



Enabling Grids for E-science

Monitoring the reliability of MPI support on the EGEE Infrastructure

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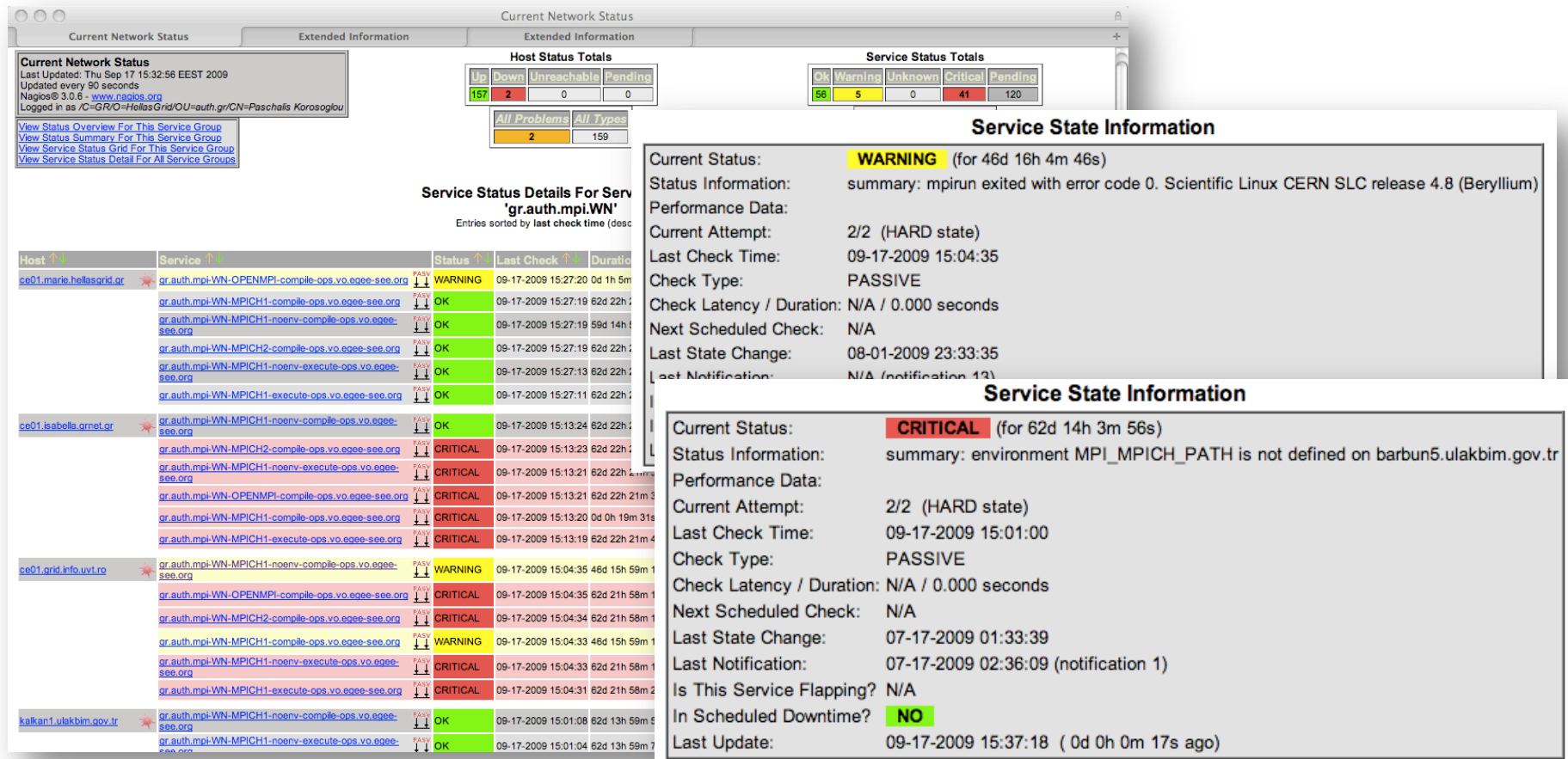


- **Network Filesystem errors (i.e. stale NFS)**
- **Improper MPI installation**
 - Environmental variables not defined
 - Different mpi implementation than the one used by the user to build executable(s)
- **Ssh host based authentication**
- **Erroneous data on information system**
 - Site publishes it supports MPI when no MPI installation exists

- **AUTH Helpdesk stats (June-August 2009)**
 - Received: 21 trouble tickets regarding MPI Support (SEE VO)
 - Escalated: 8 to National Ticketing System, 7 on EGEE-SEE Helpdesk
- **Decision to build mpi-probes**
 - Proactive monitoring of MPI on the Grid infrastructure
 - Reduce effort in the long run
 - Make the infrastructure more robust
- **Objectives**
 - Provide a mechanism (initially for users of the region) to exclude failing sites
 - Provide a robust alert mechanism for site administrators

- **Design initially based on User Practices**
 - Focus on mpich-1 implementation
 - Check Site installation
- **Set of probes**
 - mpich-1
 - Directly execute pre-compiled binary with mpirun
 - Directly compile and execute MPI source code with mpiCC
 - Use MPI_MPICH_PATH to execute pre-compiled binary
 - Use MPI_MPICH_PATH to compile and execute MPI source
 - mpich-2
 - Use MPI_MPICH2_PATH to compile and execute
 - OpenMPI
 - Use MPI_OPENMPI_PATH to compile and execute

- Currently monitoring
 - 37 Grid Sites in the SEE Region
 - 17 of those do not publish “MPICH” in information system



The screenshot displays the Nagios monitoring interface for 'Current Network Status'. It includes summary statistics for Hosts (157 Up, 2 Down, 0 Unreachable, 0 Pending) and Services (66 OK, 5 Warning, 0 Unknown, 41 Critical, 120 Pending). A table lists service status details for 'gr.auth.mpi.WN' across various hosts, with columns for Host, Service, Status, Last Check, and Duration. Two detailed service state information panels are overlaid on the right side of the screenshot.

Service State Information (Top):

- Current Status: **WARNING** (for 46d 16h 4m 46s)
- Status Information: summary: mpirun exited with error code 0. Scientific Linux CERN SLC release 4.8 (Beryllium)
- Performance Data:
- Current Attempt: 2/2 (HARD state)
- Last Check Time: 09-17-2009 15:04:35
- Check Type: PASSIVE
- Check Latency / Duration: N/A / 0.000 seconds
- Next Scheduled Check: N/A
- Last State Change: 08-01-2009 23:33:35
- Last Notification: N/A (notification 1)

Service State Information (Bottom):

- Current Status: **CRITICAL** (for 62d 14h 3m 56s)
- Status Information: summary: environment MPI_MPICH_PATH is not defined on barbun5.ulakbim.gov.tr
- Performance Data:
- Current Attempt: 2/2 (HARD state)
- Last Check Time: 09-17-2009 15:01:00
- Check Type: PASSIVE
- Check Latency / Duration: N/A / 0.000 seconds
- Next Scheduled Check: N/A
- Last State Change: 07-17-2009 01:33:39
- Last Notification: 07-17-2009 02:36:09 (notification 1)
- Is This Service Flapping? N/A
- In Scheduled Downtime? **NO**
- Last Update: 09-17-2009 15:37:18 (0d 0h 0m 17s ago)

- **Ask the information system beforehand**
 - Make sure that Grid Site under testing can provide $n \geq 2$ slots
- **Provide interface for Grid users**
 - Copy and paste “Requirements” attribute into JDL file
- **Scale number of processes per test probe**
- **Test the per-VO installations of MPI**
- **Integrate gr.auth.mpi with latest nagios.org.sam probes**

- <http://tinyurl.com/mqi-wiki>
- <http://tinyurl.com/mqi-nagios> (ops.vo.egee-see.org)