



White Star[®]
s o f t w a r e

Interesting Insights from ~~5000~~ 8500 Databases Worth of Telemetry Data

Paul Koufalis, White Star Software
pk@wss.com

Paul Koufalis

President

OpenEdge DBA since 1994



Disclaimer

- ProTop is a commercial software package for monitoring OpenEdge environments
- Please see me afterwards if you would like to learn more
 - Or email pk@wss.com

Agenda

- Who is White Star Software?
- What is ProTop Monitoring and Alerting?
- High Level Statistics
- Database Statistics
- Disk IO
- CPU Oddities

Who is White Star Software?

Our Mission

We simplify the job of managing and monitoring the world's best OpenEdge applications.

Who is White Star Software?

...and why should you care?

- 100% OpenEdge for over 30 years
- Global customer base, of all sizes, in all industries
- Some of the top OpenEdge DBAs in the world
 - **We have presented at every Progress conference or major PUG event around the world since 199x**

Why Work with White Star Software?

For 30+ years, our values have not changed

- We are ***the*** OpenEdge operations experts.
- We are fiercely independent and impartial.
- We do not nickel-and-dime our clients.
- We are teachers and mentors first.
- We plan. We document. We execute. We finish.

What is ProTop?

The #1 OpenEdge Monitoring and Alerting Tool

ProTop prevents downtime, and helps increase performance and lower costs for cloud, on-premise, and hybrid OpenEdge environments.

What is ProTop?

The #1 OpenEdge Monitoring and Alerting Tool

- The only commercially available monitoring tool written specifically for OpenEdge
- Over 1000 OpenEdge and related metrics for monitoring
- Insanely advanced alerting with even better noise reduction
- WSS' expertise at a fraction of the price

What ProTop is NOT:

- A management tool to start, stop or configure your OpenEdge components
 - **Use OpenEdge Management or OpenEdge Command Center**
- A managed database service
 - **Use Progress MDBA**

Why ProTop?

1. *Transition from a reactive break-fix mentality to a proactive, prevention-focused methodology*
2. *Increase visibility by providing teams with a single pane of glass view of their entire OpenEdge ecosystem*
3. *Benefit from years of historical data to highlight the effect of any changes (infrastructure, code, business, or other) from an OpenEdge perspective*

Who Uses ProTop?

Application partners, service providers and end users alike...



- DE: Consultingwerk, LIT Beratung, Beckelmann
- NL: NewCold Logistics, DBAWorx
- UK: Agro Merchants/Americold, Vertu Motors, Simplify
- IT: Centrolibri, WITS
- IE: DPD
- and many more...



Who Uses ProTop?

Compared to last year....

1100
~~535~~
Customer sites

1.75
~~1.5~~
Petabytes of data

8,500
~~4,500~~
Databases

350,000
~~325,000~~
Connected users

High Level Statistics

OpenEdge Version

- **Globally**
 - **OpenEdge 10: 4%**
 - **OpenEdge 11: 45%**
 - **OpenEdge 12: 51%**
- **Europe**
 - **OpenEdge 10: 2%**
 - **OpenEdge 11: 80%**
 - **OpenEdge 12: 18%**

High Level Statistics

Servers per Hypervisor type

- AWS: 2%
- Unknown: 5%
- None: 8%
- Azure: 11%
- AIX: 11%
- VMWare: 62%

High Level Statistics

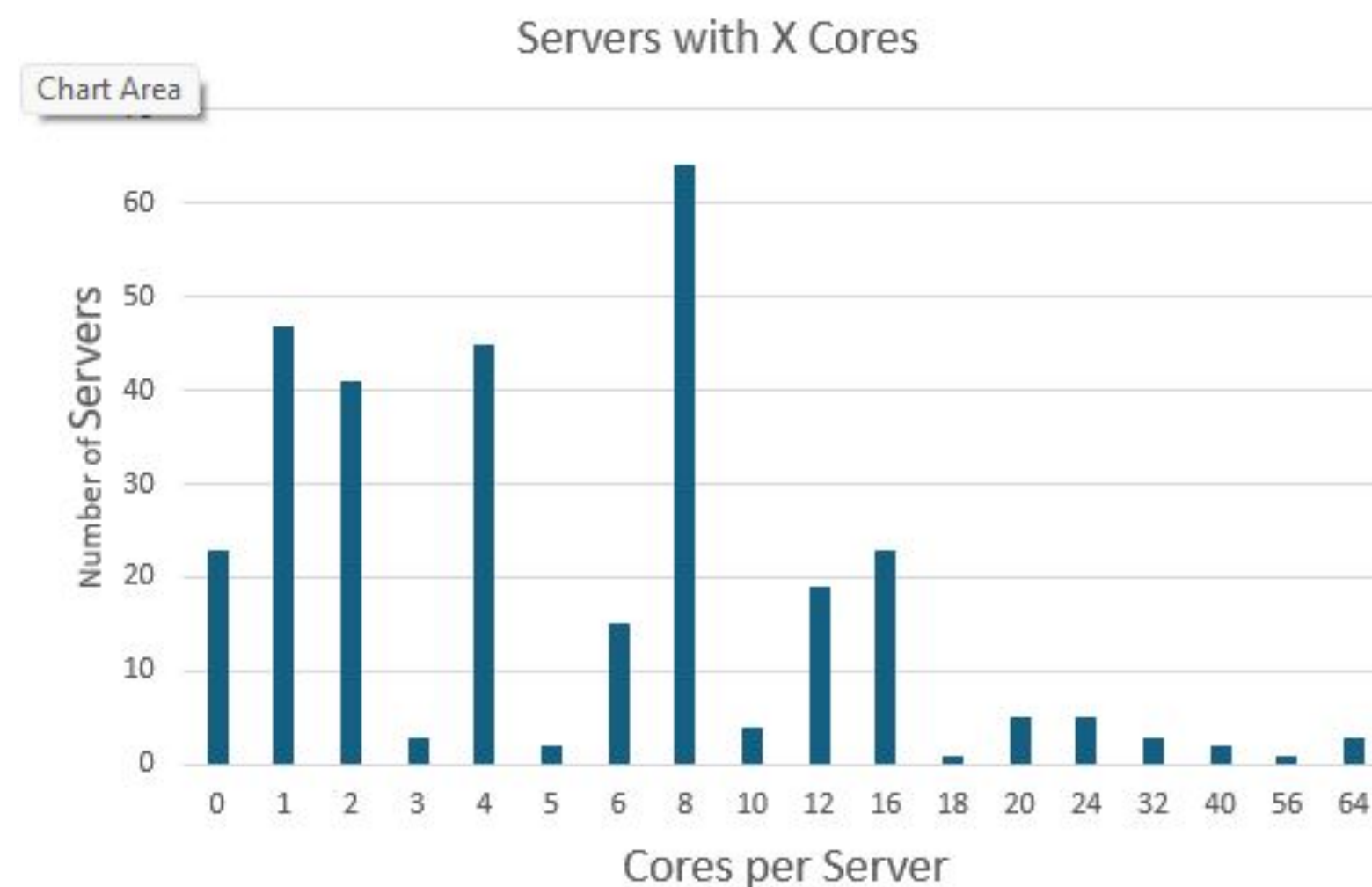
Operating Systems

- Debian: < 1%
- Amazon Linux: < 1%
- Oracle Linux: < 1%
- HPUX: < 1%
 - (migrating to RHEL)
- Centos: 5%
- Ubuntu: 5%
- Windows: 17%
- AIX: 17%
 - Migrating to Ubuntu/RHEL
- RHEL: 52%

High Level Statistics

Cores per server

- Half the sample had ≤ 4 cores



Database Statistics

Across 8500 databases

- Largest single table > 4 TB
- Largest database 20 TB
 - **NOT the one with the 4 TB table**
- Largest single customer site 75 TB
 - **X 2 actually, because of OE Replication**

Database Statistics

Continued...

- Most concurrent users ~15,000
 - Indirect through AppServer
- Most concurrent DB conx ~4000

- Largest –B 12,000,000 = 100 GB of RAM
- Largest –n 16,000

Database Statistics

Continued...

- Mean DB size 183 MB
 - Sample of 1000+ databases
- Median is only 23 MB
- Smallest is 2 MB 😊

- Longest uptime: 375 days
- Approx half of all DBs have been up for 2+ weeks

Disk IO Statistics

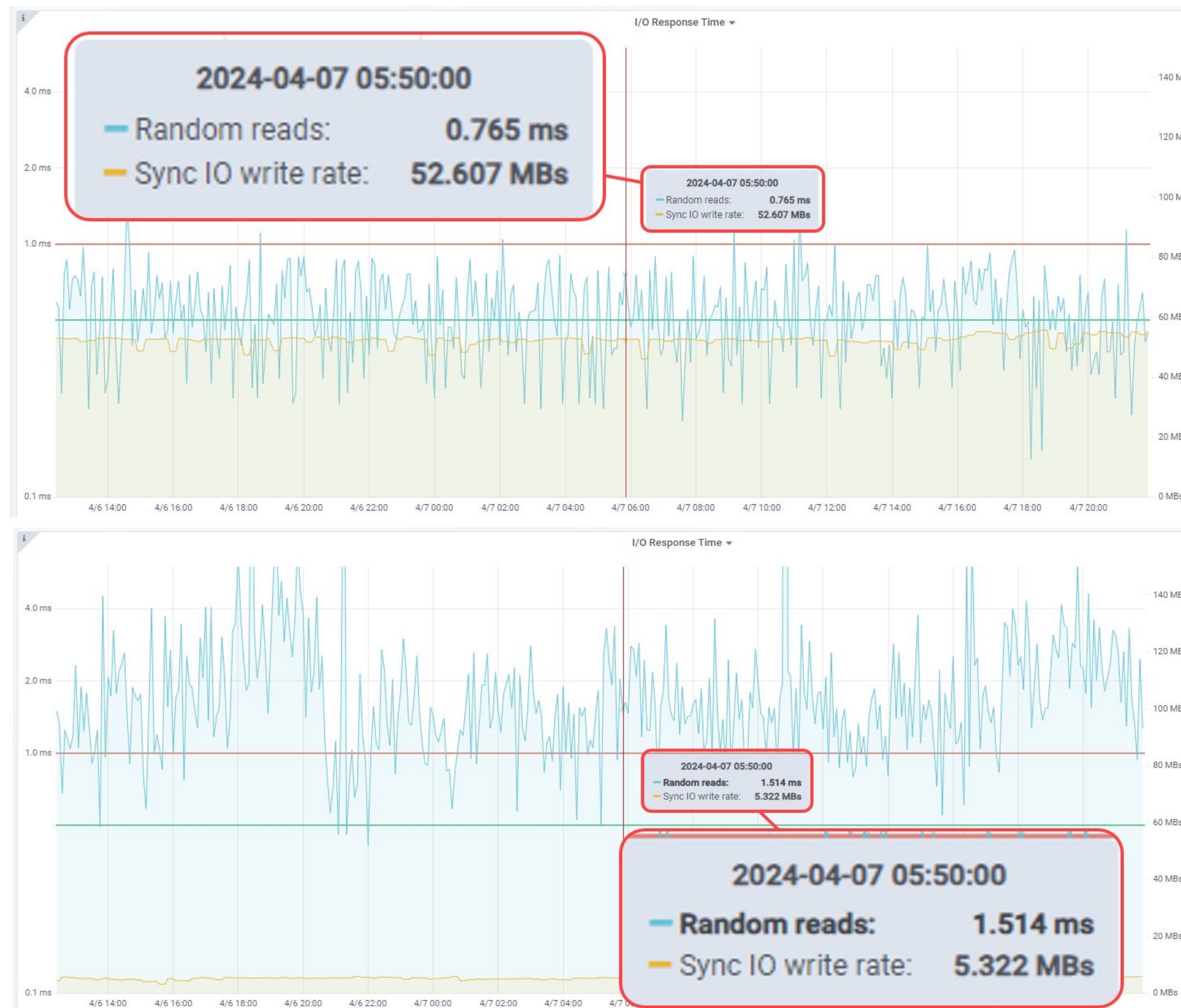
Random Reads and Unbuffered Writes

- How fast can you pull one block off disk?
 - **Most servers at around 1-2 ms = acceptable**
 - **Less than 1 ms is fast**
- How fast can you write unbuffered data to the AI/BI ?
 - **Median is 20+ MB/sec**
 - **10 MB/sec is the absolute lowest acceptable value...**
 - Typically a SAN
 - **AWS gp3 should give you 30+ MB/sec**

Disk IO Statistics

Azure Comparison

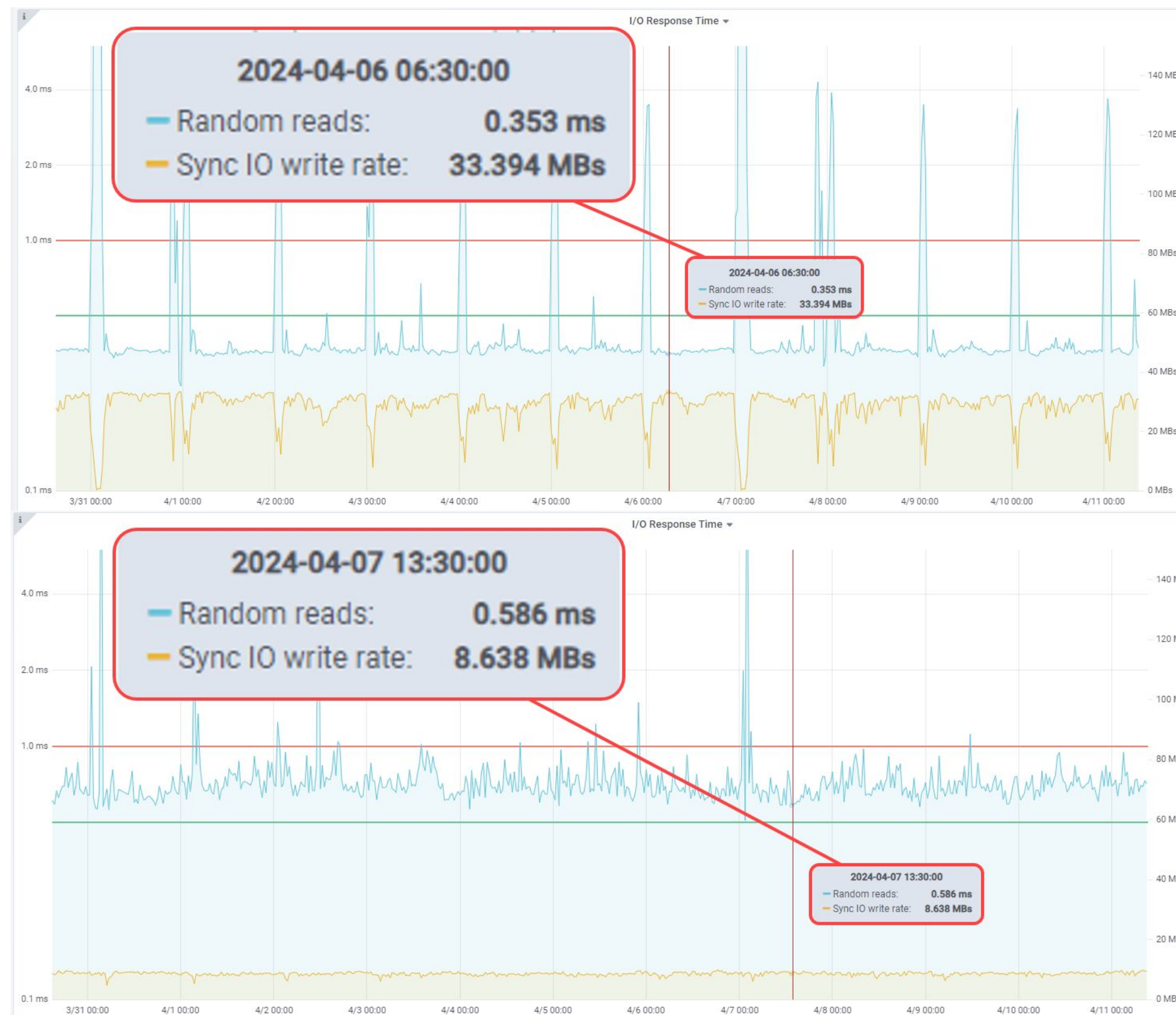
- Both systems in Azure cloud in same data centre
- Drastically different disk configuration!!



Disk IO Statistics

AWS Comparison

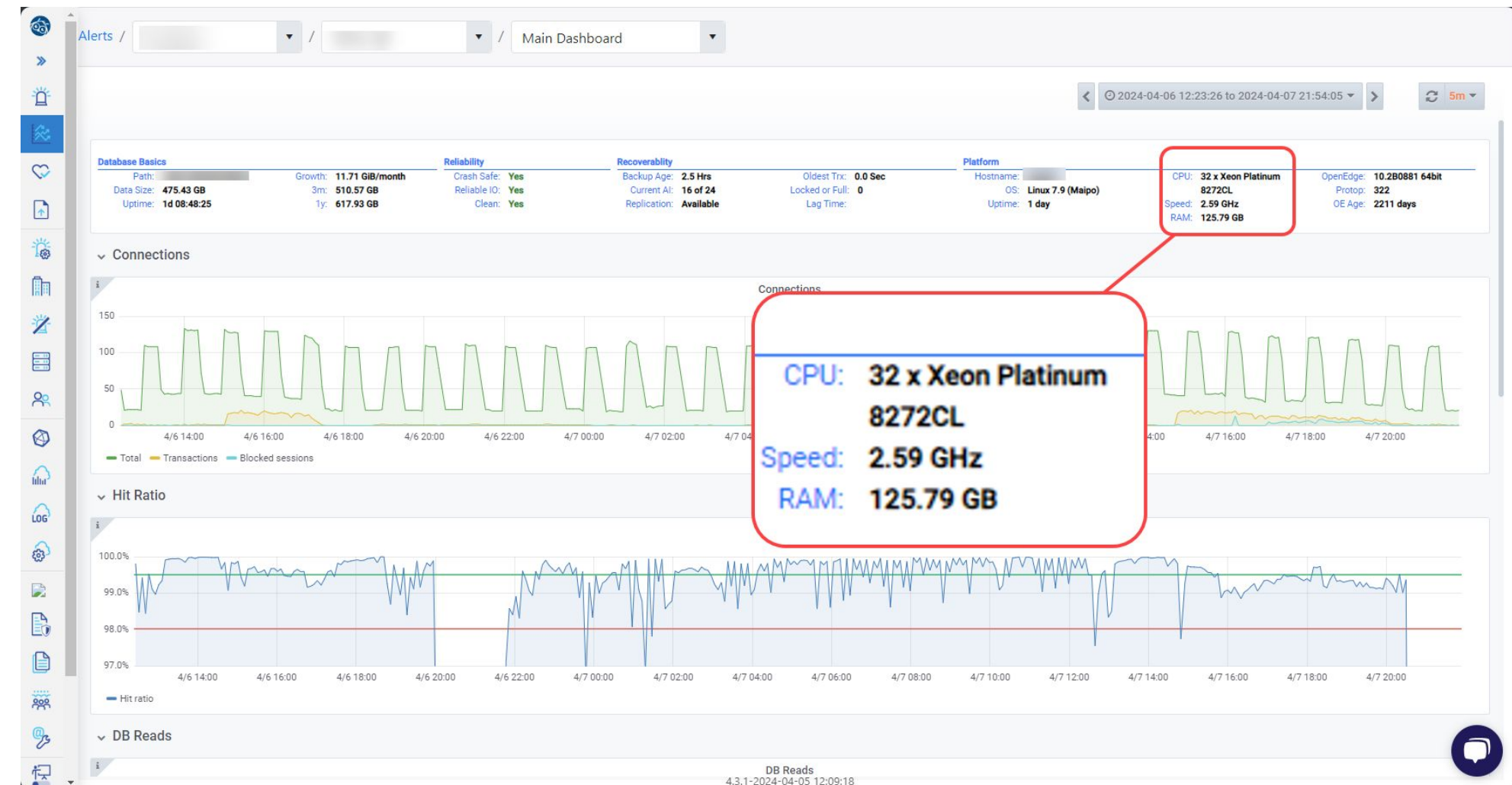
- Not the same availability zones
- Not the same disk configurations



CPU Oddities

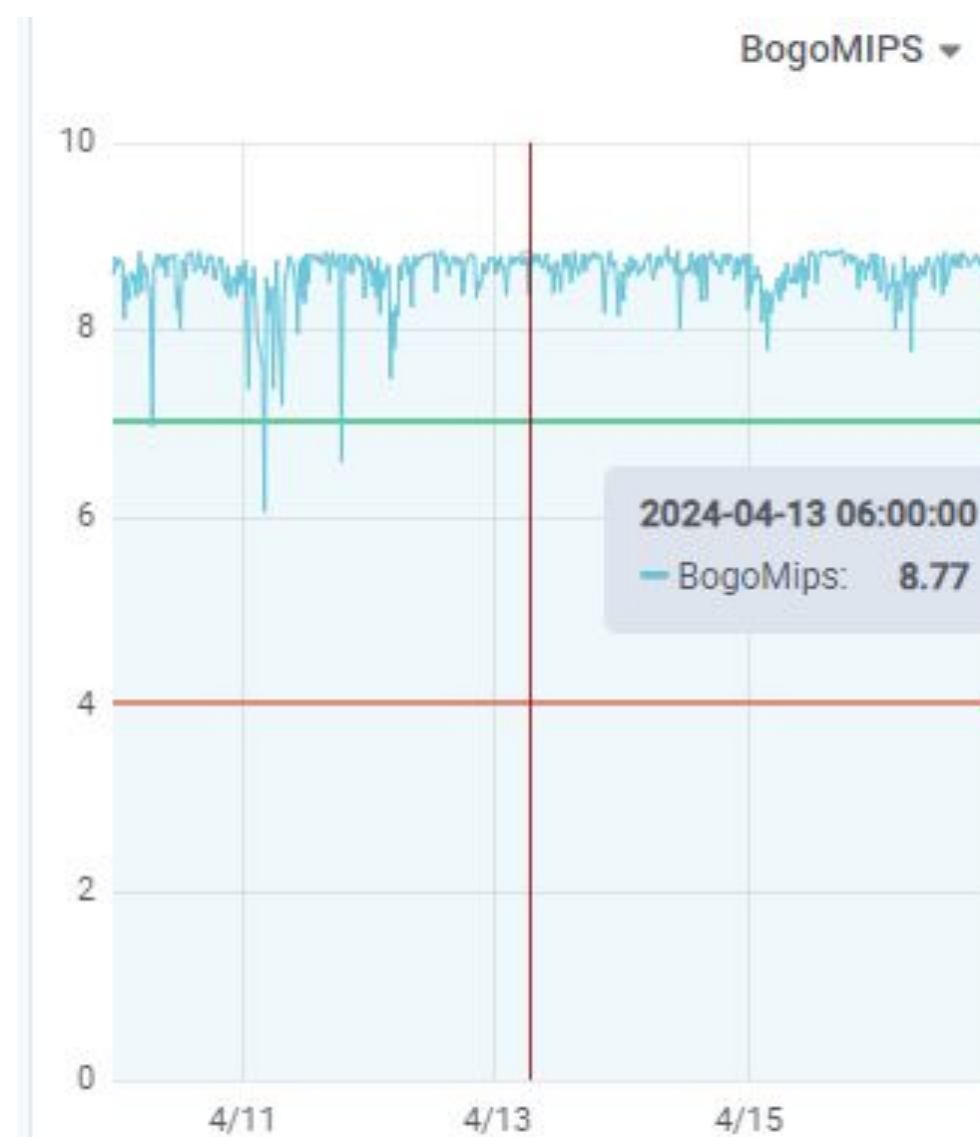
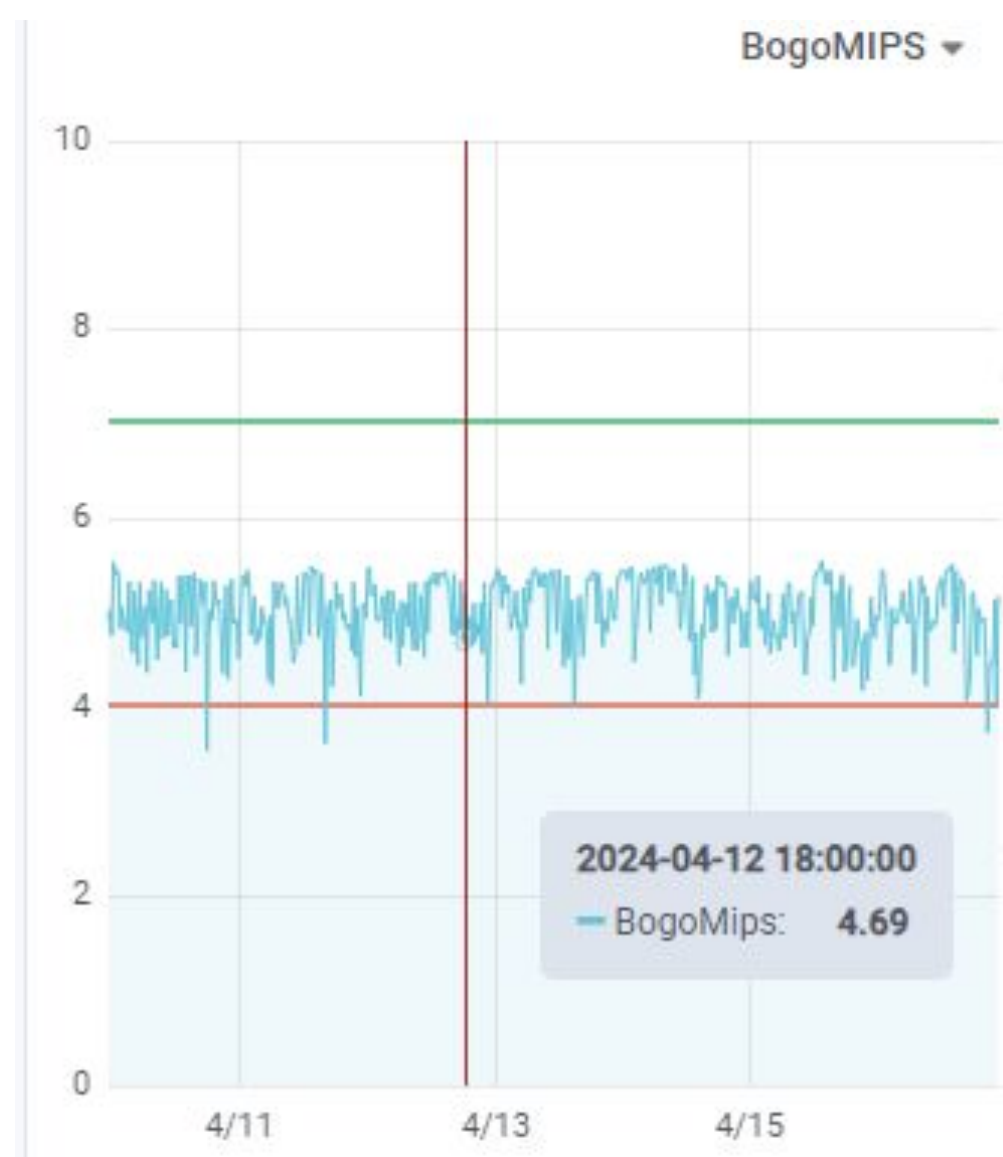
Is Azure Lying?

- Azure says this is one NUMA node
- Intel says only 26 cores per socket for this model
- Client is suffering
- Someone is lying



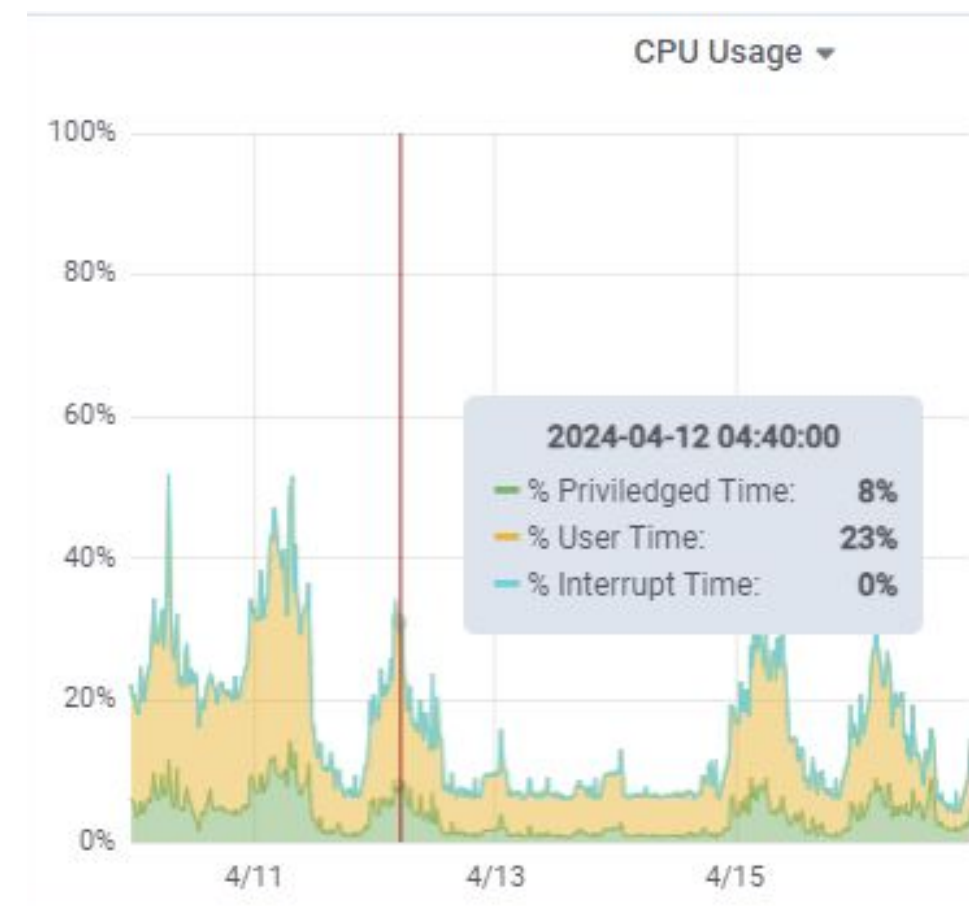
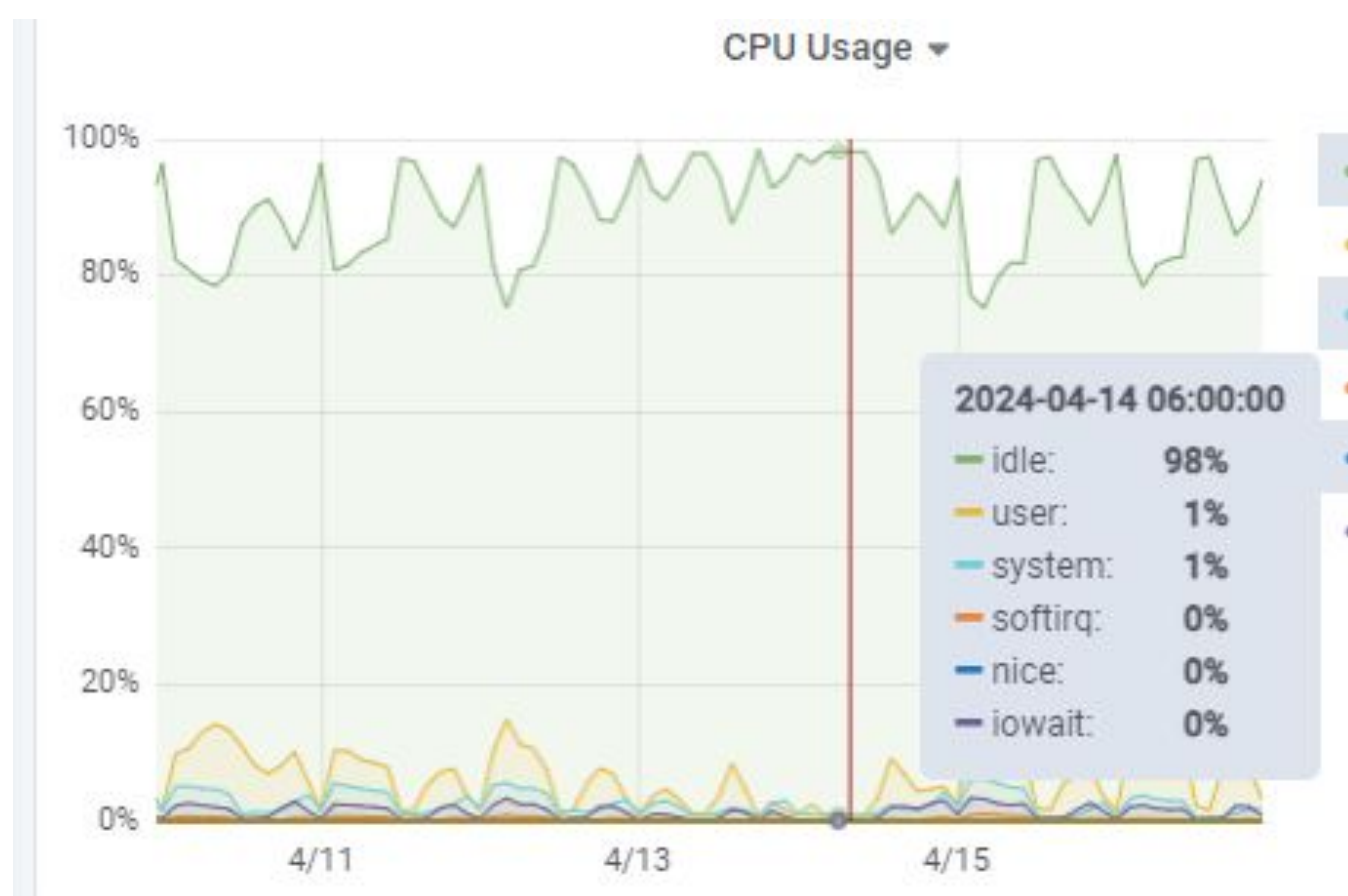
CPU Oddities

bogoMIPS – NUMA or Not ...

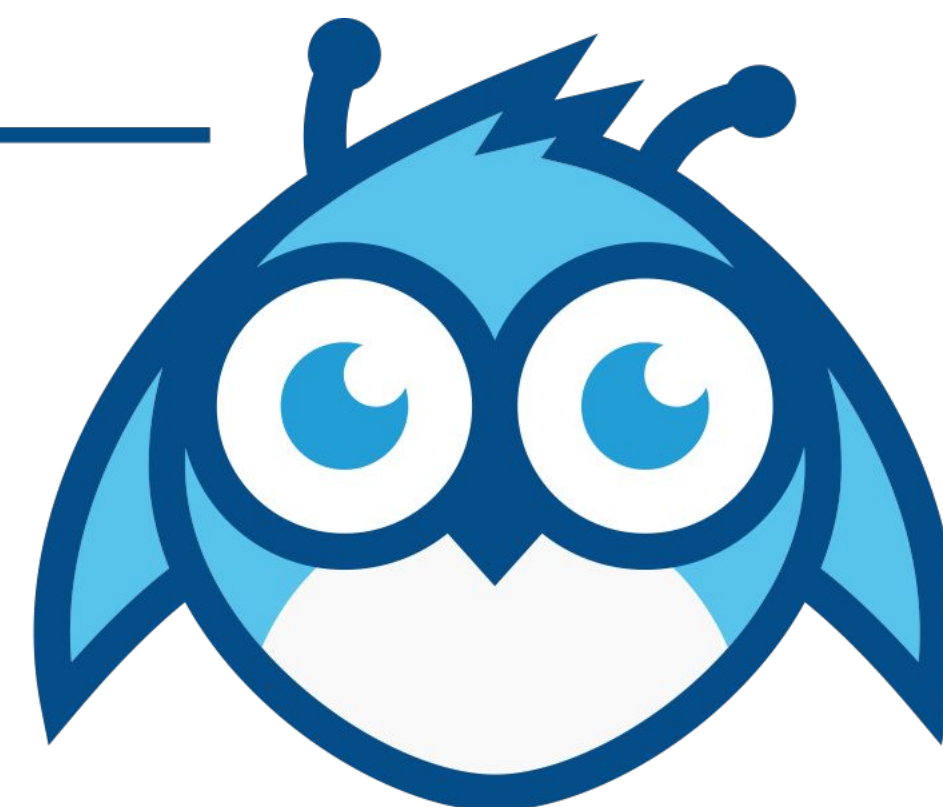


CPU Oddities

bogoMIPS – NUMA or Not ...



Any Questions?





Thank you!