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Monitoring the K2 Lx0 RAID with NetCentral

This document describes how to set up the K2 Level 10, 20, 30, and 40 RAID storage devices for monitoring with NetCentral software.

For information about the overall NetCentral system, read the *NetCentral User Guide*.

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Before you begin monitoring with NetCentral

The following systems must be in place before you can begin monitoring your K2 Lx0 RAID with NetCentral:

- NetCentral manager software must be installed and operating correctly on the NetCentral server. Refer to the *NetCentral User Guide*.
- The NetCentral server and the K2 Lx0 RAID must be on the network and be able to communicate with one another. To verify, use the *ping* command at the MS-DOS command prompt.
- The K2 Lx0 RAID device provider must be installed on the NetCentral server PC. In NetCentral manager, click **File | New | Device Provider** and follow the on-screen instructions to install the **K2 RAID Lx0** device provider. Refer to the *NetCentral User Guide* for a detailed procedure.

When these prerequisites are met, continue with the next procedure "Adding the K2 Lx0 RAID to NetCentral".

Adding the K2 Lx0 RAID to NetCentral

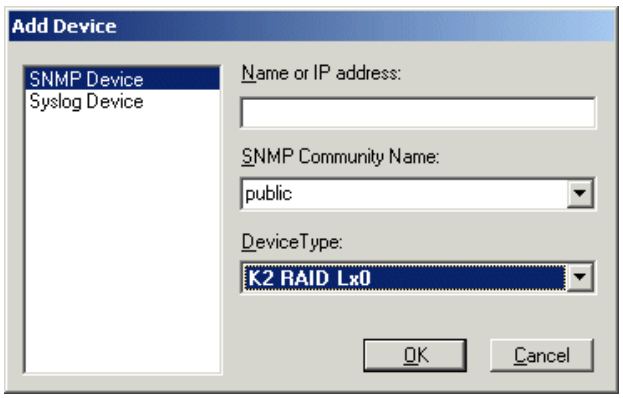
The following procedure adds the K2 Lx0 RAID to the NetCentral manager tree view and automatically sets the SNMP trap destination on the K2 Lx0 RAID. Setting the SNMP trap destination ensures that K2 Lx0 RAID status messages are sent to the NetCentral server.

NOTE: If the K2 Lx0 RAID device has two controllers, keep in mind that there is a SNMP agent on each controller. Therefore, each controller must be configured. (Be sure that both controllers are configured in the same manner, e.g. identical community names.)

To add the K2 Lx0 RAID to the NetCentral tree view:

1. If you have not already done so, log on to NetCentral manager with NetCentral administrator-level access rights. Refer to the *NetCentral User Guide* for information about logging on and application security.
2. In NetCentral, click **File | New | Device**.

   The Add Device dialog box opens.



3. Enter the K2 Lx0 RAID IP address.

   By default, the RAID device uses the community name `public`. If your site's security policies dictate using a different SNMP community name, contact your Grass Valley representative.

4. Select **K2 RAID Lx0** in the Device Type drop-down list, then click **OK**.

   NetCentral Manager attempts to communicate with the RAID device. When contact is made, the RAID device is added to the NetCentral tree view and NetCentral automatically sets the SNMP trap destination address on the RAID. This may take a few moments.

5. In the tree view, hover your cursor over the RAID. The RAID's SNMP agent is on the controller, so if the RAID chassis has two controllers, the chassis is represented as two devices in NetCentral. Identify the tooltip displayed, and proceed as follows:

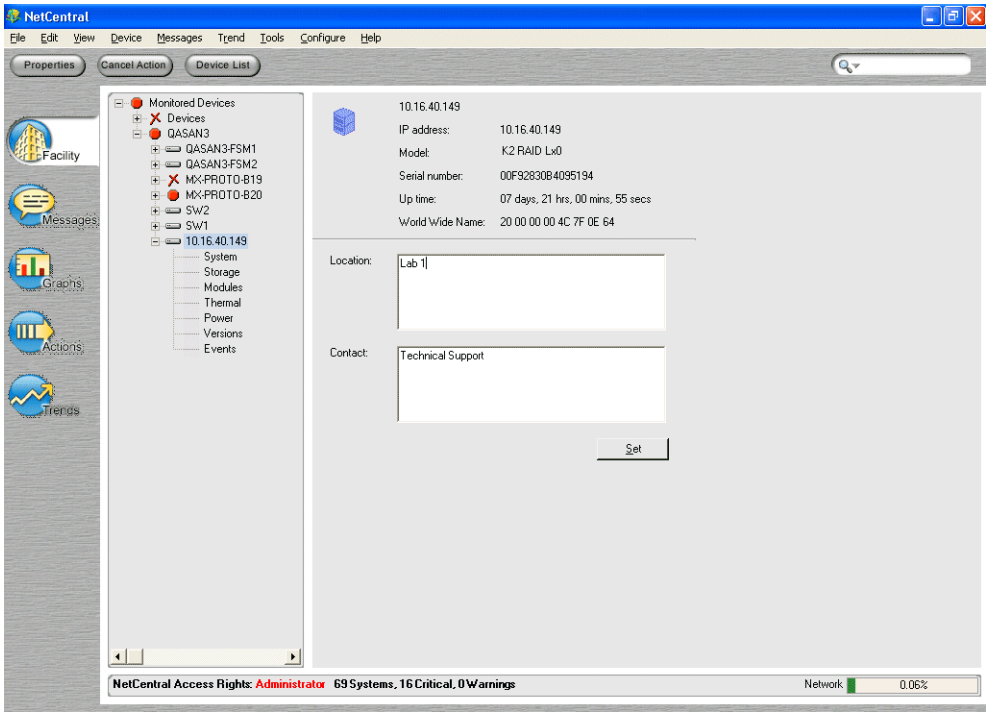
   - If the tooltip only identifies the device as a K2 Lx0 RAID and has no message regarding trap validation, it means that NetCentral successfully entered the IP address of the NetCentral server as an SNMP trap destination on the RAID and then successfully received a test trap message from the device. A RAID with this tooltip is fully monitored by NetCentral and requires no further steps.
   - If a K2 Lx0 RAID has a "…Traps not validated…" tooltip message, one of the following conditions applies. In the Messages view, check the K2 Lx0 RAID's SNMP Trap Target Status message to determine which condition applies and then proceed as indicated:
     - NetCentral is in the process of testing the K2 Lx0 RAID to validate its SNMP trap messages. After a few minutes check the RAID again for a change in its SNMP Trap Target Status message reflecting the test results.
     - NetCentral tried to configure SNMP properties but was not successful. In most cases this means you must configure SNMP properties manually. You can set the SNMP trap destination by launching the Grass Valley Storage Utility from within the K2 System Configuration application. Refer to the *K2 Storage System Instruction Manual* for procedures. To configure other SNMP properties, contact your Grass Valley representative.

Monitoring the K2 Lx0 RAID with NetCentral

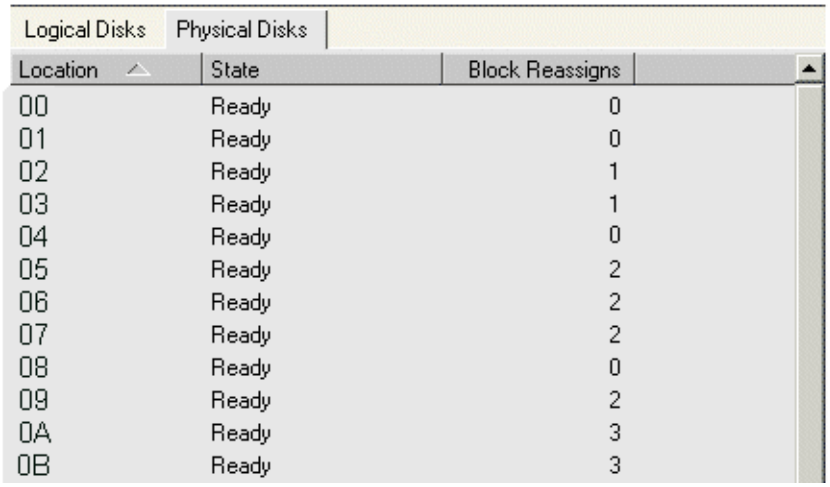
After completing the setup procedure, you are ready to monitor the K2 Lx0 RAID using NetCentral. Most monitoring features are common for all types of monitored devices and are explained in the *NetCentral User Guide*. The monitoring features explained in the following sections are unique to the K2 Lx0 RAID.

Monitoring K2 Lx0 RAID Storage

1. In NetCentral, select **Facility**.
2. Expand the NetCentral tree view and locate the K2 Lx0 RAID device icon.

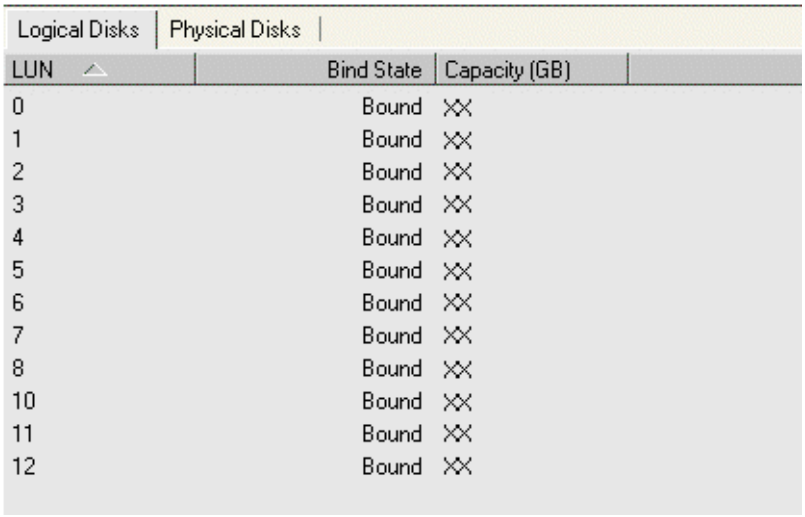


3. Expand the K2 Lx0 RAID device icon, then select the **Storage** subsystem.
4. Click the **Physical Disks** tab.



This subsystem property page provides information on the disks in the K2 Lx0 RAID chassis. The disk numbering is reported in hex.

5. Click the **Logical Disks** tab.



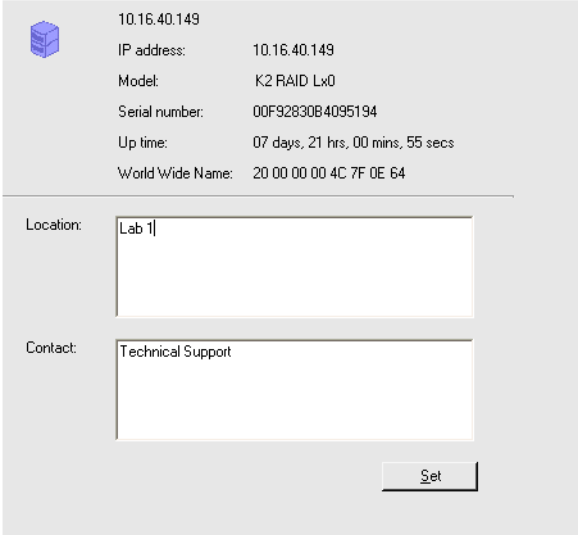
This subsystem property page provides information on logical drives that provide the media storage. A logical drive consists of one or more physical disks that are bound as a logical unit.

Monitoring K2 Lx0 RAID System

The System subsystem displays the basic information about the K2 Lx0 RAID system. You can include information such as the location of the system and the contact person.

1. In NetCentral, select **Facility**.
2. Expand the NetCentral tree view and locate the K2 Lx0 RAID device icon.

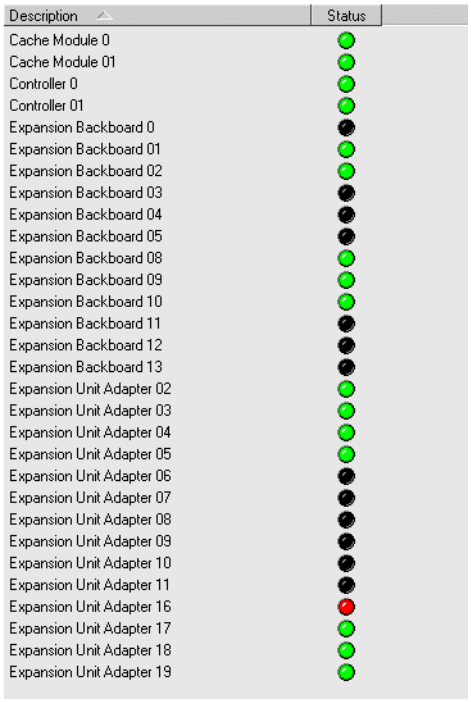
3. Click on the **System** subsystem.



Monitoring K2 Lx0 RAID Modules

The Modules subsystem displays the information about the K2 Lx0 RAID controllers, power, network, and expansion adapters. If the status is green, NetCentral is able to monitor the module. If the status is red, NetCentral has detected a problem. If the status is black, NetCentral is unable to detect anything for the module.

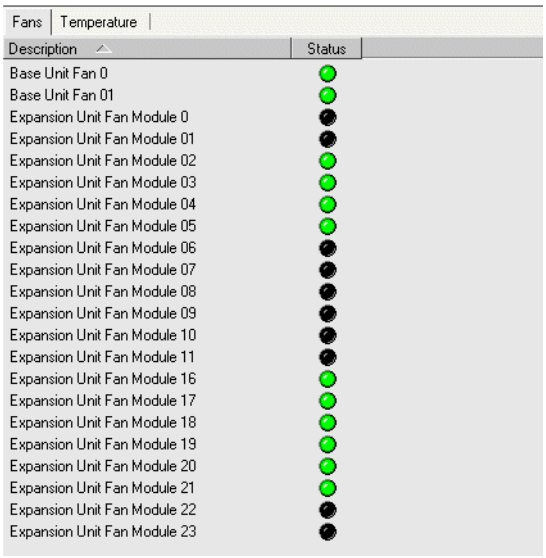
1. In NetCentral, select **Facility**.
2. Expand the NetCentral tree view and locate the K2 Lx0 RAID device icon.
3. Click on the **Modules** subsystem.



Monitoring K2 Lx0 RAID Thermal

The Thermal subsystem displays information about the status of the RAID device's fans and temperature.

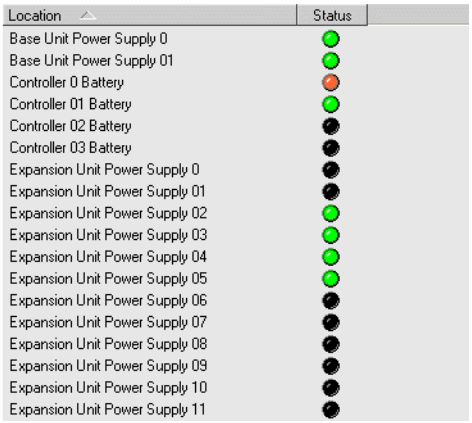
1. In NetCentral, select **Facility**.
2. Expand the NetCentral tree view and locate the K2 Lx0 RAID device icon.
3. Click on the **Thermal** subsystem.
4. Select either the Fans or the Temperature tab.



Monitoring K2 Lx0 RAID Power

The Power subsystem displays the information about the K2 Lx0 RAID power supplies. If the status is green, the power supply is connected and NetCentral is able to monitor it. If the status is red, NetCentral has detected a problem. If the status is black, NetCentral is unable to detect anything.

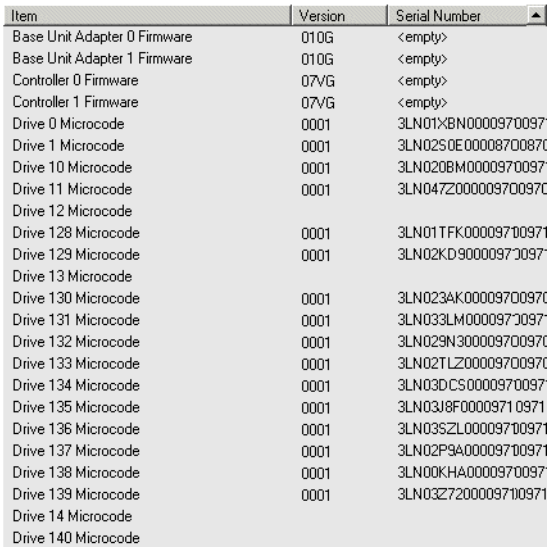
1. In NetCentral, select **Facility**.
2. Expand the NetCentral tree view and locate the K2 Lx0 RAID device icon.
3. Click on the **Power** subsystem.



Monitoring K2 Lx0 RAID Versions

The Versions subsystem displays information about the specific version of each controller, disk, or network or expansion adapters. If applicable, the serial number is also listed.

1. In NetCentral, select **Facility**.
2. Expand the NetCentral tree view and locate the K2 Lx0 RAID device icon.
3. Click on the **Versions** subsystem.



Item	Version	Serial Number
Base Unit Adapter 0 Firmware	010G	<empty>
Base Unit Adapter 1 Firmware	010G	<empty>
Controller 0 Firmware	07VG	<empty>
Controller 1 Firmware	07VG	<empty>
Drive 0 Microcode	0001	3LN01XBN0000970097
Drive 1 Microcode	0001	3LN02S0E00008700870
Drive 10 Microcode	0001	3LN020BM0000970097
Drive 11 Microcode	0001	3LN047Z000009700970
Drive 12 Microcode		
Drive 128 Microcode	0001	3LN01TFK00009700971
Drive 129 Microcode	0001	3LN02KD900009700970
Drive 13 Microcode		
Drive 130 Microcode	0001	3LN023AK0000970097
Drive 131 Microcode	0001	3LN033LM0000970097
Drive 132 Microcode	0001	3LN029N300009700970
Drive 133 Microcode	0001	3LN02TLZ000097009700
Drive 134 Microcode	0001	3LN03DCS0000970097
Drive 135 Microcode	0001	3LN03J8F000097109 71
Drive 136 Microcode	0001	3LN03SZL00009700971
Drive 137 Microcode	0001	3LN02P9A00009700971
Drive 138 Microcode	0001	3LN00KHA0000970097
Drive 139 Microcode	0001	3LN03Z720000971 0971
Drive 14 Microcode		
Drive 140 Microcode		

Monitoring K2 Lx0 RAID Events

The Events subsystem displays information about the specific events such as error messages or changes in the power states and link connections of the K2 Level 10, 20, 30, or L40 RAID.

The information displayed in the Events subsystem is used by Grass Valley Service representatives. To send this information to a Grass Valley representative, copy the information in the Description window and paste it into Notepad. Save it as a Text (*.txt) file.

1. In NetCentral, select **Facility**.
2. Expand the NetCentral tree view and locate the K2 Lx0 RAID device icon.
3. Click on the **Events** subsystem.

Monitoring K2 Lx0 RAID Trends

Click the **Trends** button to see the Trends view. The Trends view pulls specific device parameters and provides you with a daily, weekly, monthly, and yearly view of selected parameters. The following table lists the Trends view graphs for the K2 Lx0 RAID and provides explanations:

Name of Trend graph	Explanation of Trend graph
System\ Up Time	Up time essentially is an ever incrementing value that indicates the system is up and running and is measured as an absolute value in minutes; given that the polling rate is more than a minute. Though the value itself is of less significance, it is the ramp graph obtained by plotting these values that proves significant where a downward edge on the ramp indicates a device going offline and a flat line at zero indicating the device downtime. Multiple ramps indicate how often the device was taken down for activities like maintenance or servicing, or simply how many times it was restarted to handle a complete device failure. If the ramps do not coincide when the device was taken down, it could indicate conditions like automatic restarts, and the device may need attention.
Storage\Disk Block Reassigns	Block Reassigns is the count of inaccessible disk blocks reassigned by the controller to another accessible block on the physical disk. When the controller cannot access a particular disk block with a specific number of retry attempts, it reassigns the “inaccessible” block to another block on the physical disk. When the controller performs such a disk block reassignment, all disk access requests made for that block are henceforth redirected to the reassigned block. The controller can only allow a finite number of block reassignments on a physical disk before it disables the physical disk. However the number itself depends on the particular kind of drive, controller hardware or firmware. Typically this should be a zero value. Disks with an increasing number of block reassignments will tend to project disk IO latencies and is typically indicative of disk replacement.

Name of Trend graph	Explanation of Trend graph
Storage\Disk Media Errors	Disk Media Errors is the count of errors encountered by the disk controller when accessing disk blocks on the physical disk. Often the controller can access the disk block with a specific retry policy. When a disk block cannot be accessed via the retry policy the controller reassigns the block. In either case, disk errors are indicative of disk IO latencies, and an increasing number could potentially indicate disk replacement. Typically this should be a zero value. Note that a single “bad block” being repeatedly accessed could cause this value to increase, so there is no definite rule that guarantees that a certain number of errors occurring within a specific time interval would warrant a disk replacement. This is simply provided to view the error occurrence pattern for a physical disk so it could related to other system behaviors.

Troubleshooting the K2 Lx0 RAID with NetCentral

NetCentral reports status, warnings, and alarms using messages that are easy to understand. Suggested corrective actions are presented along with failure information. If you have any trouble interpreting any of the problems or suggested solutions, contact Grass Valley Support.

For more information

For more information about NetCentral, how it works, and how to configure and use its features, refer to the *NetCentral User Guide*. You can find an online Help version of this manual on the NetCentral Help menu.