

Research Cyberinfrastructure at UCSD

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A brief history ...

- 2008: Campus-wide needs assessment
- April, 2009: *Blueprint for the Digital University* issued
- April, 2010: *Cyberinfrastructure Planning and Operations Committee Report* issued
 - report accepted, business plan created
- January, 2011: RCI Oversight Committee formed
 - business plan accepted, oversight committee charged

RCI Oversight Committee charge

- Guide the development of an enhanced RCI
- Set policies and coordinate RCI elements
- Modify the CIPOC-proposed business plan as needed
- Continually seek opportunities for cost savings and recommendations for their implementation
- Provide accountability and document accomplishments on a regular basis

RCI elements

- High-Performance Computing
- Data Center Colocation
- Storage & Backups
- Data curation
- Networking and other services

High-performance computing

- Triton Resource: a cost-effective and accessible high-performance computing system primarily for UC San Diego and UC researchers
- The Triton Affiliates and Partners Program (TAPP): high performance cluster computing time at a rate of \$0.06/SU (1 SU = 1 service unit = 1 core-hour on Triton Cluster)

http://www.sdsc.edu/us/tapp/tapp_pricing.html

Data center colocation

- Standard rack provided with ISO-Base seismic protection, aisle containment, and 2x30A power distribution
- 10+ Gb networking fabric connectivity both throughout SDSC aggregation fabric and into CENIC
- 24/7 operations staff providing facility oversight and emergency "remote hands" hardware assistance

<http://rci.ucsd.edu/services/colocation.html>

Storage & backups

Data Oasis (available Summer 2011)

Storage Type	Cost per Terabyte-Year	Availability	Application Performance
Parallel File System	Free while running on an SDSC HPC machine. Medium-term parking space available by special arrangement with Project Storage purchased in an equal quantity.	99.5%	Up to 100 GB/s
Project Storage	<ul style="list-style-type: none"> • Standard Availability, Single-Site Durability - \$600 • High Availability, Multiple-Site Durability - \$900 	<ul style="list-style-type: none"> • 99.5% • 99.95% 	<ul style="list-style-type: none"> • Up to 1 GB/s • Up to 1 GB/s
Cloud Storage	<ul style="list-style-type: none"> • Single-Site Durability - \$390 • Triple Copy - \$650 	<ul style="list-style-type: none"> • 99.5% • 99.5% 	<ul style="list-style-type: none"> • Up to 100 MB/s • Up to 100 MB/s

Data curation

- **Data curation:** Managing data to ensure they are fit for contemporary use and available for discovery and reuse.
- **Archiving:** Ensuring that data are properly selected, appraised, stored, and made accessible. The logical and physical integrity—including security and authenticity—of the data are maintained.
- **Preservation:** Ensuring that items or collections remain accessible and viable in subsequent technology environments.

<http://rci.ucsd.edu/services/data-curation.html>

Data curation pilots

- Identify five researchers/research teams
- Two year duration
- Full data management lifecycle
- Mix of UCSD and UC3 resources

Networking and other services

- Web & Database Hosting
- Oracle Database Hosting
- 10GigE research network throughout campus

<http://rci.ucsd.edu/services/other-services.html>

Data management plans

- Resources and contacts available to UCSD researchers
- Examples from submitted proposals
- Guidance, tips and recommendations for DMP preparation

<http://rci.ucsd.edu/dmp/index.html>

<http://rci.ucsd.edu>

Resources:

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Data Management Plans:

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