

Supporting LIGO Research @ Syracuse University

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Site Coordinators Committee

Supporting LIGO - Partnership

- Flexibility – willingness to work on short timelines and rapidly evolving challenges
- Collaboration – working directly with the researchers to understand the problem and talk through the technical possibilities
- Skills – designing / operating infrastructure at scale
- Moving “Central IT” to a helpful partner



Supporting LIGO - Models

- As a stakeholder tenant, LIGO operates within the larger university research environment
 - Significant contributor to design choices
- Entirely virtualized – dynamically allocated
 - 100% utilized, 100% of the time”
- Research data stored in production research cloud – computational work done in a heterogeneous private cloud with “no seatbelts”
- No boutiques – provide research computing resources as a commodity



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Supporting LIGO - Infrastructure

- Advancing technical boundaries
 - NSF supported dual 40 Gb core network capacity
 - Internet2 connectivity upgraded from 1Gb to 10Gb
 - Currently in the planning process for a 40Gb upgrade
 - Supporting work flows through the Open Science Grid
 - Storage performance, finding the right tier of performance vs capacity (near-line -> SSD)
- ~300 TB of storage, 6,000 cores, 12 TB of memory (allocated at peak – dynamically allocated)



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