



LEADERSHIP
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Orion User Update 2025

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HPC Storage & Archive



U.S. DEPARTMENT
of **ENERGY**

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FRONTIER



CY2025 Suboptimal Start Impacted By



HIGH PERFORMANCE TIER
USAGE AND MIS-STRIPED
DATA



HARDWARE FAILURES



FREQUENT AND LONG
FAILOVER EVENTS



LUSTRE "STUCK THREADS"
BUG

Solutions

High Performance Tier Usage and Mis-striped Data

- Aggressive Re-striping
- Manual Striping
- Polimor Purge Agent

Hardware Failures

- Tighter vendor engagement
- Changes to preemptive disk health scans

Frequent and Long Failover Events

- Pacemaker pool import change
- Drastic reduction in failover time

Lustre "Stuck Threads" Bug

- Outage to upgrade Lustre version
- Stacktrace(s) identified no longer present

Polimor

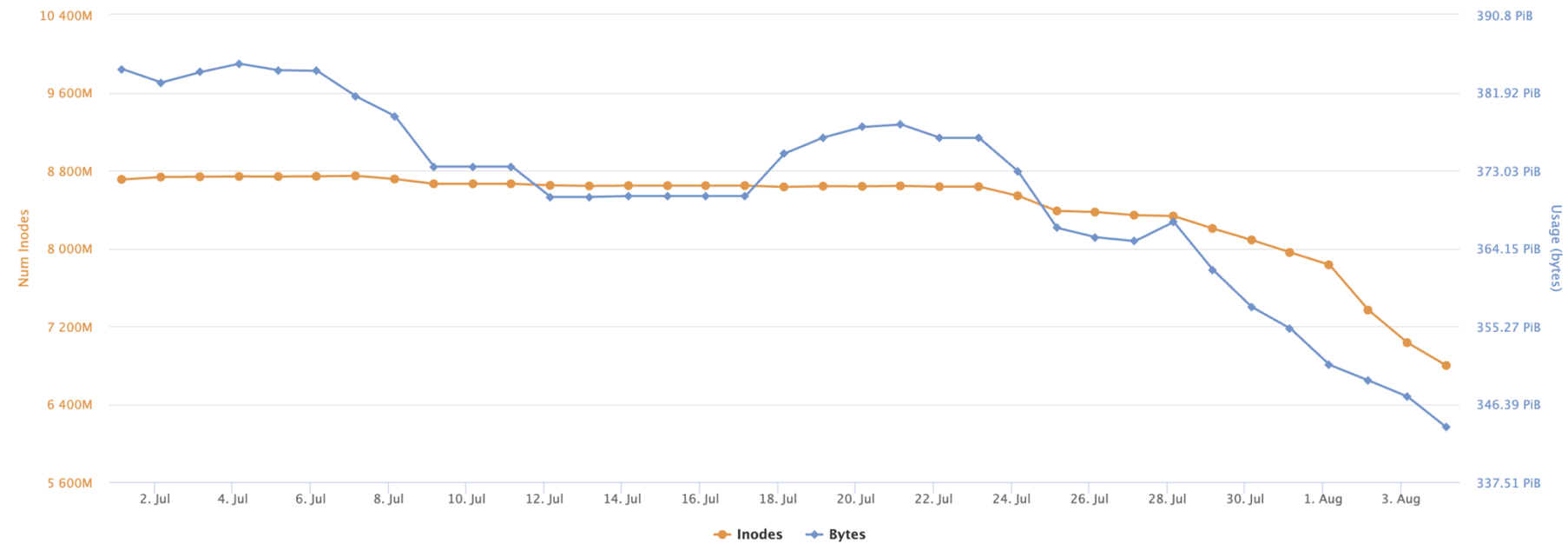
File system policy engine effort developed internally, providing utilities like scalable purge
Staff effort from Rick Mohr, Chris Brumgard, Anjus George and Ketan Maheshwari, among others

Polimor Purge Progress

Orion - Summary

	BYTES			INODES		
	Start Value	Net Change	End Value	Start Value	Net Change	End Value
TOTAL	384.58 PiB	-40.85 PiB	343.74 PiB	8,707,234,063	-1,911,628,545	6,795,605,518

Orion - Daily Totals



Highcharts.com

Future Improvements

Collaborating with UA to create a user dashboard for Orion that gives more insight into filesystem status

Experiment with setting project or code based custom PFLs to achieve better IO performance

Questions?

Feel free to reach out to frenzaej@ornl.gov





OAK RIDGE

National Laboratory

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