



NETAPP LEARNING SERVICES

StorageGRID Troubleshooting Essentials

Delivery: Web-based training (WBT)

Duration: 2 hours

Course Description

Learn about the NetApp® StorageGRID® problem determination process. Understand the StorageGRID 11.7 Troubleshooting Guide in a comprehensible way, with added interactions and simulations. Successfully troubleshoot Admin Nodes and Storage Nodes. Also, learn other tips to help you troubleshoot StorageGRID issues.

Role

Administrator, engineer, architect

Prerequisites

- *StorageGRID Administration*
- *StorageGRID Fundamentals*

Objectives

This course focuses on enabling you to do the following:

- Follow the StorageGRID problem determination methodology to solve or escalate a case
- Successfully troubleshoot Admin Nodes and Storage Nodes
- Examine audit and system logs
- Troubleshoot object and storage issues
- Determine the cause of metadata issues
- Troubleshoot network and connection issues
- Troubleshoot cloud storage pool connectivity issues
- Identify grid federation issues
- Examine NetApp FabricPool with StorageGRID issues

Course Content

This course includes the following lessons and topics:

Lesson	Topics
<p>Lesson 1:</p> <p>Welcome</p>	<ul style="list-style-type: none">• StorageGRID Troubleshooting Essentials• About this course• Course modules
<p>Lesson 2:</p> <p>Introduction to problem determination</p>	<ul style="list-style-type: none">• Overview of problem determination• StorageGRID health check• Perform a health check• Problem determination overview• Problem determination flowchart• Problem determination process
<p>Lesson 3:</p> <p>Collecting data for analysis</p>	<ul style="list-style-type: none">• Collecting data for analysis• Diagnostics• Diagnostics details• Recent changes• Checking connectivity status• Plotting trends• Using reports to plot trends• Grafana metrics• Establishing baselines• Monitoring events from the Grid Topology page• Monitoring previous events• Collecting log files and system data• Downloading logs• Triggering an AutoSupport message• Knowledge check• Module summary

<p>Lesson 4: Troubleshooting sign-on errors</p>	<ul style="list-style-type: none"> • Troubleshooting Admin Node and UI issues • Troubleshooting sign-on errors • Potential sign-on errors • Common error messages seen at sign-in • Troubleshooting guidelines
<p>Lesson 5: Troubleshooting Admin Node services</p>	<ul style="list-style-type: none"> • Troubleshooting Admin Node services • Admin Node services status • Knowledge check: True or false • Module summary
<p>Lesson 6: Log file locations</p>	<ul style="list-style-type: none"> • Audit and system logs • Audit and system log file locations • Collecting grid log files and system data • System log files • Audit log files
<p>Lesson 7: Log file management</p>	<ul style="list-style-type: none"> • Log file management • Low audit log disk capacity alert • Log forwarding • Knowledge check: Question 1 • Knowledge check: Question 2 • Module summary
<p>Lesson 8: Troubleshooting object data storage issues</p>	<ul style="list-style-type: none"> • Troubleshooting object data storage issues • Object stores (storage volume) • Object store faults • Low object data storage alert • Object data space thresholds

<p style="text-align: center;">Lesson 9: Troubleshooting object integrity issues</p>	<ul style="list-style-type: none"> • Troubleshooting object integrity issues • Confirming object data locations • Verifying object integrity • Background verification monitoring • Background verification rate • Missing objects or fragments • Objects lost alert • Searching for and restoring potentially lost objects • Object existence check monitoring
<p style="text-align: center;">Lesson 10: Troubleshooting platform services</p>	<ul style="list-style-type: none"> • Troubleshooting platform services • Troubleshooting platform service issues • Recoverable and unrecoverable endpoint errors • Troubleshooting unrecoverable platform service errors • Platform services unavailable alert • Knowledge check • Module summary
<p style="text-align: center;">Lesson 11: Troubleshooting metadata issues</p>	<ul style="list-style-type: none"> • Troubleshooting metadata issues • Where is object metadata stored? • Sources of metadata issues • Low metadata storage alert • Critical low metadata storage alert example • Services: Status – Cassandra (SVST) alarm • SSM services overview • Restart Cassandra • Monitor Cassandra startup • Additional Cassandra health checks • Total Events (SMTT) Cassandra-out-of-memory alarm • Knowledge check • Module summary

<p>Lesson 12:</p> <p>Grid Network troubleshooting</p>	<ul style="list-style-type: none"> • Troubleshooting network and connection issues • Grid Network MTU Mismatch alert • Network Receive Error alarm • NRER error count reset • 422: Unprocessable Entity • Time synchronization
<p>Lesson 13:</p> <p>Network troubleshooting tools</p>	<ul style="list-style-type: none"> • Network troubleshooting tools
<p>Lesson 14:</p> <p>Restore network connectivity for isolated nodes</p>	<ul style="list-style-type: none"> • Restore network connectivity for isolated nodes
<p>Lesson 15:</p>	<ul style="list-style-type: none"> • Knowledge check • Module summary
<p>Lesson 16:</p> <p>Cloud Storage Pool configuration issues</p>	<ul style="list-style-type: none"> • Troubleshooting Cloud Storage Pool connectivity issues • Cloud Storage Pool configuration issues • Problem determination • Cloud Storage Pool configuration errors
<p>Lesson 17:</p> <p>Cloud Storage Pool operation issues</p>	<ul style="list-style-type: none"> • Cloud Storage Pool operation issues • Cloud Storage Pool operation errors
<p>Lesson 18:</p> <p>Cloud Storage Pool deletion issues</p>	<ul style="list-style-type: none"> • Cloud Storage Pool deletion issues • Cloud Storage Pool deletion errors • Knowledge check, question 1 • Knowledge check, question 2 • Module summary
<p>Lesson 19:</p> <p>Troubleshooting grid federation configuration issues</p>	<ul style="list-style-type: none"> • Troubleshooting grid federation issues • Troubleshooting grid federation configuration issues • Problem determination • Grid federation configuration errors

<p>Lesson 20:</p> <p>Troubleshooting cross-grid replication issues</p>	<ul style="list-style-type: none"> • Troubleshooting cross-grid replication issues • Cross-grid replication alerts and errors • Cross-grid replication errors • Identify and retry failed replication operations • Knowledge check, question 1 • Knowledge check, question 2 • Module summary
<p>Lesson 21:</p> <p>Identifying FabricPool issues</p>	<ul style="list-style-type: none"> • Troubleshooting FabricPool issues • Identifying FabricPool issues • ONTAP FabricPool review • How FabricPool tiering works • Symptoms of object store unavailability • Problem determination
<p>Lesson 22:</p> <p>Troubleshooting FabricPool connectivity issues</p>	<ul style="list-style-type: none"> • Troubleshooting FabricPool connectivity issues • Troubleshooting FabricPool connectivity issues • Troubleshooting network connectivity • Troubleshooting certificate issues • Troubleshooting object store access issues • Knowledge check, question 1 • Knowledge check, question 2 • Module summary

Course ID: STRSW-WBT-TROSGRID
5 April 2024