

GRIDScaler™

Network Reconnect After a Remote Procedure Call Could Put Data at Risk

ALERT! GRIDScaler customers running GPFS or Spectrum Scale versions 4.1.0.0 – 4.1.1.17, 4.2.0.0 – 4.2.1.1, or 4.2.3.0 – 4.2.3.4 should upgrade to Spectrum Scale version 4.1.1.18 or 4.2.3.5 at their earliest convenience. Please contact DDN Support for assistance.

Issue Summary

DDN has been made aware of a problem in Spectrum Scale 4.1 and 4.2 when resending an NSD remote procedure call (RPC) after a network reconnect. Under certain conditions, this may result in file system corruption or undetected data corruption.

Root Cause

When a TCP connection breaks between two nodes, an attempt is made to re-establish the TCP connection by initiating a new connection and then restoring the state of the RPC flow. The latter step includes resending RPCs that were pending at the time the connection was broken. A problem has been identified in the logic that handles this resending. Some of the important data at the start of the RPC (such as NSD disk number, sector index, and bytes to write) may not be copied properly between buffers. When this happens, the first part of the user file data is treated as the NSD disk number, sector index, and bytes to write.

The most likely outcome is a daemon crash with `'logAssertFailed: !"Request and queue size mismatch"'`. But if the user data is similar enough to an NSD header, the RPC will

be interpreted as if it were a correct NSD RPC, and in the worst case this may result in file system corruption or undetected data corruption.

Affected Products

GPFS versions 4.1.0.0 through 4.1.0.8 are affected by this issue, as are Spectrum Scale versions 4.1.1.0 through 4.1.1.17 and versions 4.2.0.0 through 4.2.3.4. Affected versions of GPFS or Spectrum Scale are bundled with GRIDScaler versions 3.2.0 through 3.2.4 and versions 4.0.0 through 4.2.0.

GRIDScaler 4.2.1 incorporates Spectrum Scale 4.2.3.5 and is **not** affected by this issue.

Resolution

GRIDScaler customers are strongly advised to upgrade to Spectrum Scale 4.1.1.18 or 4.2.3.5, as indicated for their GRIDScaler product in the table below. Please contact DDN Support for assistance.

GRIDSCALER	GPFS / SPECTRUM SCALE	UPGRADE REQUIRED
GRIDScaler 4.2.1	Spectrum Scale 4.2.3.5	NONE
GRIDScaler 4.2.0	Spectrum Scale 4.2.3.0 - 4.2.3.4	Apply Spectrum Scale PTF 4.2.3.5 = or = upgrade to GRIDScaler 4.2.1
GRIDScaler 3.2.1 – 4.1.0	Spectrum Scale 4.2.0.0 – 4.2.1.1	Upgrade Spectrum Scale to version 4.2.3.5
GRIDScaler 3.0.0 – 3.2.0	GPFS 4.1.0.0 – 4.1.0.8 = or = Spectrum Scale 4.1.1.0 – 4.1.1.17	Upgrade to Spectrum Scale 4.1.1.18

Contacting DDN Technical Support

Please contact DDN Technical Support at any time if you have questions or require assistance. Support can be reached by phone, by email, or on the web as listed below.

Web

*DDN Community Support Portal
Portal Assistance*

<https://community.ddn.com/login>
webportal.support@ddn.com

Telephone

DDN Support Worldwide Directory

<http://www.ddn.com/support/contact-support>

Email

Support Email

support@ddn.com

Bulletins

Support Bulletins

End-of-Life Notices

Bulletin Subscription Requests

<http://www.ddn.com/support/technical-support-bulletins>

<http://www.ddn.com/support/end-of-life-notices>

support-tsb@ddn.com