Quantum Lattus User Essentials

Review this document with your installer after your system has been installed and initially configured. It will help you become familiar with your Lattus object storage system.

Ask Your Installer

After your storage system is installed and configured, ask the installer to describe:

- ☐ The individual Lattus hardware components
- ☐ Where to find licensing information
- ☐ How to monitor Lattus
- ☐ How to perform maintenance
- ☐ How to troubleshoot common problems
- ☐ How to replace Lattus Storage Node customer replaceable units (CRUs)
- ☐ How to get help and service

Product Overview

Quantum Lattus™ Object Storage is disk-based storage that meets the extreme scalability, durability, and access requirements of large-scale data archives. Lattus object storage offers several different access methods to put data in and get data out of the Lattus storage, including access through StorNext®, NAS (CIFS/NFS), S3, or native HTTP REST for customers who have ported their applications to use the Lattus REST APIs.

Maintaining Lattus

The most critical maintenance task you need to perform is to decommission degraded storage disks in your Lattus Storage Nodes. Decommissioning degraded storage disks initiates the repair of objects in the storage pool affected by degraded disks, and logically removes the degraded disks from the available list of storage disks in the Lattus object storage. The system will automatically decommission blockstore degraded disks in a Lattus Storage Node via the **auto decommission disk** policy. However, degraded disks that contain partitions that are part of a RAID set are not automatically decommissioned and need to be manually decommissioned.

Signs that degraded disks may be affecting your data durability include:

- **Worst Case Overall Disk Safety** displayed in the Lattus CMC Dashboard is lower than the lowest configured optimal disk safety for your Lattus system
- **Disks** section of the Lattus CMC Dashboard indicates there are degraded disks
- **E-mail notifications** about events related to degraded disks and/or objects with low disk safety
- **Events** in the Lattus CMC Dashboard related to degraded disks and/or objects with low disk safety
- **Blacklists** graph shows an increasing number of blacklists

For details on identifying, testing, and manually decommissioning degraded disks in Lattus Storage Nodes, refer to the "Monitoring Lattus", "Troubleshooting Lattus," and "Maintaining Lattus", chapters in the *Lattus User's Guide*.

Monitoring Lattus

The key to maintaining optimal data durability and system performance is by regularly monitoring your Lattus system and addressing problems, such as degraded disks or capacity warnings. The following list highlights the common things you should monitor. For details, refer to the "Monitoring Lattus" chapter of the *Lattus User's Guide*.

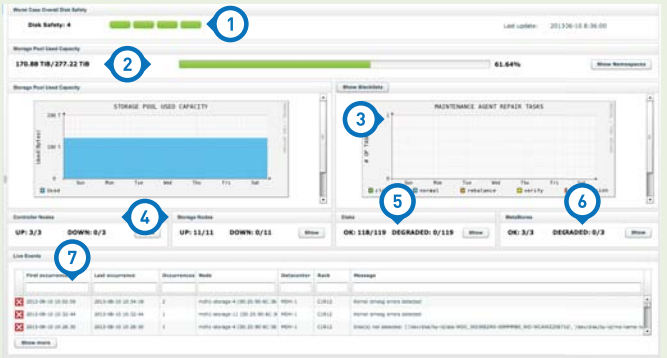
E-mail Notifications

Lattus provides two kinds of e-mail notifications to help monitor system status:

- **Real-Time Event E-mail Notifications:** Alert you immediately by e-mail about important events occurring in the Lattus system.
- **Phone Home E-mail Notifications:** Sent once every 24 hours to Quantum Support (and optionally to customers), these include a summary of all events of the specified severity that have occurred in the Lattus system since the last phone home notification was sent.

Lattus Cloud Management Center (CMC)

The following screen shot highlights information available in the CMC.



1. **Worst Case Overall Disk Safety:** Displays the current actual disk safety of the object in your Lattus system with the lowest actual disk safety. You should reference this against the durability policies configured and the lowest configured disk safety.
2. **Storage Pool Used Capacity:** Displays how much of your Lattus system's capacity is currently being used. If the used capacity reaches 80% or more, contact your Quantum Sales representative to discuss growing your Lattus system's capacity.
3. **Maintenance Agents Repair Tasks/Blacklists Graph:** The **Maintenance Agents Repair Tasks** graph (the default view) displays the number of repair tasks (e.g., decommissioning, rebalancing) that have occurred over the last week. Clicking the **Show Blacklists** button shows the **Blacklists** graph, which displays the number of failed reads and writes ("blacklists") to the object storage over the last week. If the number of blacklists is increasing, refer to the "Monitoring Lattus" chapter of the *Lattus User's Guide* for instructions.
4. **Controller Nodes/Storage Nodes:** Displays the status of the Lattus Controller Nodes and Lattus Storage Nodes (**UP** or **DOWN**). If you see nodes that are down, refer to the "Monitoring Lattus" chapter of the *Lattus User's Guide* for instructions.
5. **Disks:** Displays the status (**OK** or **DEGRADED**) of all disks (HDDs and SSDs) in the Lattus system. If there are degraded storage disks, refer to the "Troubleshooting Lattus" and "Maintaining Lattus" chapters of the *Lattus User's Guide* for instructions on testing and decommissioning degraded disks. If the degraded disks are in the Lattus Controller Nodes, contact Quantum Support.
6. **MetaStores:** Displays the status (**OK** or **DEGRADED**) of all MetaStores in the Lattus system. If a MetaStore is degraded, refer to the "Monitoring Lattus" chapter of the *Lattus User's Guide* for instructions.
7. **Live Events:** Displays the most recent events on the Lattus system. If you see **critical** events listed, refer to the "Monitoring Lattus" chapter of the *Lattus User's Guide* for instructions.

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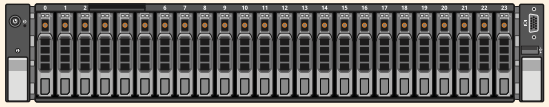
Troubleshooting Lattus

The most common Lattus troubleshooting scenarios are listed below. The details for these scenarios and several others can be found in the "Monitoring Lattus" and "Troubleshooting Lattus" chapters of the *Lattus User's Guide*:

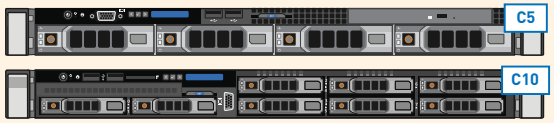
- Events reported in the Lattus CMC or through e-mail notifications
- Blacklists
- Degraded disks in the Lattus Storage Nodes
- Storage pool used capacity reaching above 70%, 80%, or 90% full
- Degraded MetaStores on the Lattus Controller Nodes
- MetaStores reaching capacity
- Failed CRUs in the Lattus Storage Nodes

Lattus Hardware

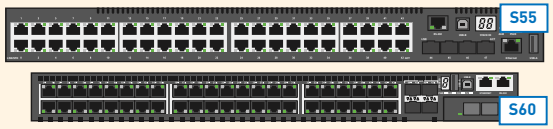
This section will help you identify the hardware components included in your Lattus system. For complete details on each component, refer to the "Product Overview" section in the *Lattus User's Guide*.



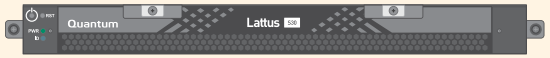
Lattus A10 Access Node (front bezel removed)
Provides NAS (NFS/CIFS) file access to Lattus.



Lattus C5/C10 Controller Nodes (front bezels removed)
Provide management and control of the Lattus object storage system.



Lattus S55/S60 Rack Switches (port side)
Provide the back-end network connection between the Controller Nodes and the Storage Nodes.



Lattus S20 Model 2/S30 Storage Node (front)
Provides the high-density, power-efficient storage for the system.

Lattus System Switch (port side)
Enables rack interconnectivity between racks in a configuration containing four or more racks.

Required Add-On Components

You must purchase a StorNext Metadata Appliance (or customer-supplied MDC) with Lattus-M Feature Keys to integrate StorNext with Lattus Object Storage. In addition, you must add a Lattus Interconnect Switch (shown below) or customer-supplied interconnect switch to connect the StorNext MDCs/DDMs to the Lattus Controller Nodes.

Lattus Interconnect Switch (port side)

Optional Add-On Components for Lattus

As your needs change, your Quantum Sales representative can work with you to determine the add-on components for growing your system. For a description of each component and an explanation of why you might add them, see the "Product Overview" chapter in the *Lattus User's Guide*.

Growing Lattus Capacity and Performance

You can expand your Lattus system to meet your growing capacity and performance needs as they change. Consult your Quantum representative and refer to the "Growing Lattus Capacity and Increasing Performance" chapter of the *Lattus User's Guide* for more details on topics such as:

- Adding capacity
- Adding geographies
- Rebalancing data
- Increasing performance
- Creating new durability policies
- Creating and editing Namespaces

Lattus Documentation & Training

For Lattus documentation, go to www.quantum.com/lattusdocs. Use the following documents:

- *Lattus User's Guide* – Provides instructions on monitoring, maintaining, troubleshooting, and growing your Lattus system to meet your storage needs.
- *Lattus Release Notes* – Provides important information, late-breaking news, and a list of known issues of which Lattus users should be informed.
- *Lattus Site Planning Guide* – Provides component specifications and assists end-users in preparing the site for Lattus installation.
- *Lattus REST API User's Guide* – Provides instructions on how you can adopt your applications to talk directly to the Lattus Controller Nodes to be able to write objects natively to the Lattus system.

For Lattus training and support materials, such as how-to videos and training courses, go to http://www.quantum.com/lattushowtos.

Getting Help

Below are the key things you need to know before contacting Quantum Support for assistance with your Lattus system. Complete details on these topics can be found in the "Getting Help" chapter of the *Lattus User's Guide*.

Locating the System Serial Number

You will need to provide your system serial number for technical support. You can locate the system serial number in the Lattus CMC. If the CMC is unavailable, use the Service Tag number from any of the Lattus Controller Nodes.

From the Lattus CMC

1. Select **Dashboard > Administration > Lattus Management > Locations.**
2. In the **Locations** screen, the system's serial number will be listed in the **Name** column.

On the Lattus Controller Node Hardware

1. From the front of any of the Lattus Controller Nodes, pull out the Service Tag.
2. Provide the Dell Service Tag number.

Contacting Quantum Support

You can contact Quantum Support in two ways:

- Access the Online Service Center by opening an Online Service Request at https://onlineservice.quantum.com/OA_HTML/xxibu/jtflogin.jsp
- See a list of all contact options, including local toll free numbers based on location: http://www.quantum.com/ServiceandSupport/Contacts/ProductSelect/Index.aspx

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