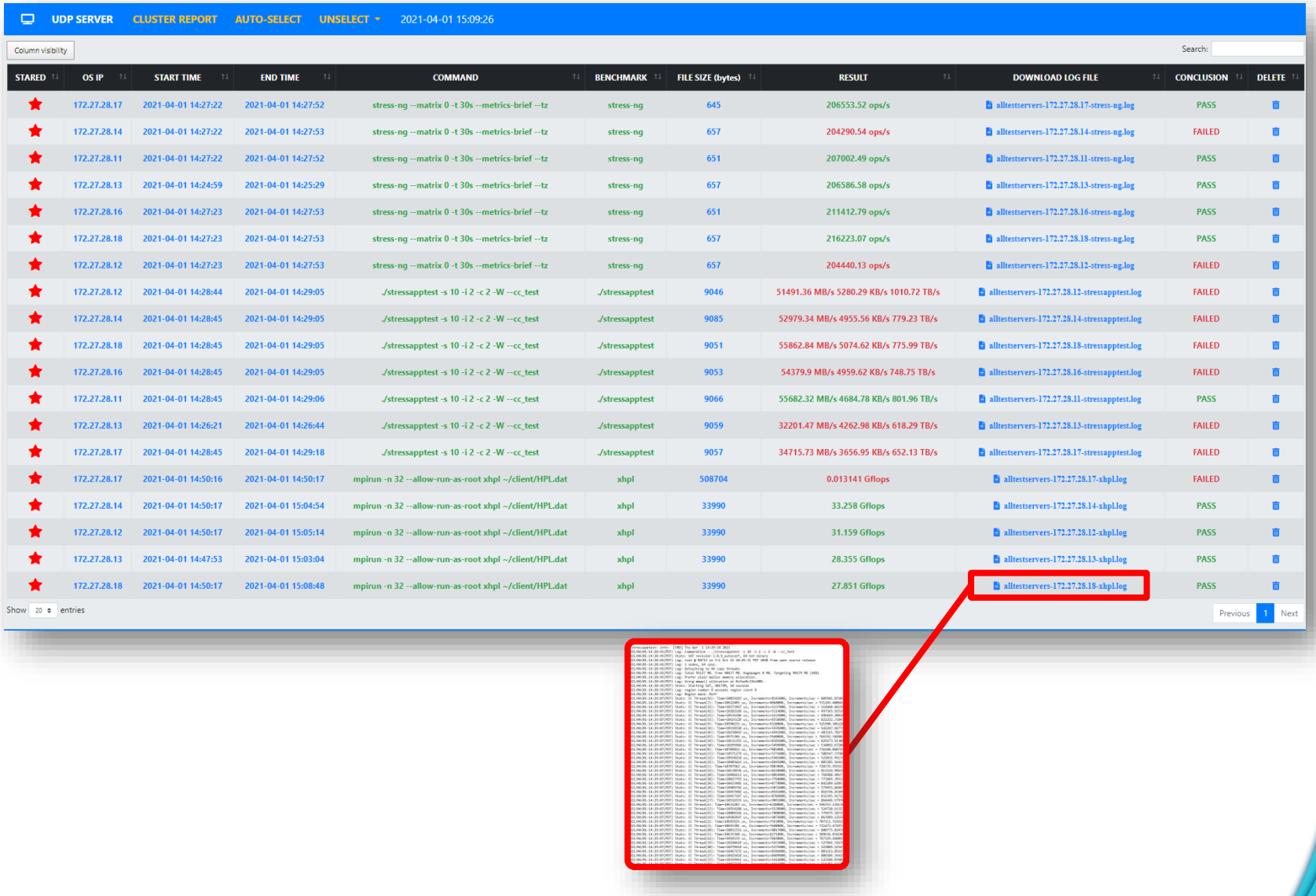
- Running benchmarks for multiple nodes remotely.
- Initialize the nodes' clients in needed.
- Check connection between LCM server and nodes.
- Each benchmark need a config file and an input file (optional).
- Currently support 5 kinds of benchmarks, more is coming.



New: Benchmark Results Display

About this page:

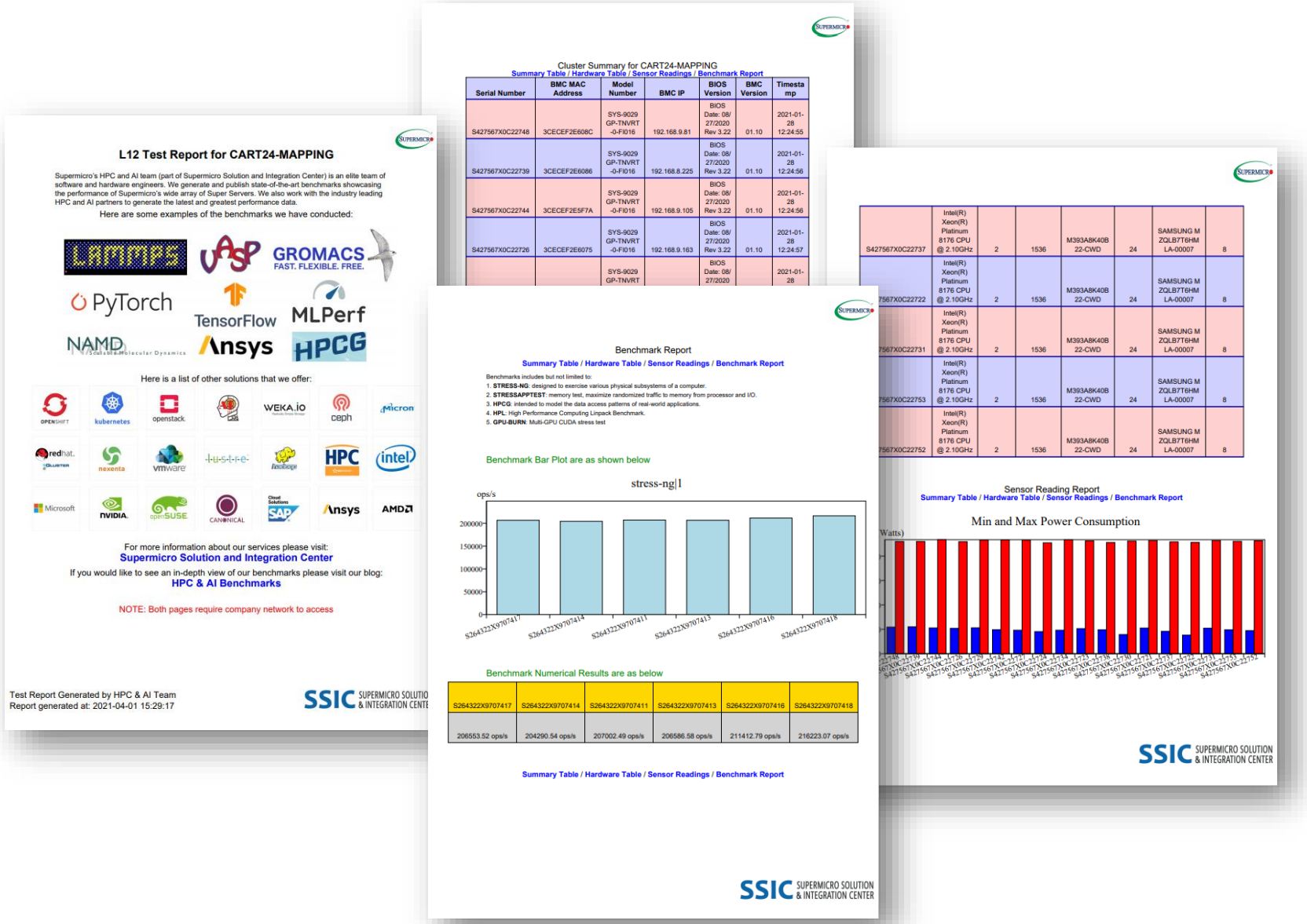
- Benchmark results are stored in database.
- Automatically fetch key results from output file.
- Automatically verify the performance.
- Start and end time of the benchmark.
- Benchmark type and runtime command.
- Cluster report generator.



New: Cluster Report

About this report:

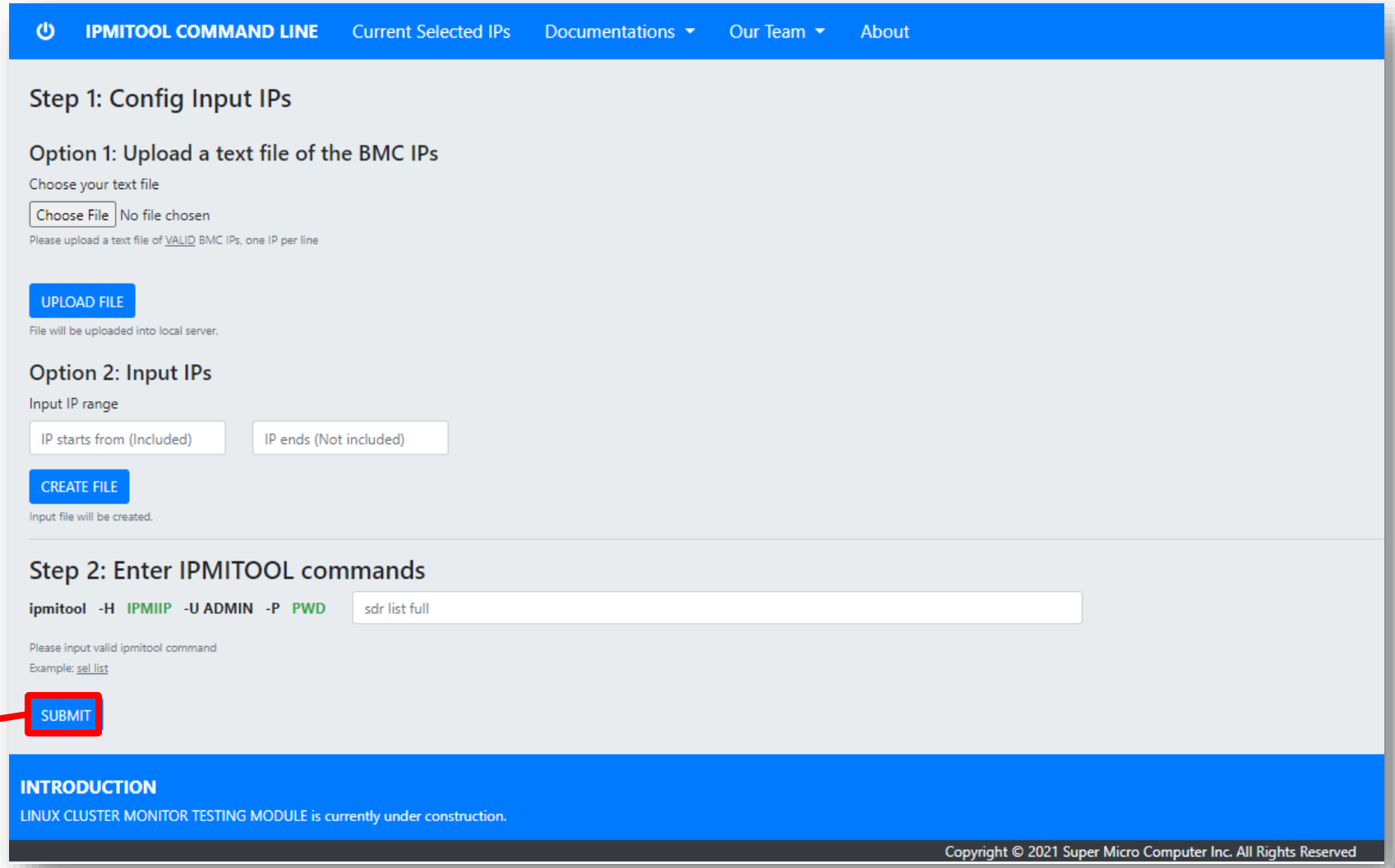
- Report has 4 sections:
  1. Introduction
  2. Cluster summary
  3. Hardware information
  4. Sensor readings
  5. Benchmark report
- Report is based on one cluster.
- Benchmark report part is based on selected benchmark results.
- More contents are under development.



New: IPMI Command Line Tool

About this page:

- Run IPMI command on multiple nodes remotely.
- Select desirable nodes by IPMI IP.
- Support pipe.
- Both standard and error outputs will be displayed.



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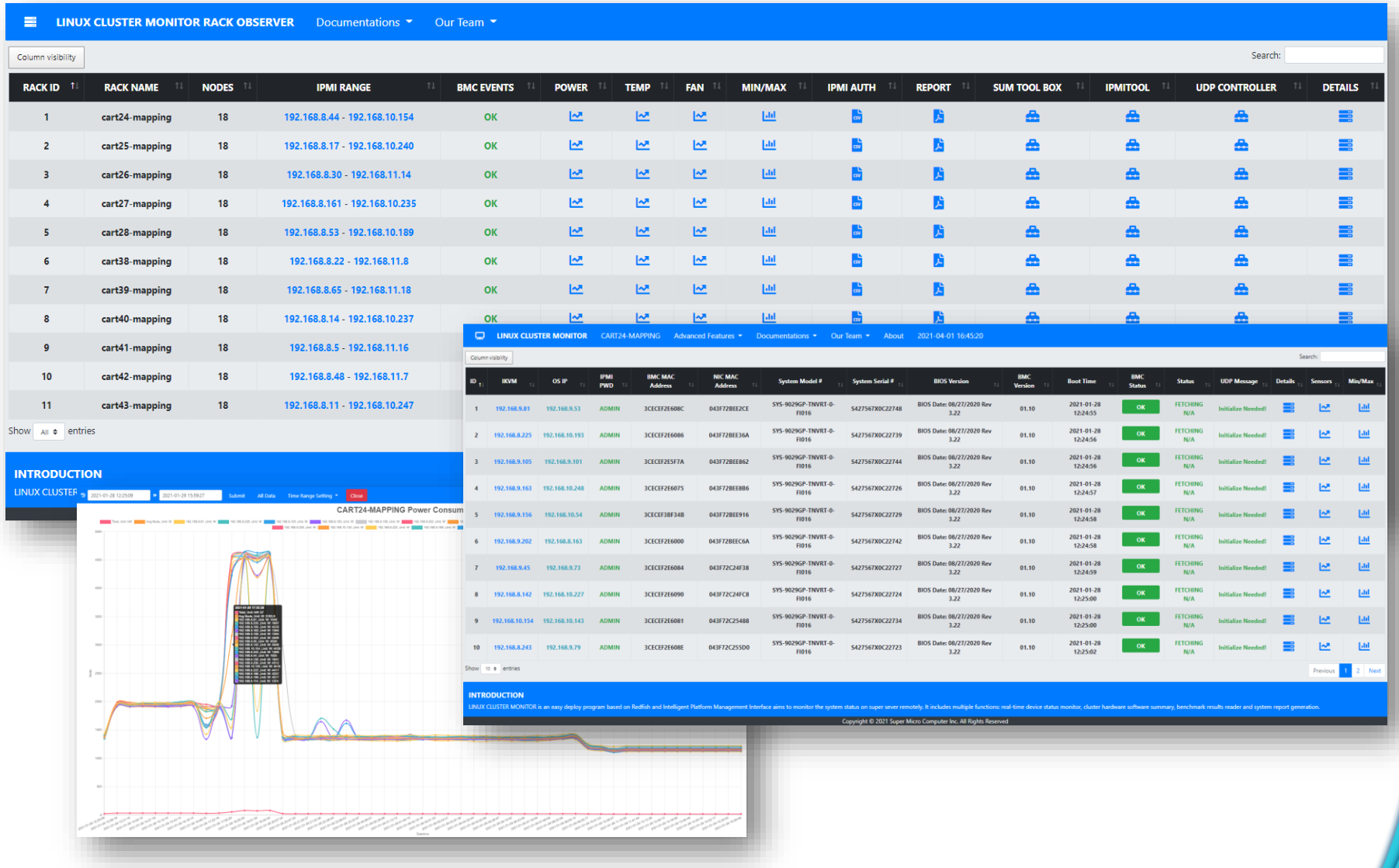
L12 Test Archive: Facebook Project

About this page:

- Archive L12 test for 2021 Q1.
- All the archive are about Facebook projects.
- Updated when finished L12 testing.
- All the information stored in database are accessible.
- Most advanced features are not able to use on archive, because all the machines are no longer alive.



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Quick Deployment Steps

1. **Install Docker, Docker-compose and ncat:**

   I. Docker: https://docs.docker.com/engine/install/centos/

   II. Docker-compose: https://docs.docker.com/compose/install/

   III. Ncat: $ yum install nmap-ncat.x86_64

   IV. Build necessary images, for the source code please visit our git server:

   http://172.27.21.100:3000/ChenyangL/LinuxClusterMonitor

2. **Bash shell script for deployment:**

   http://172.27.21.100:3000/ChenyangL/LinuxClusterMonitor

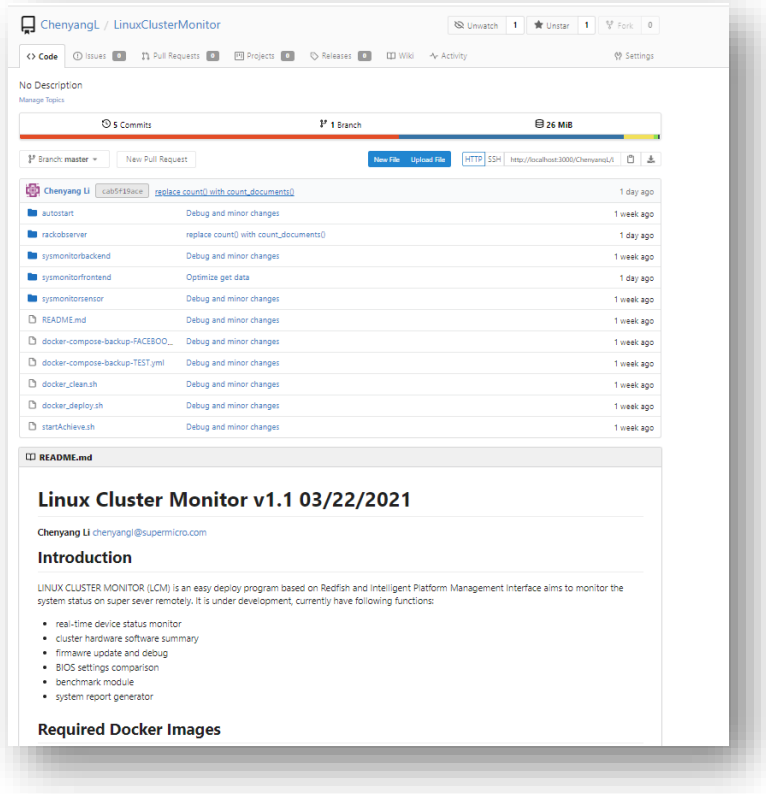
3. **Create input files and start deployment:**

   I. Create a folder for input files.

   II. Copy ".csv" files into folders.

   III. Create an "auto.env" file, visit our git server for more details.

   IV. Run: $ ./docker_deploy.sh FOLDERNAME



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