



# LONI Update

## *ULS CIO Meeting*

Lonnie Leger, LONI / LSU



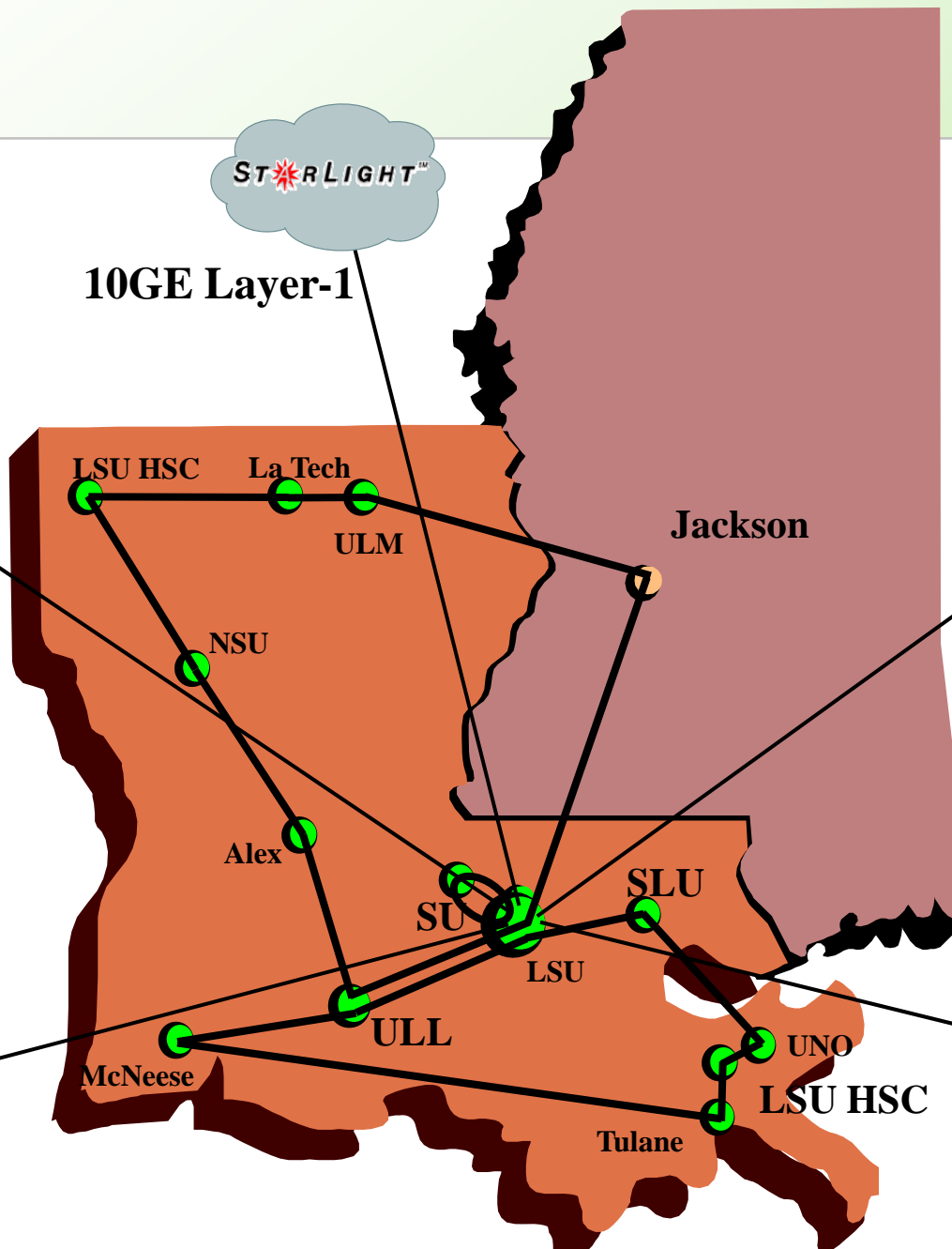
# How much does LONI cost?

- No cost to connect to the research networks of Internet2 and NLR
- No cost to connect to other Higher Education Institutions in Louisiana, Florida, Georgia, Alabama, Western Tennessee, Kentucky, North Carolina, South Carolina, and soon Mississippi and Texas
- No cost to connect to La State Gov't
- \$40 per Meg per month for commodity Internet
- All circuit cost(s) to connect to one of our closes LONI PoPs.



# What is LONI?

- Research Enablement
  - Research IT Enablement supports LSU researchers through the provision of high performance computing resources, computational cycles, a robust network and infrastructure, tools, as well as specialized support and training. RE includes both HPC (a joint effort of Information Technology Services and the Center for Computation & Technology) as well as the statewide Louisiana Optical Network Initiative (LONI).



10GE Layer-1



10GE Layer-3  
1GE Layer-2



Currently OC3 Layer-3  
3/07 planned 1GE

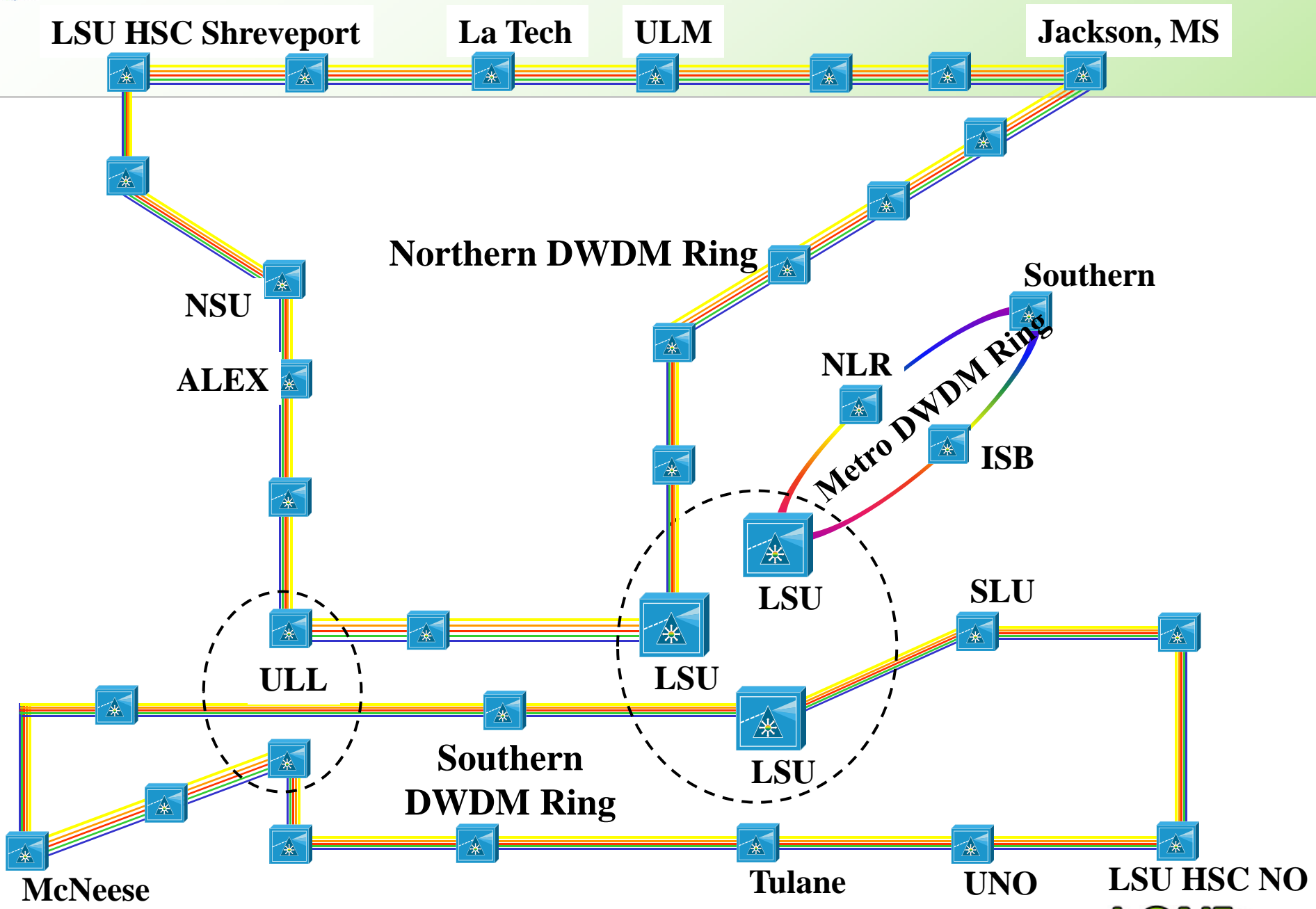


10GE Layer-3



10GE Layer-3







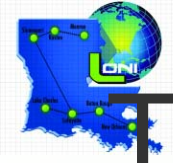
# 7 Signs that a CIO Is Out of Touch

- 1) Research is considered to be a waste of time.
- 2) Lack of critical thinking.
- 3) An inability to take constructive criticism and lack of respect for varied opinions.
- 4) Maintaining a positive image at all costs.
- 5) Lack of effective practice.
- 6) Blind faith in experts and top executives.
- 7) An aversion to introspection.



# In the next five years...

- Your data storage will more than double annually by 2012
- More than 90% of U.S. households with computers will possess broadband connection to the Internet



# Top 10 Technology Projects of 2007

- 1) Business Process Management/Improvement
- 2) Customer Relationship Management
- 3) Business Analytics/Business Intelligence
- 4) Desktop/Laptop Upgrades
- 5) Web Services
- 6) **“Disaster Planning/Recovery”**
- 7) Intrusion Detection and Prevention
- 8) Server Upgrades
- 9) Enterprise Systems Planning
- 10) Financial Reporting



# Your 2005-2009 Strategic Plans

- Grambling – Objective III.1: Increase the research funding levels by 20%.
- La Tech – Objective III.1: Increase number of faculty with externally funded IT grants by 50%.
- La Tech – Objective III.2: Increase the number of patents, licenses, business start-ups to advanced technologies by 50%.
- McNeese – Objective III.2: To support economic development in Southwest Louisiana by increasing technology transfer participation and jobs.



# Your 2005-2009 Strategic Plans

- Nicholls – Objective III.2: To increase the total dollar amount of federal, state, and local-private gifts, grants and contracts by 34%.
- Northwestern – Objective II.3: To increase the total number of online graduates 55%.
- Southeastern – Objective III.3: Increase the University's total sponsored research and programs funding by 5%.
- ULL – Objective III.1: Increase the number of patents registered and copyrights applied for by faculty by 40%.



# Your 2005-2009 Strategic Plans

- ULL – Objective III.2: Create two new information technology businesses or businesses relocations.
- ULL – Objective III.3: Collaborate with existing businesses to increase commercialization of new information technology by 66.7%.
- ULM – Strategy II.2.4: Develop a technology plan that assures modernity and efficiency within all facilities and services.



# Timeline

- Grambling State University waiting on account request
- Louisiana Tech University received their service on 5/10/07
- McNeese State University waiting on backbone fiber local loop
- Nicholls State University waiting on account request
- Northwestern State University waiting on backbone fiber local loop
- Southeastern Louisiana University waiting on backbone fiber local loop
- University of Louisiana at Lafayette received their service on 2/1/07
- University of Louisiana at Monroe waiting on backbone fiber local loop



# What can you do right now?

Request LONI Account by emailing me at  
[lonnie@lsu.edu](mailto:lonnie@lsu.edu)



# Then What?

- 1) Request LONI Service at [www.loni.org](http://www.loni.org) to initiate service inquiry for Metro Ethernet to your address
- 2) Determine the fiber availability already or possible to your address
- 3) Determine the conduit availability already or possible to your address
- 4) Approve Metro Ethernet and Commodity Internet Charges
- 5) Receive Installation date from Metro Ethernet provider
- 6) After Metro Ethernet turn-up contact LONI NOC at 225-578-8391 or [noc@lsu.edu](mailto:noc@lsu.edu) to schedule LONI service turn-up



# LONI HPC Systems

- Five IBM System p5 p575-IH Clusters
  - 14 nodes with 8-way IBM Power5's @ 1.9 GHz, 16 GB RAM, 146 GB HDD, 4x10/100/1000 Ethernet
  - AIX 5L v5.2 / v5.3
  - IBM Federation high-speed switch
  - Head and storage
- 851.2 GF theoretical peak; 4.256 TF total
- Currently deployed





# New LONI HPC Systems

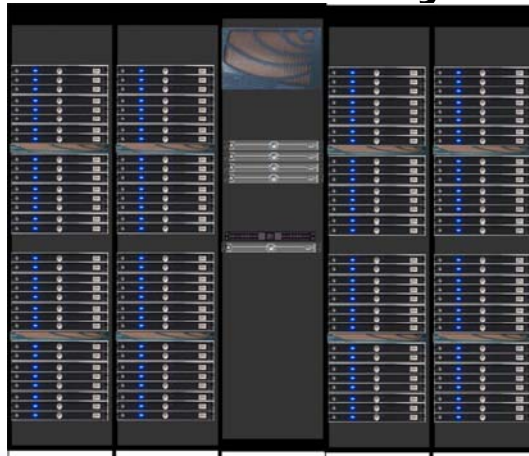
- Central Dell Linux Cluster
  - 680 nodes with dual socket Intel “Clovertown” Xeons (8 cores) @ 2.33 GHz, 8 GB RAM, 80 GB HD, Gb Ethernet
  - Red Hat Enterprise Linux (RHEL) v4
  - Cisco (Topspin) InfiniBand high-speed interconnect (4xIB), 50% blocking
- 50.7 TF theoretical peak; 5.44 TB RAM
- Deployment expected March 2007





# New LONI HPC Systems

- Six Remote Dell Linux Clusters
  - 132 nodes with dual socket Intel “Woodcrest” Xeons (4 cores) @ 2.33 Ghz,
  - 4 GB RAM, 80 GB HD, Gb Ethernet
  - Red Hat Enterprise Linux (RHEL v4)
  - Cisco (Topspin) InfiniBand high-speed interconnect (4xIB), non-blocking
- 4.92 TF theoretical peak; 528 GB RAM
- Deployment expected January 2007





# Storage

- Central site will have:
  - 225 TB raw, 192 TB usable from Data Direct Networks (DDN)
  - Will provide central `/home` storage as well as global `/scratch` space
  - Using Cluster File Systems' Lustre file system
- Remote sites will have:
  - 14.0 TB raw, 12 TB usable from DDN
  - Additional local `/scratch` storage per system



# Storage

- PetaShare – Dr. Tevfik Kosar's, et al. \$957,678 NSF grant (Award #957678) for CCT at LSU
  - “an innovative distributed data archival, analysis and visualization instrument for data intensive collaborative research. PetaShare will enable transparent handling of underlying data sharing, archival, and retrieval mechanisms; and will make data available to the scientists for analysis and visualization on demand.”
- ~40 TB plus ~500 TB archival



# p5 Utilization

System	Site	Commisioned	Jobs	Unique Users	% Utilization
bluedawg*	LaTech	20060201	2,057	29	24.1
ducky	Tulane	20060315	2,445	52	29.3
zeke	ULL	20060807	1,552	14	26.0
neptune	UNO	20060908	167	9	30.4
lacumba	SUBR	N/A	N/A	N/A	N/A
<b>Totals / Average:</b>			<b>6,221</b>	<b>132</b>	<b>27.45</b>

\* Bluedawg was re-installed 20060806 and job data before then was lost  
Data collected on 20061211 using purr



# Take Home

Get to know your LONI representative

Dr. Les Guice at La Tech

Dr. Steve Landry at ULL

Dr. Brad O'Hara at ULS



# References

- OTM Metro Ethernet → <http://www.doa.louisiana.gov/otm/catalog/metroethernet.htm#forms>
- LONI Account Request →
- LONI Service Request → [http://www.loni.org/noc/request\\_service.php](http://www.loni.org/noc/request_service.php)