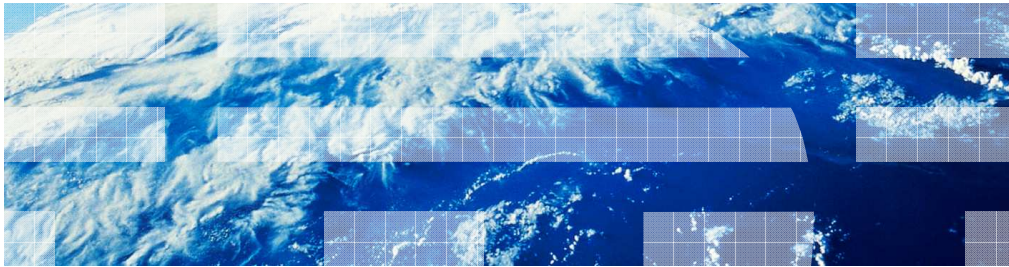IBM

IBM Tivoli Netcool Performance Manager 1.3 Wireline Component

Disk usage server

This IBM Education Assistant module describes the disk usage server in IBM Tivoli® Netcool® Performance Manager Wireline Component.

Disk usage server (1 of 2)

Physical View	Operating System	Status
☐ 📁 Hosts		
☐ 🖳 Host a	SOLARIS	
🔵 Channel Manager		⚡ Configured
🔵 Collector BCOL 1.1		⚡ Configured
🔵 Complex Metric Engine 1.1		⚡ Configured
🔵 CORBA Naming Server		⚡ Configured
🔵 Database Configurations		⚡ Configured
🔵 DataChannel 1		⚡ Configured
🔵 DataMart 1		⚡ Configured
🔵 DataView		⚡ Configured
🔵 Disk Usage Server #1		⚡ Configured
🔵 Log Server		⚡ Configured
🔵 Plan Builder		⚡ Configured
🔵 TIP a		⚡ Configured
☐ 🖳 Host secondHost	SOLARIS	
🔵 DataMart 2		⚡ Configured
🔵 Disk Usage Server #1		⚡ Configured

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The disk usage server is responsible for maintaining the properties that are needed for quota management (flow control) of an entire DataChannel. You can only add DataChannel components to hosts that include a disk usage server.

The disk usage server runs in the Application Manager (AMGR) process on the host. This host is where the assigned DataChannel components of the disk usage server exist. The disk usage server is started automatically with the AMGR.

The DataChannel components coordinate their disk utilization with the disk usage server that is assigned to those components. Multiple disk usage servers can be configured per host, and multiple DataChannel directories can exist on a single host.

Disk usage server (2 of 2)

- A disk usage server process is assigned to a DataChannel root directory
- The disk usage server process is managed by the AMGR
- Disk usage server parameters determine the File system low limit (FSLL) and disk quotas for the components it manages

Disk usage server

The disk usage server is assigned a DataChannel directory to monitor. A DataChannel can have more than one disk usage server assigned to it. There are two reasons for configuring multiple disk usage servers for a specific DataChannel:

Disk space is running low. Disk space can be affected by the addition of a new DataChannel component. In this case, you can add a new file system that is managed by a new disk usage server.

Separate disk quota management. You might want to separately manage the quotas that are assigned to discrete DataChannel components.

You can use the Topology Editor to assign the management of a new file system to a disk usage server. To do this, you edit the local_root_directory property of that disk usage server. Then, you can add DataChannel components to the host and assign the component to a disk usage server. To do this, you edit the DUS_NUMBER property inside the component.

The disk usage server is an application that is managed by the AMGR. Multiple instances of the disk usage server can be managed on a host by the AMGR.

The disk usage server manages the use of file system resources. It allocates space, based on the requesting disk space quota of the component. It also manages the use of file system space by its components when a file system low limit is reached.

File system monitoring and control

- The disk usage server checks file system space every 60 seconds by default
- Components request additional disk space from the disk usage server
- The disk usage server acts depending on the quota that has been set and the current file system low limit
- Depending on the severity of the disk utilization issue:
    - Done files can be deleted
    - Older output files can be deleted
    - Components other than LDR and DLDR can be stopped from acquiring disk space
    - LDR and DLDR can be stopped from acquiring disk space

Disk usage server

The disk usage server checks file system space every 60 seconds by default. Components request additional disk space from the Disk Usage Sever.

Before using more disk space, each component checks with the disk usage server for that host to see if it can write to disk in that root directory. The disk usage server for that root directory responds yes or no, based on the amount of disk space used in that root directory.

The disk usage server depends on the quota that has been set and the current File System Low Limit. You can specify a quota for each datachannel root directory on a host. Each component can coordinate its disk consumption activities with a disk usage server. This server is in the AMGR for that host. All communication between components and the disk usage server inside AMGR are done using CORBA.

Depending on the severity of the disk utilization issue, you can:

> Delete done files

> Delete older output files

> Stop components other than LDR and DLDR from acquiring disk space

> Stop LDR and DLDR from acquiring disk space

The disk usage server employs different sets of constraints, based on the percent utilization of the file system in its control. The disk usage server can coordinate the deletion of older files from the components under its control. It can reject requests for space if disk utilization is near maximum.

When the utilization is at 99% or greater, the disk usage server places the components in its control into Flow Control. Nothing can acquire additional disk space. At up to 90% utilization of the disk quota, the disk usage server allows the LDR and DLDR to acquire space. Data can flow to the database if the database itself is communicating.

Metric data flow control

When the disk usage server reaches its FSLL, it asserts flow control. If disk space is not available, data output stops
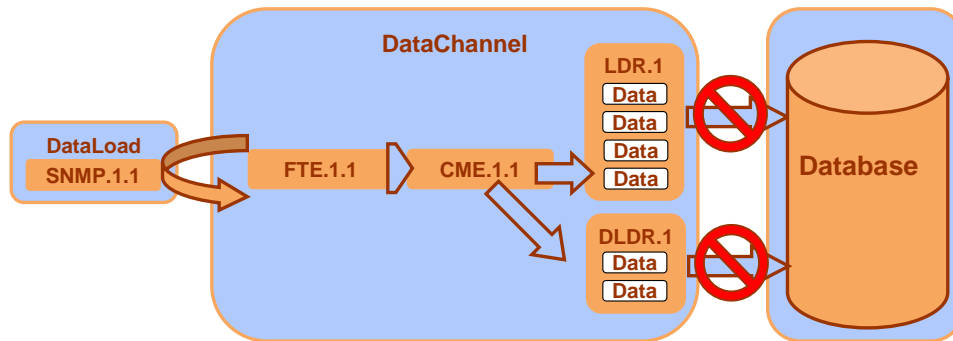
Flow control is asserted when the disk usage server reaches 99% of its quota, or when the file system low limit (FSLL) is met. If not enough space is available to satisfy the quota or FSLL, the disk usage server interrupts operation and stops processing data. Data is never deleted from the **/state** directory to provide disk space.

When troubleshooting, the DataChannel in flow control is typically not the source of the problem. The process or application immediately downstream (causing the backup) is typically at fault.

In this example, connectivity to the database is lost. The files in the components upstream from the database (LDR and DLDR) will eventually back up until the quotas and FSLL are reached. After they are reached, the disk usage server exerts flow control. The **proviso.log** located in the **~/datachannel/log** directory indicates that flow control has been asserted.

Adding a disk usage server (1 of 2)

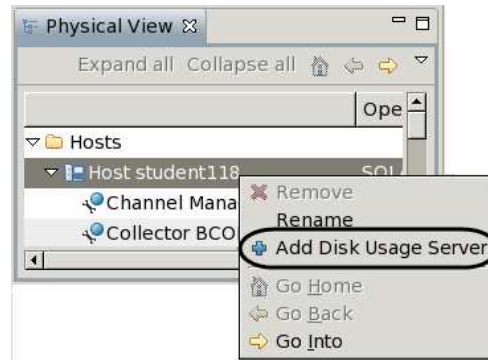The disk usage server is assigned to a host in the Physical view
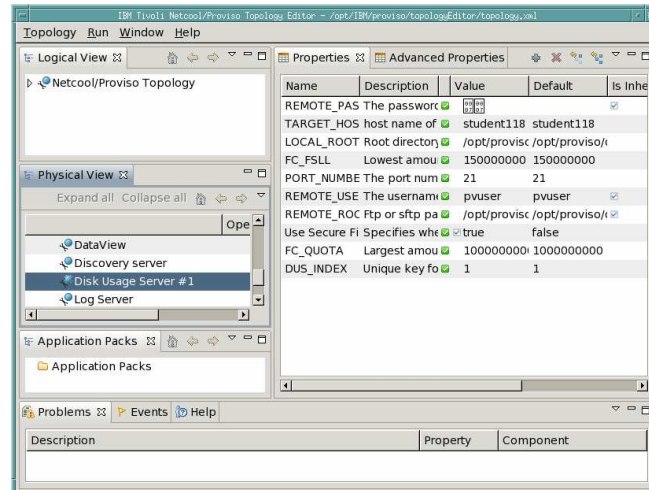
The disk usage server is created on a host and is assigned a set of DataChannel components to manage. It manages the space utilization of the FTEs, CMEs, LDR, DLDR, and BCOLs on a DataChannel. It does not manage the space utilization of SNMP DataLoad components.

You must run the topology editor to add a disk usage server or to modify the parameters of an existing disk usage server. You can start the Topology Editor using the launchpad.sh found in the installation directory. The Topology Editor must be run as root.

Adding a disk usage server (2 of 2)

The disk usage server is assigned to a specific host in the Physical view of the Topology editor. You can right-click a specific host name in the Physical view to add the server.

Disk usage server properties

Name	Description	Value	Default
REMOTE_PASSWORD	The password ☑	00 00 07 07	
TARGET_HOST	host name of s ☑	student118	studen
LOCAL_ROOT_DIRECTORY	Root directory ☑	/opt/provisc	/opt/pr
FC_FSLL	Lowest amoun ☑	150000000	150000
PORT_NUMBER	The port numb ☑	21	21
REMOTE_USERNAME	The username ☑	pvuser	pvuser
REMOTE_ROOT_DIRECTOF	Ftp or sftp pat ☑	/opt/provisc	/opt/pr
Use Secure File Transfer	Specifies whet ☑ ☑true		false
FC_QUOTA	Largest amour ☑	1000000000	100000
DUS_INDEX	Unique key for ☑	1	1

Several properties apply to the disk usage server.

LOCAL_ROOT_DIRECTORY is the DataChannel root directory that the disk usage server manages.

FC_FSLL is the file system low limit.

FC_QUOTA is the maximum disk space usage allowed for the component by this disk usage server.

DUS_INDEX is the disk usage server number.

After you add or modify the disk usage server and its properties, you must save the topology. Then, you must use the deployer to deploy it.

Summary

Refer to the IBM Tivoli Netcool Performance Manager Wireline Component Installation Guide for more information about deploying a disk usage server

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This concludes the training module for IBM Tivoli Netcool Performance Manager 1.3 Wireline Component disk usage server.

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