

# HP Insight CMU - Mellanox UFM™ Connector

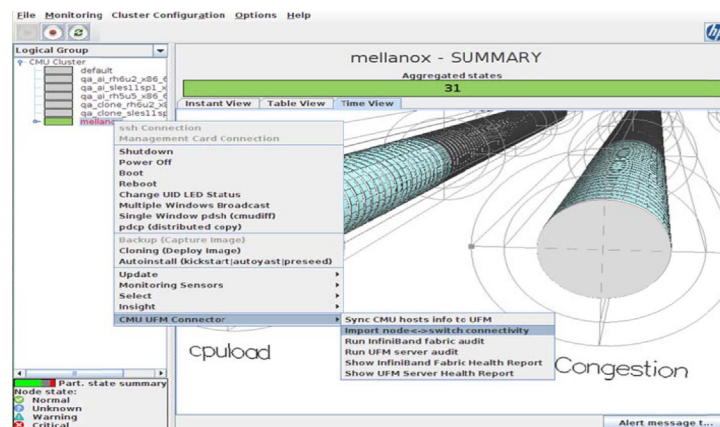
## Introduction

Management software is a critical component in today's clusters. As clusters become larger, more complex and business critical, they require a proper end-to-end means to monitor, provision and control them.

Traditionally, cluster administrators have had to manage the server and network sides separately without visibility into network performance and health. This results in manual, time consuming root cause analysis of events, and relatively long duration till resolution.

The CMU-UFM Connector combines HP's Insight CMU server information with Mellanox's Unified Fabric Manager™ (UFM™) fabric information. This enables the cluster administrator to view, in one location, the server and network information which greatly reduces operational efforts and duration till resolution.

The CMU-UFM Connector is an add-on software package installed on the HP-CMU management node.



**Figure 1.** New fabric actions now available with CMU-UFM Connector

## Unified Cluster View

The CMU-UFM Connector synchronizes host names and IPs, thus creating a consistent cluster database for the cluster administrator. This enables correlating between server and network monitored data and events. Furthermore, information from both environments is readily correlated to the same cluster entities.

## Agentless Congestion Monitoring

The CMU-UFM Connector makes congestion information available to CMU without the need for local agent, indicating to the cluster administrator of the nodes that suffer from traffic congestion. The information can now be easily correlated to server behavior metrics which significantly improves the ability to identify application bottlenecks and to perform root cause analysis of poor cluster performance incidents.

The node congestion is displayed in CMU via a new congestion counter named "IB\_Congestion". The counter can be monitored in near real-time or historically.

## Fabric Events

The CMU-UFM Connector generates a fabric-related node status in CMU indicating to the cluster administrator that the node has fabric alerts/issues. This introduces a whole new dimension of visibility on the same central CMU console.

The fabric status report appears in CMU as a new, regular counter named "UFM Severity". The counter can be monitored in near real-time or historically.

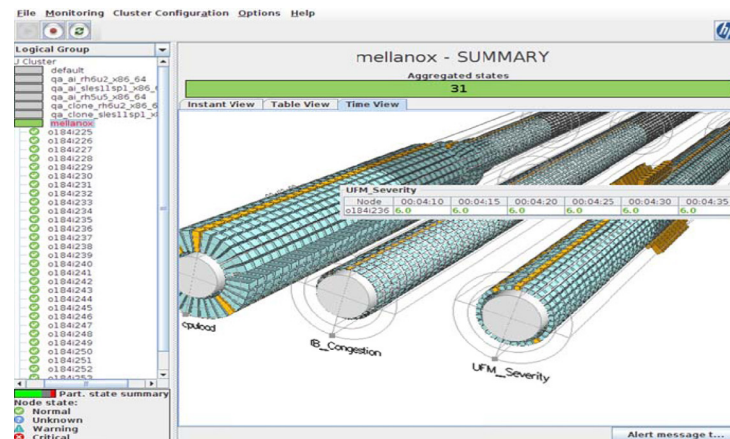


Figure 2: UFM's fabric data displayed in CMU

## Fabric Topology Awareness

The CMU-UFM Connector imports the fabric topology from UFM into CMU. The fabric connectivity is represented as CMU user groups. Each group contains the nodes connected to a specific leaf switch in the fabric. It helps to quickly identify cabling or CMU setup errors, as well as non-optimized job distribution.

## Fabric Health Report Launch from CMU

When fabric alerts appear or cluster configuration inconsistencies are detected, the cluster administrator may wish to further drill down into the fabric as part of debug and diagnostics. With the CMU-UFM Connector the administrator can launch UFM diagnostic tools from CMU.

Two new CMU menu entries have been added: "Run UFM Fabric Health Report" and "Launch UFM Fabric Health Report". When selected, a detailed report of the underlying fabric is generated and displayed to the user. Further fabric analysis and configuration can be conducted using native UFM access.

## About HP CMU

A simple and affordable cluster toolkit, HP CMU is used to configure and install cluster operating environments, to monitor cluster and node metrics and to remotely manage resources. HP CMU serves as a powerful tool for installing Linux software images, including middleware such as Message-Passing Interface (MPI) and job schedulers. HP CMU can be used anywhere to manage a number of standalone systems similar in hardware and software configuration.

## About Mellanox UFM

Mellanox's Unified Fabric Manager (UFM) is a powerful platform for managing scale-out computing environments. UFM enables data center operators to efficiently monitor and operate the entire fabric, to boost application performance and to maximize cluster utilization. Furthermore, it provides an open and extensible object model and includes a service oriented architecture that exposes a rich set of web services. These UFM features enable integration with service orchestrators and resource managers to manage the next generation fabrics.

## Availability

The CMU-UFM Connector can be obtained from Mellanox support site at: [http://mellanox.com/content/pages.php?pg=support\\_index](http://mellanox.com/content/pages.php?pg=support_index)



350 Oakmead Parkway, Suite 100, Sunnyvale, CA 94085  
 Tel: 408-970-3400 • Fax: 408-970-3403  
[www.mellanox.com](http://www.mellanox.com)