

UniCluster v 4.1

The Superior Alternative for HPC Infrastructure Management

UniCluster 4.1 Highlights

- Application Kits including:
 - Intel Cluster Checker with ICR certification
 - Cluster Migration Pack
 - UniPortal (powered by EnginFrame)
 - UniCloud
 - UniSight
 - Grid MP
 - DataCatalyst
- Node Templates
- Integrated Monitoring GUI
- Bare Metal Provisioning
- Flexible Node Installs
- Yum Package Management
- Extensions to public cloud services

Why UniCluster?

- **Complete, fully integrated stack**
All components are pre-integrated to operate together.
- **Community-enabled open source**
Users gain access to a vibrant community for knowledge sharing and support.
- **Single path for support**
Unlike other products, UniCluster provides support for all components.
- **Easy to acquire and implement**
Installation is fast and easy, with a simple, seamless upgrade process.

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Overview

UniCluster 4.1 sets a new standard for infrastructure management. This ground breaking product provides a superior alternative to commercial cluster schedulers by integrating a range of technologies into a single, unified cluster stack – delivering far more capabilities than a scheduler alone.

UniCluster 4.1 includes expanded systems management functionality that automates repetitive and homegrown administrative tasks. By providing an integrated approach to cluster configuration, deployment, usage and upgrade, UniCluster reduces time to value and total cost of ownership for the existing infrastructure.

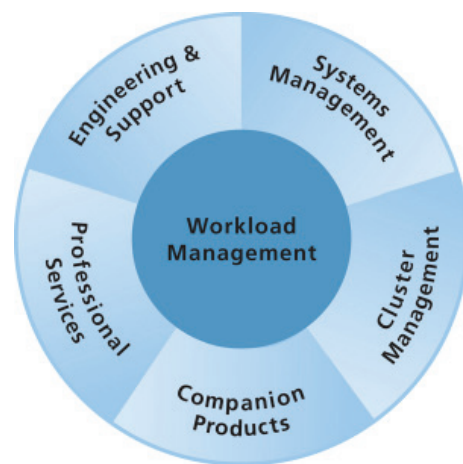
UniCluster can also be used to build dedicated clusters in the public cloud, extending a company's overall computing capacity.

What's New in 4.1?

- **Bare metal provisioning for simplified node management:** With UniCluster 4.1, cluster nodes can easily be added, modified or removed. The Cluster Installer manages all OS installations. In addition, 4.1 offers packaged, diskless or imaged node installs.
- **Template-based node configuration and management:** UniCluster 4.1 makes managing cluster nodes at once a simple and powerful capability. With 4.1 users can configure all nodes (head, compute, login, workstation) from a defined template, and node groups can be automatically configured with the same packaging and networking.
- **Key applications and tools packaged as Kits:** UniCluster 4.1 includes numerous options to extend the power of your base cluster. UniCluster Kits automatically install and configure software for the whole cluster -- not just individual nodes. Among the technologies packaged as 4.1 Kits are: Nagios®, Cacti®, MPI Libraries, SGE, OFED (Open Fabrics Enterprise Distribution), and Virtualization Kit. Optional commercial kits (called Pro Packs) include Intel® Cluster Checker, Cluster Migration, UniPortal, UniSight, UniCloud, Grid MP, DataCatalyst, and more.
- **Virtualization capabilities:** UniCluster 4.1 offers node provisioning of Xen® enabled Linux®, allowing Xen® images to run on cluster nodes.
- **Simplified package management and updates:** UniCluster 4.1 is fully integrated with the yum package manager, ensuring all cluster nodes are up to date with the latest software and security patches.
- **Integrated monitoring GUI:** The UniCluster 4.1 GUI collects data from SGE, Ganglia & ARCO (optionally) to enable easier and more powerful cluster monitoring. Capabilities include job monitoring, cluster & node status, historical job data, job filtering, cluster status, and secure access.

Get Started Today!

- Download UniCluster 4.1: www.grid.org/downloads
- Subscribe online: www.univaud.com/subscribe



Additional Features and Components

- Automated node configuration including
 - Disk Partitioning
 - UniCluster Pro-Packs/Kits
 - Networking
 - Optional rpm packages
 - Operating System
 - Custom Configuration Scripts
 - Kernel and Initrd
- Automated configuration of operating system services
 - DNS (Domain Name System)
 - Hosts files
 - Shared Network Filesystem (nfs)
 - Firewall
 - Software Update (yum)
 - Configures and Manages DHCP services
 - Configures HTTPD server
 - Passwordless Remote Login
- Distributed Resource Manager
 - Sun Grid Engine installed and configured
- MPI Libraries & Tools
 - Modules tool installed and configured to support multiple MPI environments
 - Open MPI
 - MPICH 1,2
 - MVAPICH 1,2
 - MPI libraries configured for C/C++, Fortran 77, 90
 - Documentation on how to compile and run MPI applications
- Application and Tools packaged as Kits
 - MPI Libraries
 - SGE
 - OFED (Open Fabrics Enterprise Distribution)
 - HPC Tools
 - Xen® Kit
 - Intel® Cluster Checker Kit
 - UniCluster Grid Kit
 - Intel® Runtime Library Kit
- Cluster Monitoring
 - Ganglia Kit for monitoring cluster nodes
 - Cacti® Kit for monitoring cluster nodes & batch system
 - Nagios® Kit for monitoring cluster services
- Operations Tools
 - Nagios® Kit for service event management and reporting
 - BMC (Base Management Controller) tools for configuring and using BMC on nodes
 - Remote console access using IPMI to BMC
 - Parallel Distributed Shell (pdsh) for command line operations
- Cluster File Synchronization
 - Automated synchronization of common system files (/etc/passwd, /etc/groups, /etc/fstab)
 - File sync to groups of nodes with the same template
 - Any file can be sync'ed across the cluster or groups
- Cluster Package Management & Updates
 - Integrated with yum package manager
 - Cluster package synchronization by groups with the same template
 - Updates from yum repositories
 - Pre-packaged Kits with Applications and Tools designed for a cluster environment

Value and Benefits

Reduced Time to Value

- Get up and running faster
- Streamline software acquisition, installation, configuration and setup
- Spend less time on manual administrative tasks

Reduced TCO

- Reduce costly job scheduling maintenance by 75% or more
- Eliminate unnecessary software license investments
- Reduce intensive DIY activities

Increased Operational Efficiency

- Simplify processes to optimize personnel bandwidth
- Quickly detect, determine and resolve performance faults

Improved Quality and Innovation

- Refocus high-value personnel on core competencies
- Increase scope and precision
- Expand capacity to innovate

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