



Accelerating Research at QUT: How Advanced Data Platforms Are Powering Scientific Breakthroughs

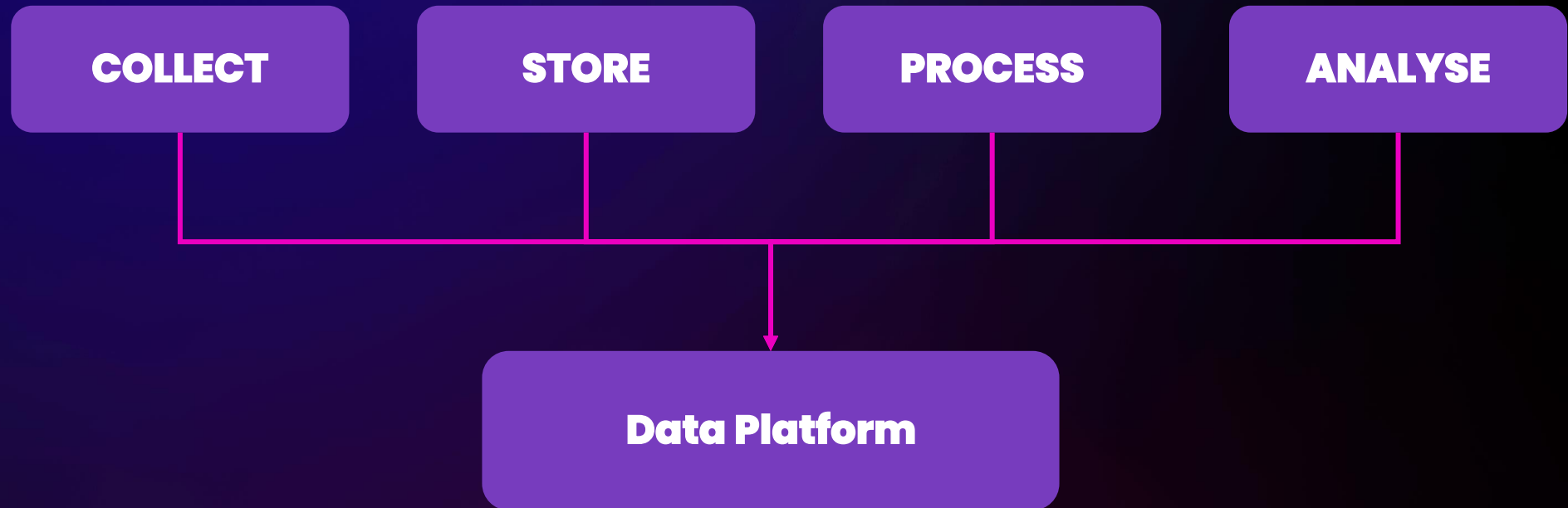
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**“The foundation of good
decision-making is
high-quality data”**

CSIRO. (n.d). *The role of data-driven decisions in science*. Retrieved 19 September 2024 from <https://www.csiro.au/en/research/technology-space/data?start=0&count=12>

What is a Data Platform?



When all data is unified into one location the power of AI and data-driven insights makes Data Platforms revolutionary advancement.



WEKA

QUT

QUT: What Was the Problem?



Storage Outages



Metadata bottlenecks



New analysis that is metadata heavy



Workloads on local NVMe in compute nodes

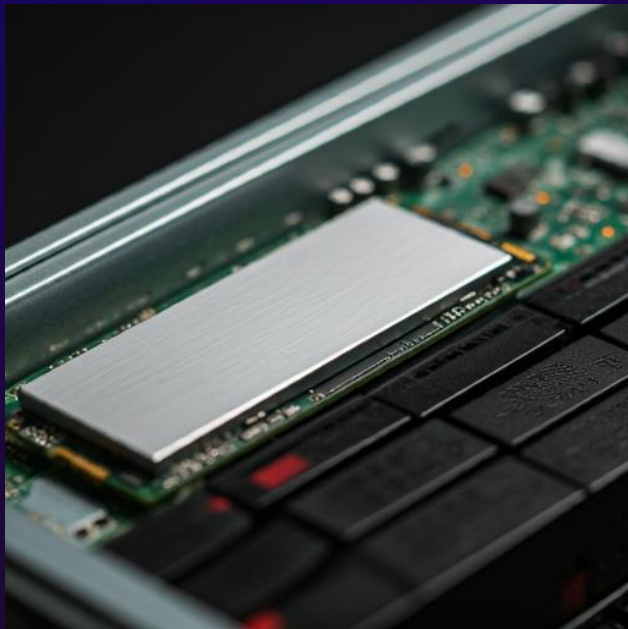
QUT: The Evolution



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QUT: The Evolution



Single NVMe

HPE 15.36TB NVMe Gen5

Reads: 13 GB/s

Writes: 7 GB/s

Reads: 197,931 IOPS

Writes: 359,542 IOPS

QUT: The Evolution



Cluster of 8 Servers

112 x 15.36TB NVMe Gen5

~1 PB shared storage

Reads: 225 GB/s*

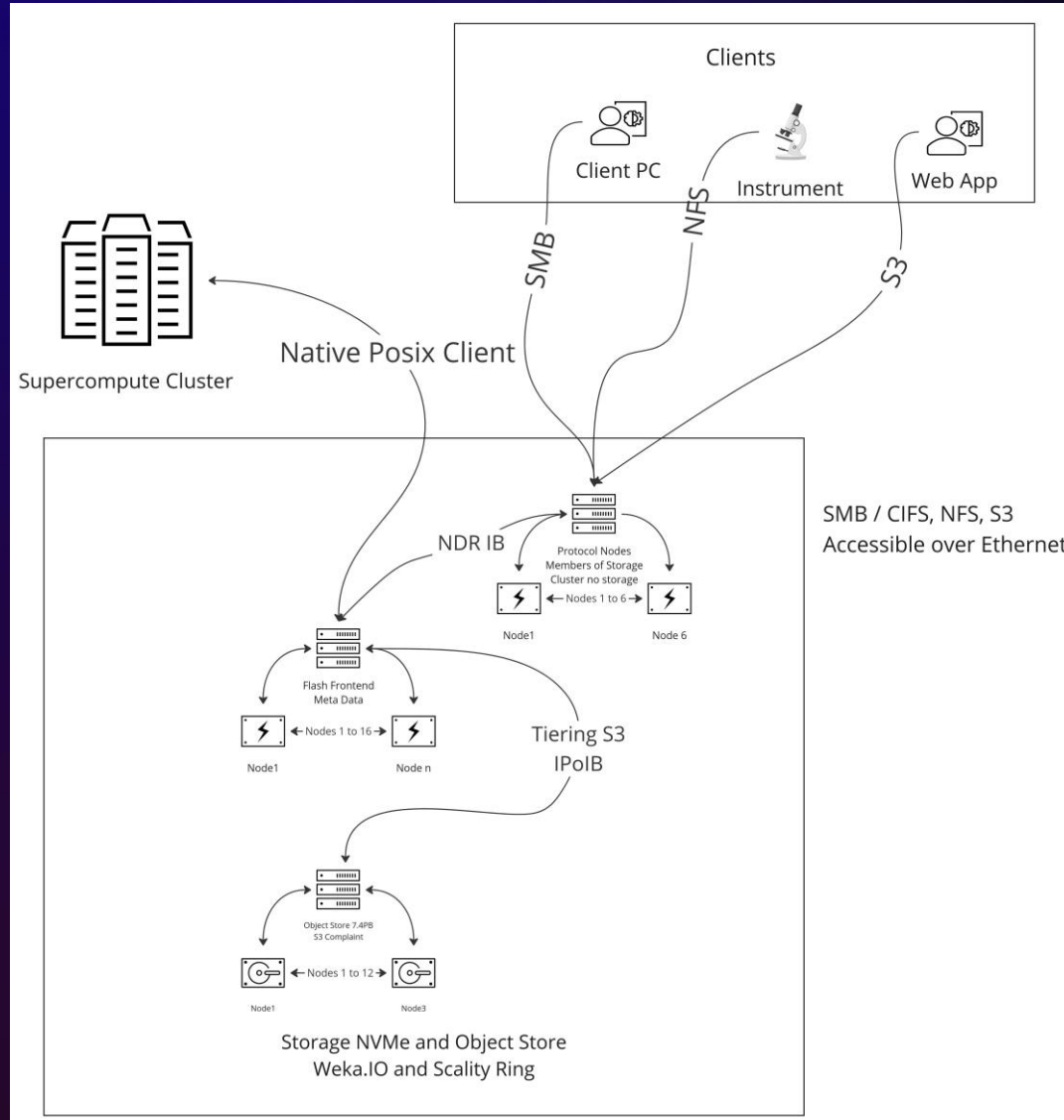
Writes: 173 GB/s*

Reads: 15 Million IOPS*

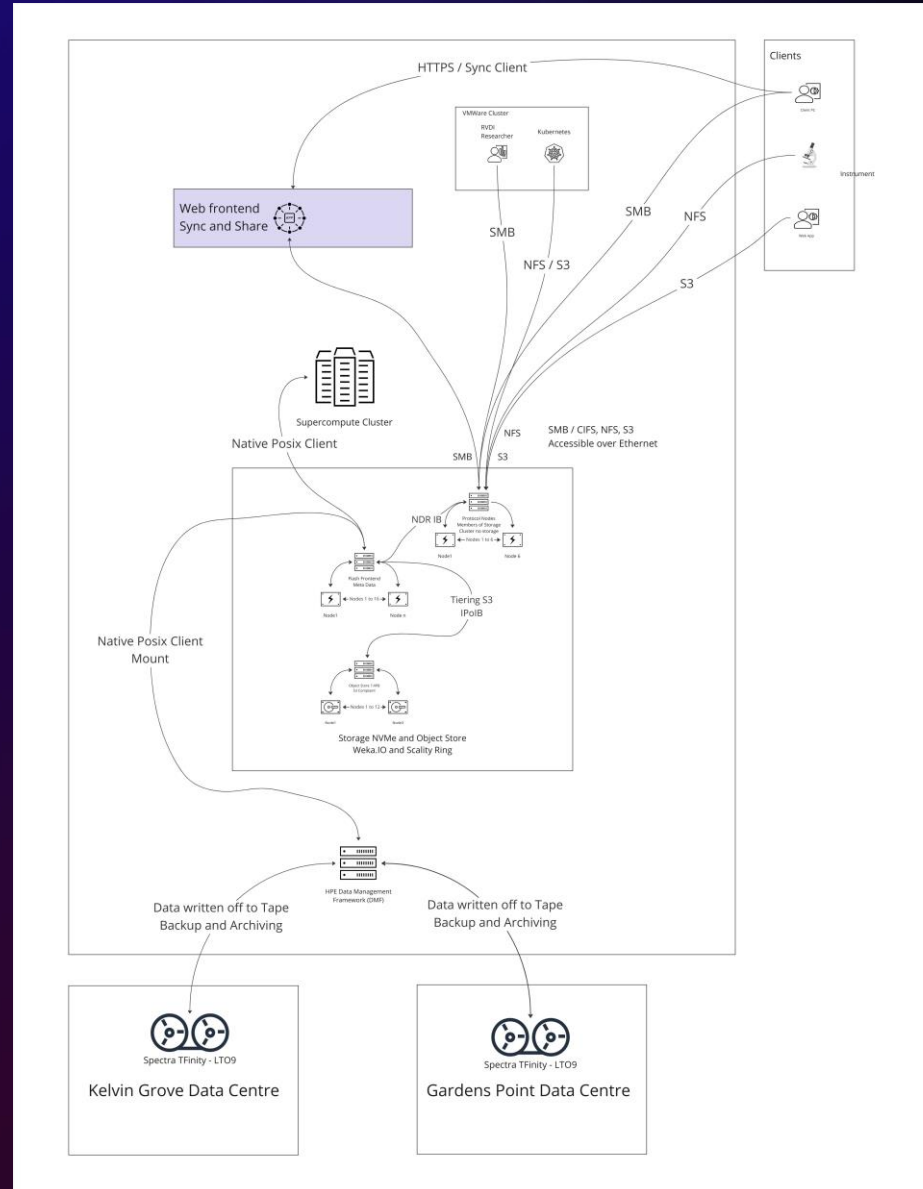
Writes: 5.6 Million IOPS*

Note: older clients maybe reducing these figures

QUT: The Solution



QUT: The Roadmap



Conclusion



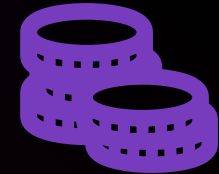
Data Consolidation



Scalability and
Performance



Cost Reductions



Reduction in IT
management spend

References

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