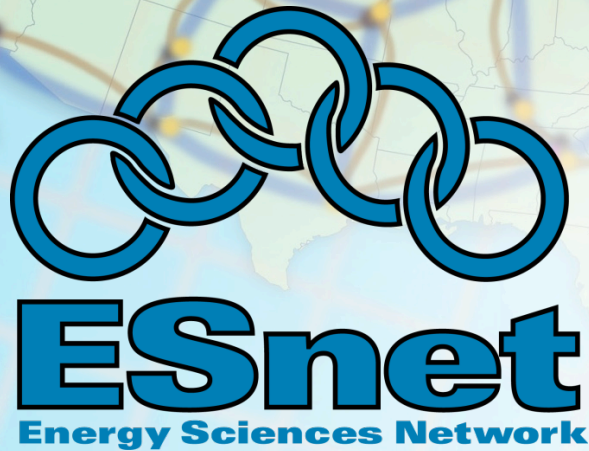


perfSONAR Update
Joint Techs
Feb 1, 2010



*Supporting Advanced Scientific Computing
Research • Basic Energy Sciences • Biological
and Environmental Research • Fusion Energy
Sciences • High Energy Physics • Nuclear Physics*

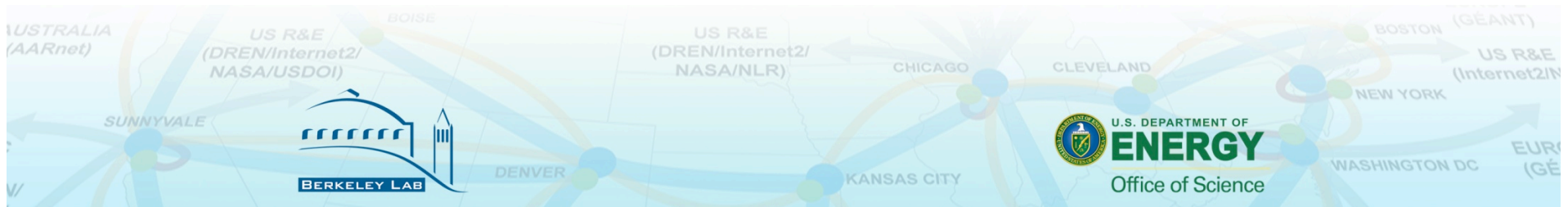
*Joe Metzger
Energy Sciences Network (ESnet)
Lawrence Berkeley National Laboratory*





Outline

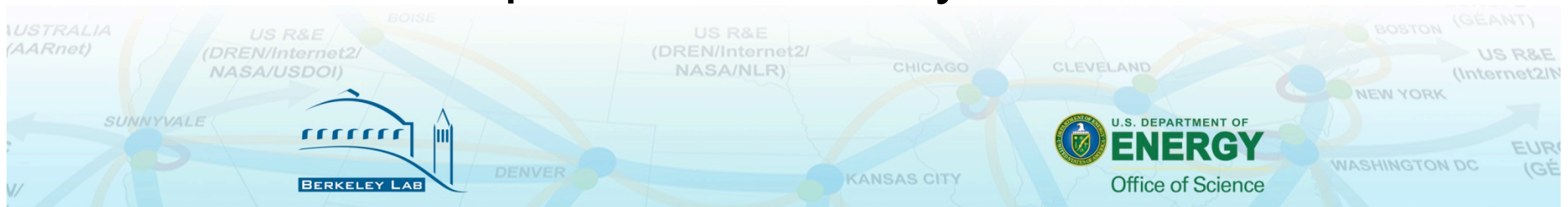
- Background
- What is perfSONAR
- Who is using it
- Recent Progress
- Futures

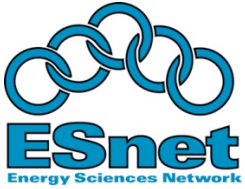




Background

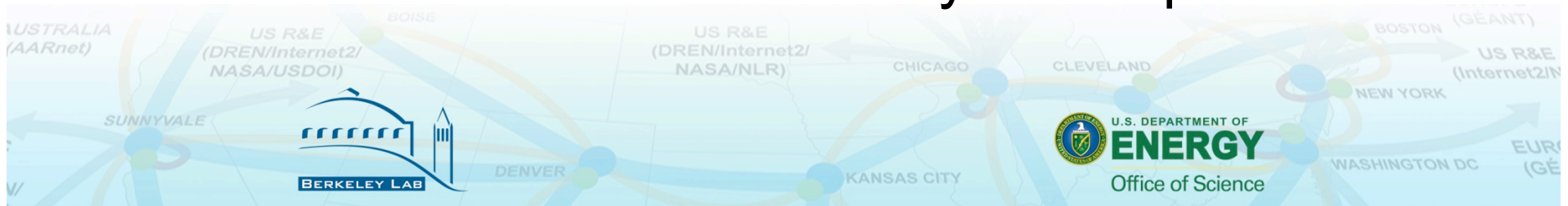
- Most of today's networks are big & complex, difficult to fully understand, constantly changing.
- The characteristics of the network traffic is changing which is putting different stresses on the infrastructure than we are used to.
- Users who are on the leading edge of these changes are discovering latent network problems.
- We need to be able to easily find and characterize problems so they can be fixed.

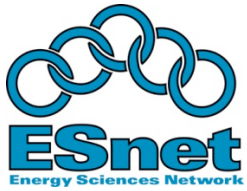




What is perfSONAR

- A collaboration
 - For developing, deploying & utilizing network measurement tools
- An architecture and protocols
 - For finding, using network measurement services
- Several implementations
 - PerfSONAR-PS – Primarily a US effort
 - PerfSONAR-MD – Primarily a European effort

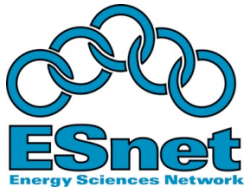




perfSONAR Deployments

- We have an installed base on 5 continents
 - North America
 - South America
 - Asia
 - Australia
 - Europe
- LHC Collaboration is our most organized user base
 - LHCOPN: Tier 0 & Tier 1 centers
 - US Atlas: Tier 1 & Tier 2 centers

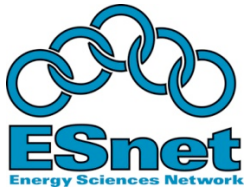




Recent Progress

- Mostly behind-the-scenes development
 - New software releases focused on increasing usability & stability
 - perfSONAR-PS this month (targeted for US Atlas Tier3)
 - perfSONAR-MDM in April
 - Protocol & documentation progress
- Filling out LHC deployments
 - All the Tier1 centers globally are up
 - Working on last couple US Atlas Tier2 centers
- Network Researchers are starting to use perfSONAR services & data.

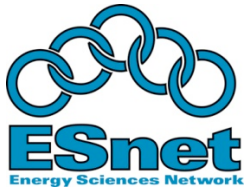




Near-Term Plans (Summer)

- perfSONAR-PS release
 - Migrating from Knoppix to Fedora base
 - Nagios based alarming
 - More analysis GUIs
 - Additional measurement support
 - Circuit Monitoring
 - Traceroute
 - Improved API's and documentation
- perfSONAR-MDM Release
 - Authorization support
- NSF PerfSONAR Workshop



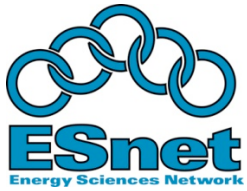


Longer term goals

- Software Development
 - AAA
 - Support for additional metrics
 - Additional usability enhancements
 - Protocol enhancements
- Operations
 - Using the measurement infrastructure to improve the performance and reliability of our networks.

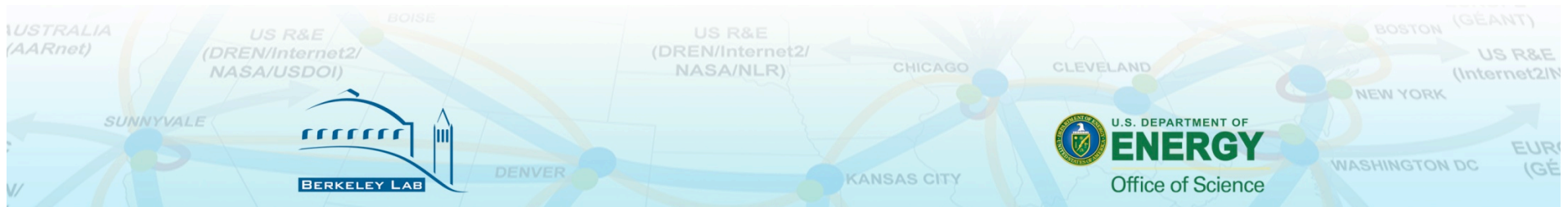
- More support for network research





Current Challenges

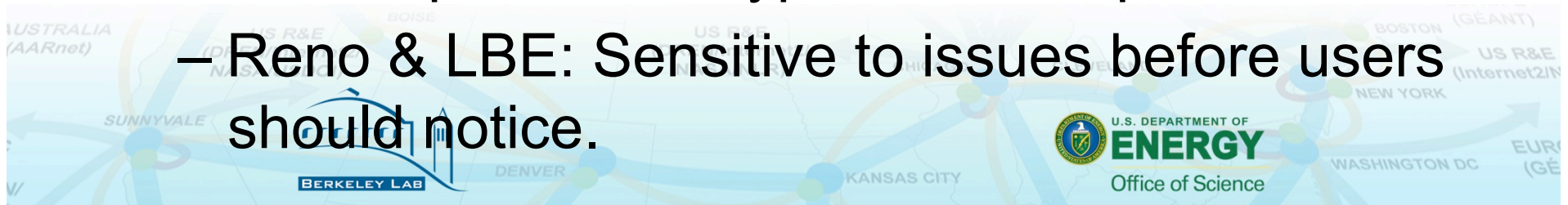
- We have been very successful getting PS deployed
- Open source software collaboration vs managed service
- Automated analysis of measurement data

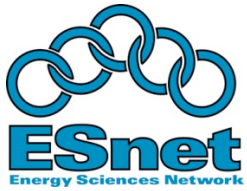




Example Analysis Challenge

- How do we identify ‘interesting’ events in the measurement results?
 - Interests vary
 - It is difficult to find the underlying causes of events
- How should bandwidth tests be configured?
 - 5-10 Gbps: Demonstrates what is possible.
 - 200 Mbps: Mimics typical user experience.
 - Reno & LBE: Sensitive to issues before users should notice.





Shameless Plugs

- NSF perfSONAR Workshop this summer
 - BOF to discuss it in this room around 3:00 PM today
- ESCC perfSONAR BOF
 - Wednesday Evening
- Web Sites
 - www.perfsonar.net
 - Psp.s.perfsonar.net
 - Fasterdata.es.net

