

HP Server Automation Storage Compliance

for the HP-UX, IBM AIX, Red Hat Enterprise Linux, Solaris, SUSE Linux Enterprise Server, VMware, and Windows® operating systems

Software Version: 9.10

User Guide: Storage Compliance

Document Release Date: June 2011

Software Release Date: June 2011



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1 Introduction

Overview of Storage Compliance

Storage compliance provides storage administrators and server administrators the ability to audit storage infrastructure to identify any potential issues. A storage administrator typically needs to audit the infrastructure to identify the potential for problems or issues before they have a chance of affecting an internal customer (business owner, application, or server). A server administrator typically needs to make sure the storage provided meets certain Service Level Agreements (SLAs) for reliability and performance. From a compliance perspective, provided storage information would also help auditors, compliance officers, and managers, when applied globally to classes of servers or applications.

Because storage administrators and server administrators generally share a common goal of ensuring consistency with the unique software stack that has been approved and tested by an organization, they need to monitor firmware and other software compliance. A storage administrator needs to confirm the right firmware levels. A server administrator needs to make sure the HBAs, volume managers, MPIOs, and so on, are the correct versions. The shared end-goal is a standardized environment where interoperability between all moving parts is much more reliable.

SA Client Integration

Storage compliance in Storage Visibility and Automation is integrated with the Audit and Remediation feature in the SA Client. To implement storage compliance, you must be familiar with the basics of SA Audit and Remediation. See the *SA User Guide: Application Automation* for information about using the following Audit and Remediation capabilities:

- Compliance View
- Configuring a storage audit
- Configuring specific rules
- Selecting target servers
- Configuring a snapshot specification
- Running and scheduling an audit
- Viewing audit results
- Deleting an audit

2 Audit Rules, Schedule, and Results

The storage compliance feature provides visibility into storage configurations in a managed server or device group by allowing you to specify audit rules that check initiator ports connected to multiple ports, FCAs, LUNs available but not mounted, RAID levels, SAN storage, and so on.



Storage audit rules are run against data in the Model Repository.

Table 1 lists the audit rules and parameters for storage compliance. These rules allow you to define the check for minimum, maximum, or exact numbers.

Table 1 Storage Audit Rules & Parameters

Audit Rule	Parameter
Unmounted Volume Capacity	Acceptable total capacity of unmounted volumes in bytes
Unmounted Volume Count	Acceptable number of unmounted volumes
Fabrics	Acceptable number of fabrics
FCA	Acceptable number of Fibre Channel Adapters (FCAs)
Initiator Ports	Acceptable number of ports
Switches	Acceptable number of switches
Target Ports	Acceptable number of ports
RAID Type	Acceptable RAID types on the target storage array Note: The audit will fail if this rule is selected and no RAID type is specified.

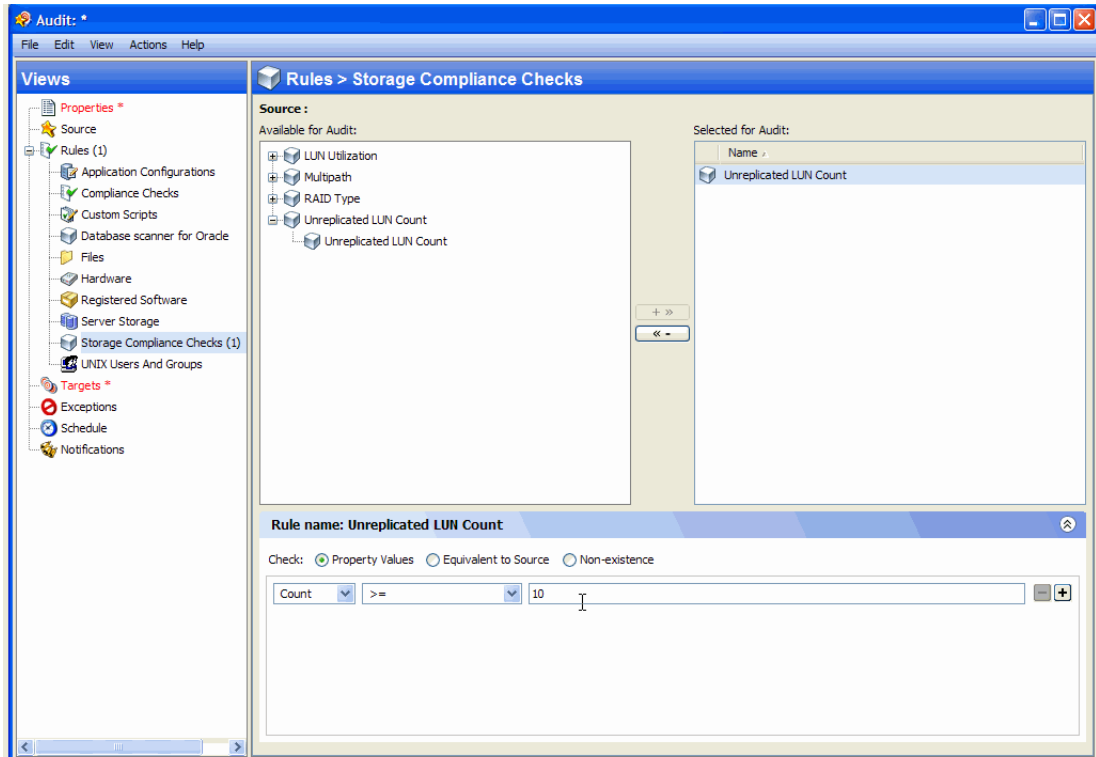


The compliance rules that involve ports, switches, or fabrics, check active ports only. These types of compliance rules do not check for physical port connectivity.

Audit Browser

Figure 1 shows storage rules selected in an audit. The Audit Browser shows an unreplicated LUN count choice in the Source list under **Rules > Storage Compliance Checks**. See the *SA User Guide: Audit & Compliance* for information about specifying rule details.

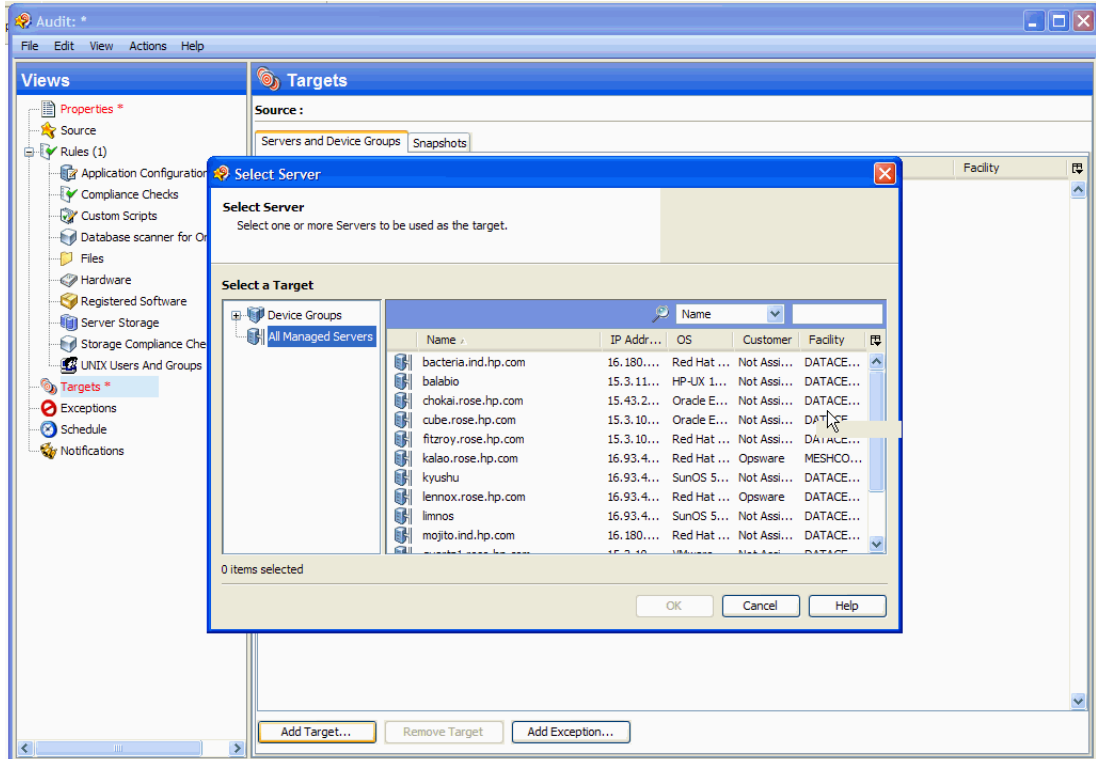
Figure 1 Audit Browser for Storage Rules



Select Server

Figure 2 shows how you specify which servers are used as targets in the audit. In the Views pane, select Targets. In the Source content pane, choose the Servers and Device Groups tab. In the Select Server window, select All Managed Servers to see a list of targets. See the *SA User Guide: Audit & Compliance* for information about adding audit targets.

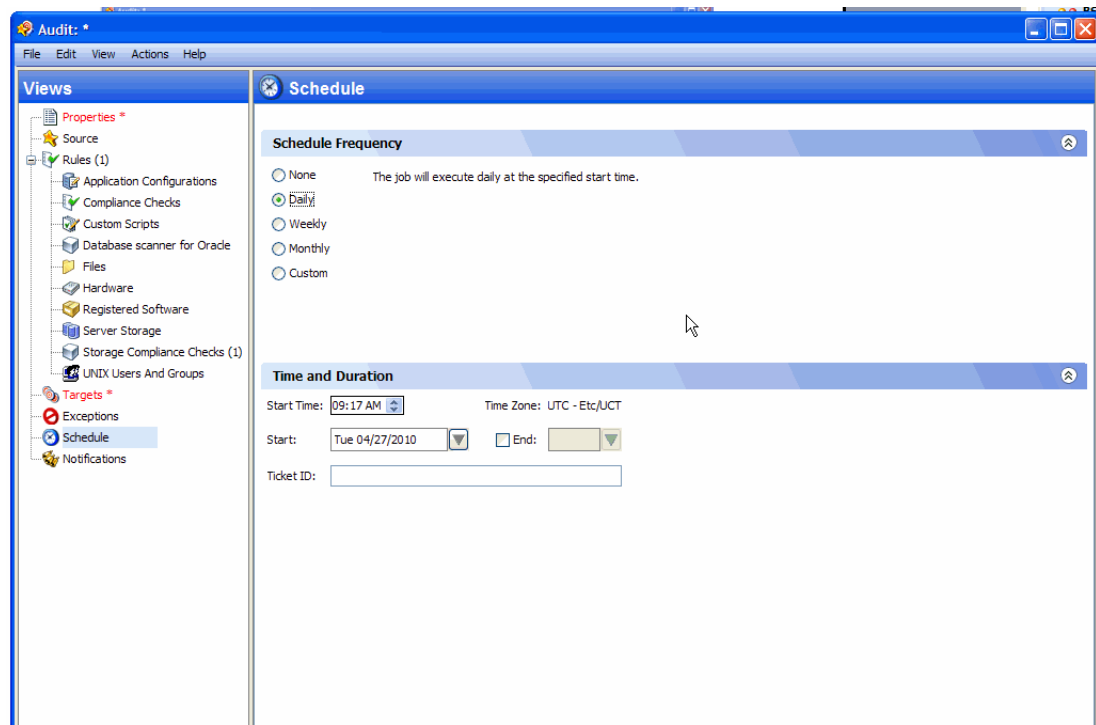
Figure 2 Target Server for a Storage Audit



Audit Schedule

Figure 3 shows how to schedule an audit. See the *SA User Guide: Audit & Compliance* for information about scheduling audits.

Figure 3 Schedule for a Storage Audit



Audit Summary

Figure 4 shows a summary of the audit results. In the Audit Results window, in the Views pane, select Summary.

Figure 4 Summary View

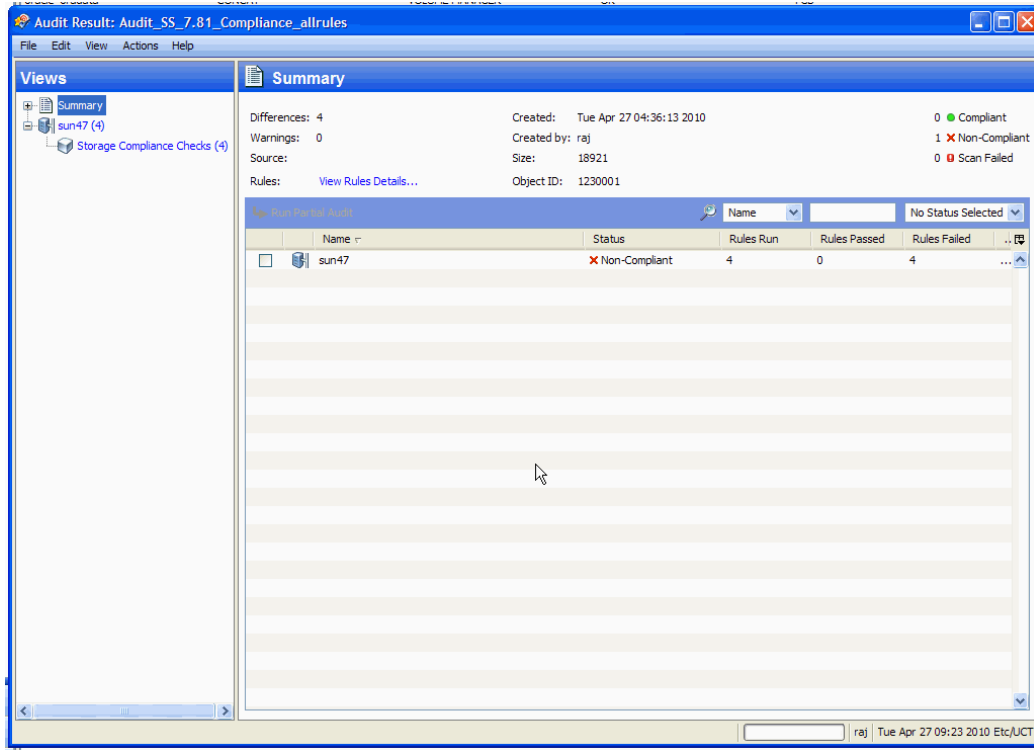


Figure 5 lists the storage compliance checks in an example audit. In the Audit Results window, in the Views pane, select Storage Compliance Checks.

Figure 5 Storage Compliance Checks

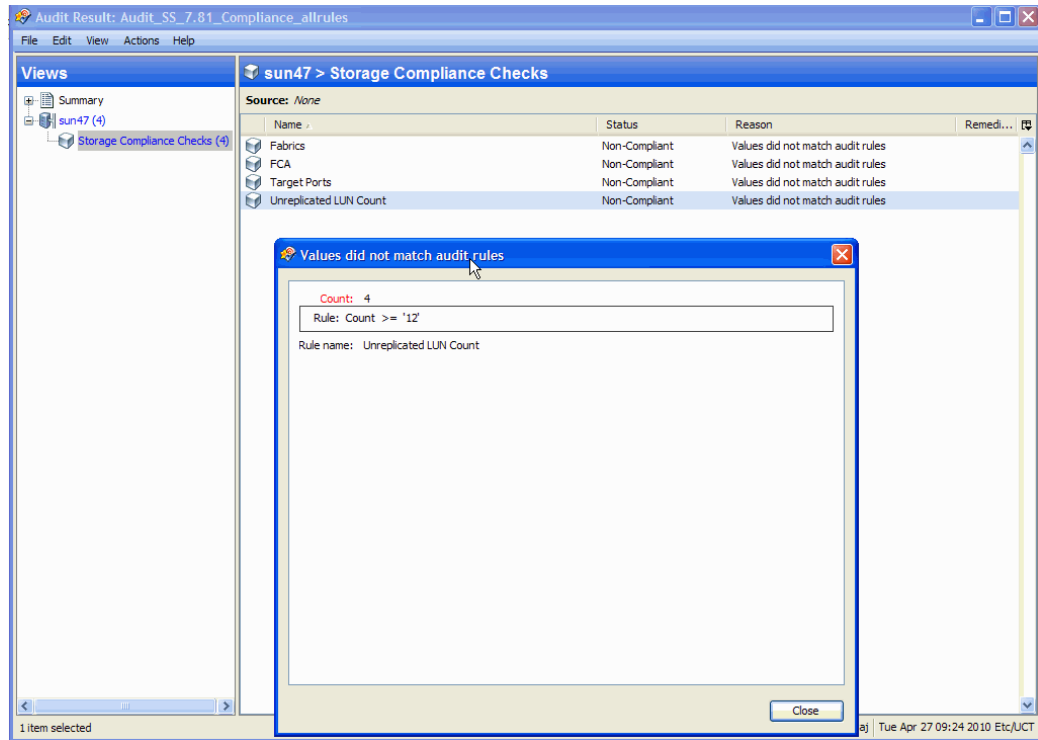


Figure 6 shows audit results that comply with a specific storage compliance check.

Figure 6 Compliant Audit Results

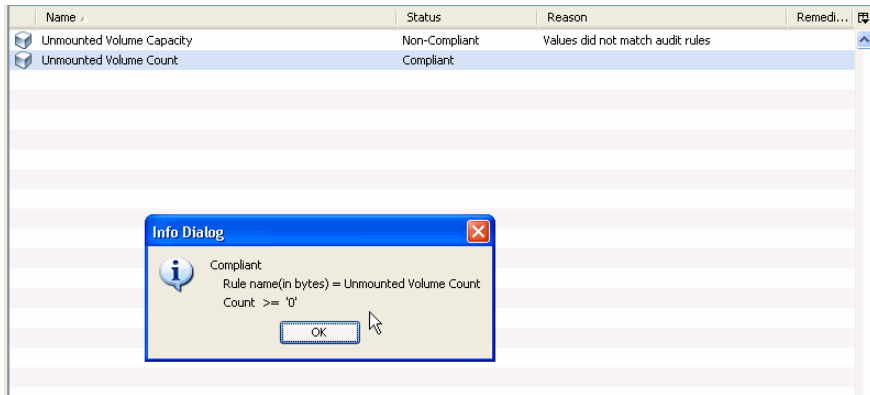
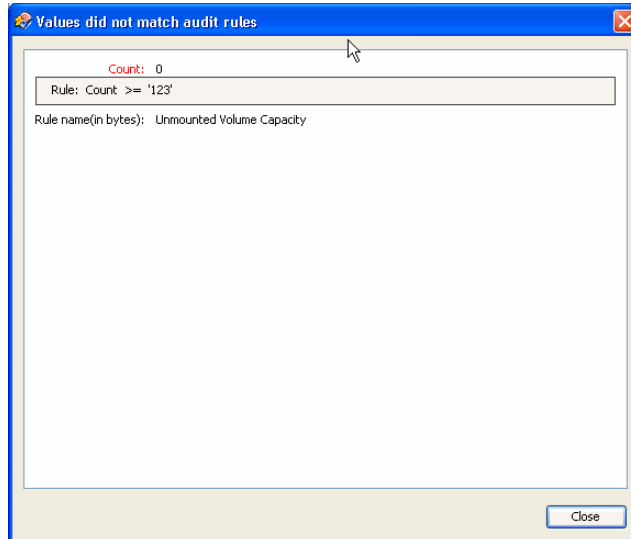


Figure 7 shows audit results that do not comply with (match) a specific storage compliance check.

Figure 7 Non-compliant Audit Results

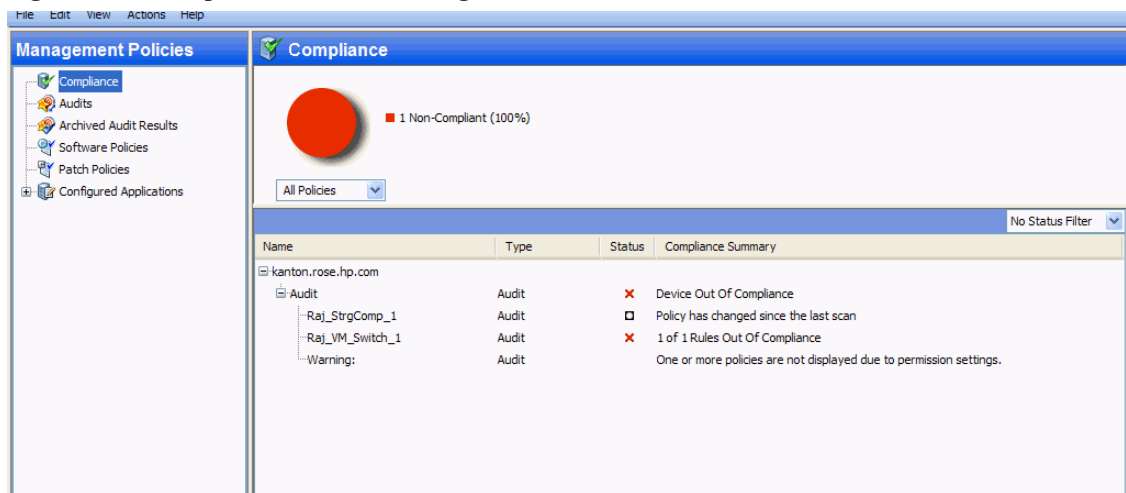


3 Compliance View

To help troubleshoot problems, the Compliance View allows you to view storage compliance for managed servers in a facility. In the Compliance View, you can navigate to a managed server to view the audits you created and see whether the server is compliant. [Figure 1](#) shows storage compliance information for a managed server.

See the *SA User Guide: Audit & Compliance* for more information about the Compliance View.

Figure 1 Compliance View for Storage Audits



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