



IBM **Spectrum Storage**

Spectrum Scale

**Spectrum Scale GUI Demo -
Using the GUI for Problem Determination**

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Alerts

The System detects a problem and highlight the issue in the banner and in the dashboard. There are several places where this information is show. The Dashboard allows to overlay events with performance metrics.

The dashboard displays system health and performance metrics. A red notification bubble in the top right corner indicates 1 alert. A yellow callout box points to the 'Alerts overview in the Banner' section, which shows a table of alerts:

ALERTS	AGE
File System (1)	7 minutes

Below the banner, the 'Events' section provides a detailed view of the alert. A yellow callout box points to the 'Alert Details in the Events list' section, which shows a table of events:

Status	First Occurrence	Event ID	Description	Action
Critical	3/14/16 10:23:51 AM	MS0147	The inode usage of fileset small in file system gpfs0 reached a nearly exhausted level. Fill level is above 90.0%.	Run Fix Procedure...

The dashboard also features a 'System Overview' section with a summary of system components: 8 NSDs, 5 Pools, 2 File systems, and 7 Filesets. A red icon indicates 'File system events: 2'. The 'System Health Events' section shows a list of critical events, including the same event as in the Events list. The 'Timeline' section displays a performance graph for 'Public network throughput' with 'Bytes sent' and 'KB/s' metrics. A yellow callout box points to the 'Alerts and performance graph overlay' section, which shows the event from the Events list overlaid on the performance graph at 10:23:51 AM.

Dashboard

It is possible to create dashboards with performance charts, health information and capacity information.

Beginning with the 4.2.1 release, The dashboard is saved on the server and can be accessed by all users



Directed Maintenance Procedures

For some alerts, the user is guided through a set of steps in a Directed Maintenance Procedure.

The screenshot displays a system management interface. At the top, the 'Events' section is titled 'Monitor and troubleshoot the issues that are reported in the system.' Below this, there are navigation options: 'Next Recommended Action', 'Actions', and 'Current Issues'. A table of events is visible, with two rows showing 'Critical' status and '3/1' in the 'First' column. A modal dialog box is open in the foreground, titled 'Run Fix Procedure: Increase Maximum Number of Inodes'. The dialog contains the following text: 'The inode usage of fileset small in file system gpfs0 reached a nearly exhausted level. Fill level is above 90.0%. Current/maximum number of inodes: 2048 / 2048. Increase maximum number of inodes (%): [slider] 151 %. The new maximum number of inodes will be 5144.' Below this, there is an information icon and the text 'Press Finish to increase the inodes limit of the fileset small'. At the bottom of the dialog, there is a 'Status: No task running' dropdown menu and three buttons: 'Back', 'Finish', and 'Cancel'.

Events

Monitor and troubleshoot the issues that are reported in the system.

Next Recommended Action Actions Current Issues

Status ^	First
Critical	3/1
Critical	3/1

Run Fix Procedure: Increase Maximum Number of Inodes

The inode usage of fileset small in file system gpfs0 reached a nearly exhausted level. Fill level is above 90.0%.
Current/maximum number of inodes: 2048 / 2048
Increase maximum number of inodes (%): 151 %
The new maximum number of inodes will be **5144**

i Press Finish to increase the inodes limit of the fileset **small**

Status: No task running

Back Finish Cancel

Nodes Overview

There is a section with a wealth of information on nodes.

Summary charts show the top contributors to certain metrics over time

A sortable and filterable table combines configuration information together with performance statistics and health information

There are prefiltered tables for NSD servers and protocol servers with specific columns which are only relevant for these types of nodes

Nodes ▼ Last 60 minutes

Monitor the performance and health status of the nodes that are configured in the cluster.

CPU usage

Legend: mr-31.localnet.com (green), mr-33.localnet.com (yellow), mr-34.localnet.com (blue)

Overall client data rate

Legend: Bytes read (green), Bytes written (yellow)

All nodes | NSD server nodes | Protocol nodes

Actions ▼ | View Details | Data interval 3:12 PM - 3:12 PM |

Name ^	GPFS state	CPU usage	Load	Memory used	Bytes read	Bytes written	Avg queue wait r	Avg queue wait w	Protocol
mr-31.localnet.com	Active	5.57 %	n/a	6.68 %	0 bytes/s	0 bytes/s	0 ns	0 ns	
mr-32.localnet.com	Active	2.7 %	0.06	4.62 %	0 bytes/s	0 bytes/s	0 ns	0 ns	
mr-33.localnet.com	Active	21.6 %	n/a	7.01 %	n/a	n/a	n/a	n/a	✓
mr-34.localnet.com	Active	20.1 %	n/a	6.49 %	n/a	n/a	n/a	n/a	✓

Nodes Details

In order to drill down deeper, there are several table which show various node specific details on nodes.

Sections which are covered are events, file systems, protocols, network.

The screenshot displays a monitoring interface with a sidebar on the left and a main content area on the right. The sidebar contains navigation icons for home, document, navigation, status, help, and settings. The main content area is divided into two panels. The left panel, titled 'Nodes', shows a list of four nodes, with 'mr-33.localnet.com' selected and highlighted. The right panel, titled 'mr-33.localnet.com', shows the 'File Systems' tab with three line graphs: 'File system throughput (write)', 'Average transaction size (read)', and 'File system latency (write)'. Below the graphs is a table with columns for Name, Mount status, IBM spectrum scale™ client bytes read, and Avg queue wait r.

Name ^	GPFS state
mr-31.localnet.com	Active
mr-32.localnet.com	Active
mr-33.localnet.com	Active
mr-34.localnet.com	Active

Name ^	Mount status	IBM spectrum scale™ client bytes read	Avg queue wait r
gpfs0	Mounted	1.3 KiB/s	41.3 us
gpfs1	Mounted	842 bytes/s	18.7 us