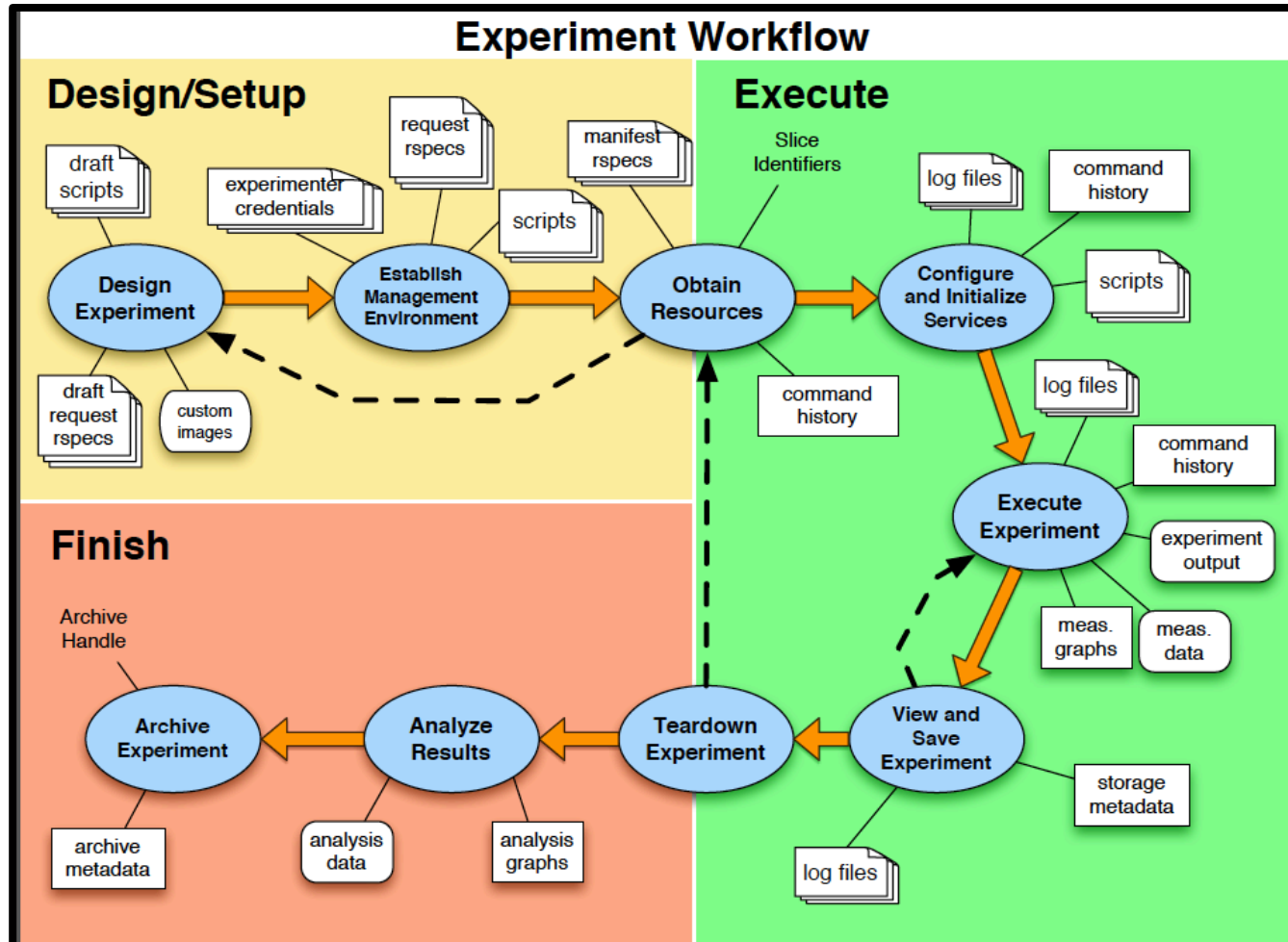


# Monitoring Experiments vs Testbeds

Jim Griffioen,  
Laboratory for Advanced Networking  
University of Kentucky  
Lexington, KY

# Lifecycle of a GENI Experiment



<http://groups.geni.net/geni/wiki/ExperimentLifecycle>

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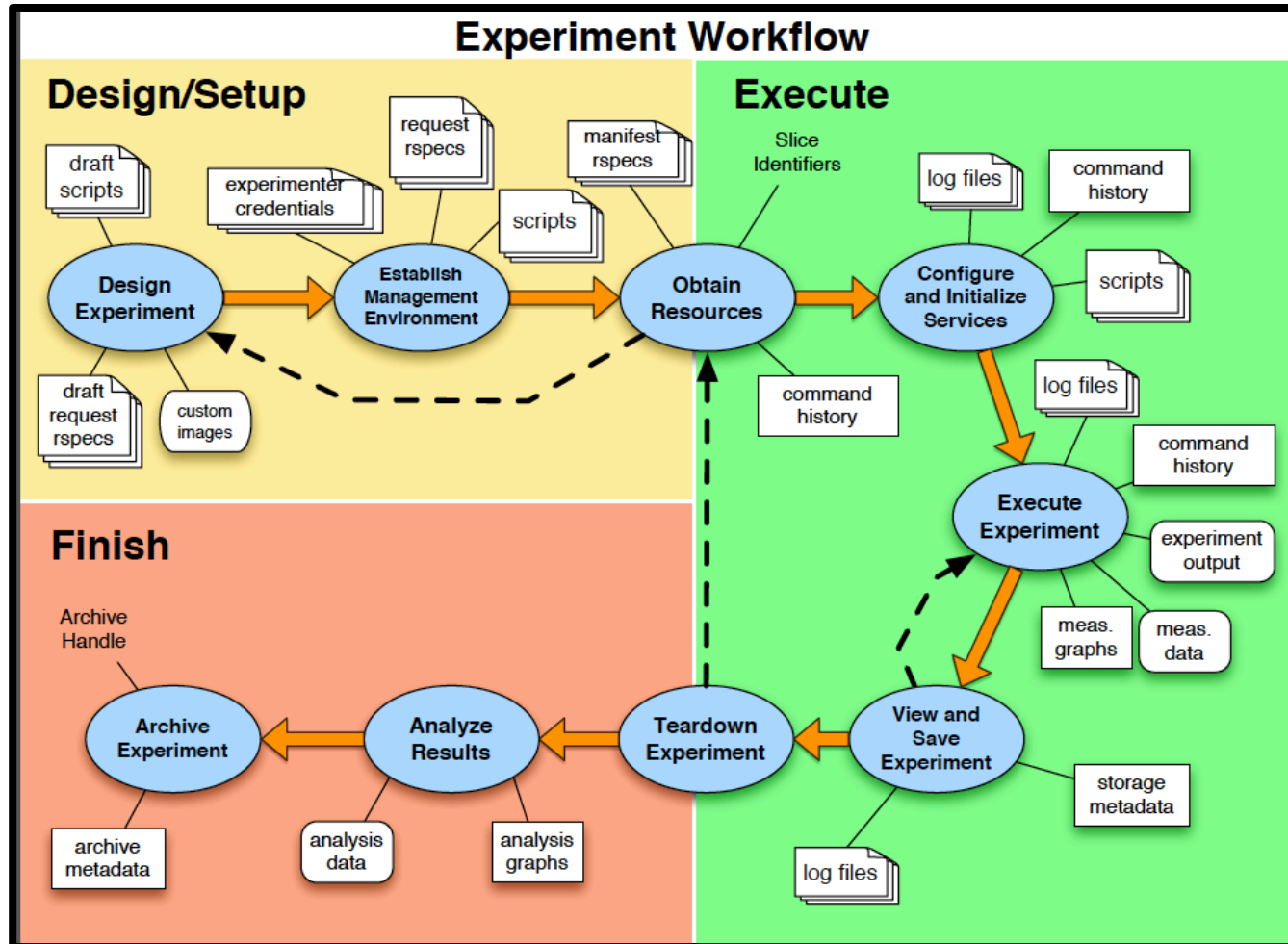
# Detecting Problems

## (Where do they arise?)

- The testbed infrastructure may be down or may not be working correctly - monitoring the testbed infrastructure is clearly important, but that is not the whole story!
- An experiment might not be designed correctly (e.g., incorrect RSPEC).
- An experiment's assigned resources might not "come up" correctly.
- An experiment's assigned resources might not operate correctly.
- An experiment's software/configs may not install correctly.
- An experiment's software may have errors/bugs.
- An experiment may interact in unexpected ways with the underlying testbed.

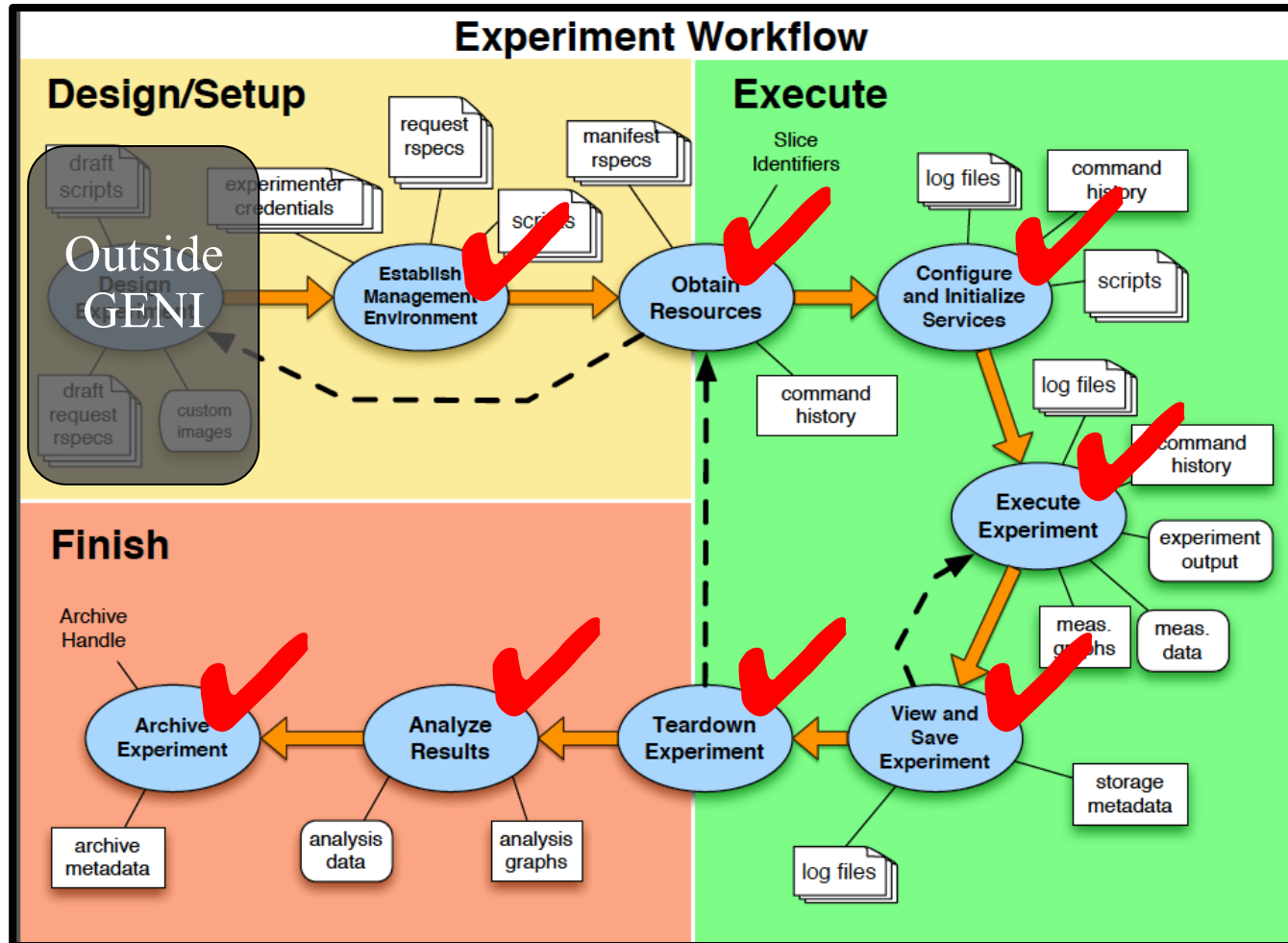
# Need to Monitor Experiments

(i.e., monitor every phase/aspect of an experiment)



<http://groups.geni.net/geni/wiki/ExperimentLifecycle>

# GENI Desktop Helps With:



<http://groups.geni.net/geni/wiki/ExperimentLifecycle>

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# GENI Desktop Introspection/ Monitoring Features

- Monitors slices, not testbeds
- Access to all slices owned by user
- A graphical user interface
- Multiple "views" of a slice (Logical, Geographic, and List views of a slice)
- Supports passive and active measurements
- Quick access to (slice) resource details.
- Customizable slice verification service
- Ssh access to a set of nodes.
- Ability to run commands across sets of nodes.
- Ability to move data to/from a sets of nodes.
- Automatic instrumentation of a slice
- Quick access to, and visualization of, commonly used measurement data.
- Ability to drill down to additional measurement information

# I&M Traffic View

The screenshot displays the Geni Desktop web interface. On the left, a navigation sidebar includes 'Home', 'Settings', 'Views', and 'Renew Cert'. The main area is divided into two sections. The top-left section shows a network diagram with nodes labeled VM-0, VM-1, VM-2, VM-3, and VM-4, connected by links labeled lan1, lan2, lan3, and lan4. A 'GNukyinstagenicm' node is also present. The top-right section contains a grid of performance graphs for VM-0 and VM-2. The graphs for VM-0 include: 'PCWI-13 Total CPU Utilization (MultiCore / Multi-Processor)', 'PCWI-13 IOP Traffic', 'PCWI-13 IP Traffic', and 'PCWI-21 Total CPU Utilization (MultiCore / Multi-Processor)'. The graphs for VM-2 include: 'PCWI-21 IOP Traffic' and 'PCWI-21 IP Traffic'. Each graph shows data over time from 08:50 to 08:55. The bottom of the interface features the 'geni desktop' logo with the tagline 'Exploring Networks of the Future'. The browser's taskbar at the bottom shows the URL 'https://genidesktop.netlab.uky.edu/stable/...', a Google search bar, and several open windows including 'gree13sc', 'GEMINI Graphs', and 'Graphs'.

# Thank You!

# Questions?

This material is based upon work supported in part by the National Science Foundation under grant number CNS-0834243. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of GPO Technologies, Corp, the GENI Project Office, or the National Science Foundation.