

Novell® ZENworks® Orchestrator

Intelligent data center automation to manage heterogeneous resources, control costs, minimize risks, and maximize value

At a Glance

Novell® ZENworks® Orchestrator helps you maximize the value of your data center technologies by enabling your physical and virtual resources to work better together, automating the provisioning of these resources to meet your constantly changing needs. It interacts with your configuration and storage resource management servers to manage physical compute and storage resources and the relationships between them. It also manages your virtual resources, controlling the entire lifecycle of each virtual machine. ZENworks Orchestrator uses intelligent automation to enable you to flexibly manage your heterogeneous data center resources in alignment with your IT business requirements to control costs, minimize risks, and maximize value.

Benefits

- + Automates data center management operations so workloads for physical and virtual resources align with business priorities and IT tasks perform according to policy every time
- + Automatically distributes workloads across multiple devices to deliver maximum performance from available resources
- + Intelligently distributes tasks to the resources best equipped to perform the work
- + Manages mixed environments—from disparate operating systems, to software applications to hardware devices
- + Accurately accounts how resources are utilized and then manages internal invoicing for the use of those resources, as well as provides auditing, reporting and event logging for jobs and provisioning
- + Provides complete virtual machine lifecycle management, giving you the ability to confidently deploy and manage VMware*, Microsoft*, or XEN* virtualization solutions in your data center

Comprehensive Orchestration of Today's Complex Data Center

ZENworks Orchestrator is a third-generation orchestration engine built from the ground up to meet the requirements of on-demand computing. Unlike competing solutions, limited to providing a global job scheduler and workload manager to orchestrate jobs, ZENworks Orchestrator orchestrates the operations of today's complex, sophisticated data centers in all of the following areas:

- + **Resource management capabilities** include automated discovery of resource attributes, automatic detection of new resources, management of online and offline resources, and integrated resource provisioning.

- + **Job and workload management** provides management of grid-based applications and enables high performance computing workloads to be distributed for parallel execution for maximum efficiency, as well as automated high performance multi-cast data distribution to remote processing resources.
- + **Dynamic and automated provisioning** of multi-vendor virtual resources to fixed or shared resources within the data center, including the ability to optimize resource placement, allocation, and execution.
- + **Virtual machine lifecycle management** provides powerful multi-vendor dynamic virtual machine automation services, including resource management, inventory services, heterogeneous VM support, and virtual machine warehousing.
- + **Policy management** leverages extensible policy definition language for governing how workloads and resources are matched. Powerful constrain and rules-based execution policies make it simple to automate the reservation of resources. Reservation of shared resources can also be pre-empted from lower priority tasks, ensuring that critical operations are performed to meet service-level-objectives. In addition, resources can be scheduled, triggered by events, and dynamically provisioned based on utilization and performance metrics.
- + **Accounting and auditing** logs all activity for reporting purposes, delivers aggregated cost accounting for managed resources, provides auditing and event logging for all provisioned jobs, enforces license limit policy for compliance, and provides reporting of virtual resources based on time used or compute processing consumed in a shared resource pool.
- + **Real-time availability** provides business continuity, disaster recovery, and capacity on-demand capabilities.

ZENworks Orchestrator Operations

Novell ZENworks Orchestrator is comprised of the following main components:

- + **ZENworks Orchestrator Server** acts as the gateway between enterprise applications and resource servers, providing the primary functions of managing data center computing resource servers and the jobs submitted from various applications to run on those computing resources, dynamically allocating and balancing the workloads on those resources.
- + **ZENworks Orchestrator Agent** is installed on all computing resources to be managed and runs applications under the management of the Orchestrator Server.
- + **ZENworks Orchestrator Client** enables the administration, troubleshooting, initiation, changing, or shutting down of server functions on computing resources. The client also monitors all



managed computing resource job activity and provides facilities to manage application jobs.

- + **ZENworks Virtual Machine Builder** provides the ability to create and build virtual machines on a variety of different servers according to the precise specifications required for your data center, including parameters such as processor, memory, hard drive space, operating system, virtualization type, and more.
- + **ZENworks Virtual Machine Warehouse** contains the virtual machines you have created and discovered. When a virtual machine is checked into the warehouse, it is brought under resource control. As a result, any time modifications are made to a virtual machine, whether in a development, testing, or production environments, the modified versions can be checked back in to have it assigned the next version number. It also allows the designation of Gold Masters for versions of virtual machines that have been certified for deployment into the production environment.
- + **ZENworks Orchestrator Console** provides administrators a centralized and easy-to-use graphical interface for managing, troubleshooting, initiating, changing, or shutting down resources and jobs, as well as monitoring job activity.
- + **ZENworks Orchestrator User Portal** provides end users with the ability to administer and run jobs (assigned by the administrator) among the managed computing resources.

Key Features of ZENworks Orchestrator

ZENworks Orchestrator uses intelligent automation to enable you to flexibly manage your heterogeneous data center resources in alignment with your IT business requirements to control costs, minimize risks, and maximize value. The following represent key features that the solution leverages to enable you to accomplish these objectives.

Environment Discovery

- + **Configuration information discovery** - ZENworks Orchestrator leverages ZENworks Asset Management to automatically discover hardware and software assets including servers, network devices, applications and storage devices. It stores the discovered data in a centralized database that serves as the authoritative source for the data center's assets.

Server Management

- + **Heterogeneous platforms** - Supports all major server operating systems, including all Windows* server operating systems, SUSE® Linux, Redhat* Linux*, Solaris*, HP-UX*, AIX*, and OSX* 10.
- + **Seamless physical and VM management** - Supports management of VMWare ESX & GSX hypervisors, XEN, and Microsoft Virtual Server. It automatically discovers virtual machine hosts and virtual machine hard disks, and provisions virtual machine hard disks to the appropriate hosts.
- + **Configuration management** - Supports multi-tenancy operations, to include support for campus, off-site and MSP operational models. It can support communication over web friendly protocols to remote agents or can be configured to support satellite server configurations.
- + **Provisioning** - Supports dynamic provisioning of physical and virtual systems based on performance data including, memory, disk, network, and CPU utilization metrics. It also includes trigger based provisioning with the ability to incorporate triggers from a variety of external and third party systems.

- + **Policy enforcement** - Utilizes policy to automatically re-mediate any variance in the configuration of compute node configurations and ensure proper run-time configuration.
- + **Audit** - Provides a complete audit trail for configuration and operations performed by the system.

IT Process Automation

- + **Workflow automation** - Integrates several workflows for the automation of provisioning composite applications across shared and fixed resource pools. This ensures that service levels are maintained as demands are increased. Workflows can be arranged based on different constraints and hierarchy, allowing IT administrators to establish automated control of the process flow across multiple systems based on time, workload, user, service level, and resource types.
- + **Threshold based automation** - System and SNMP based events can trigger actions, as well as CIM based events. The event engine can be extended using XML-based or Python-based policy language definitions.
- + **Policy-based automation** - Comprehensive set of built-in policies to automate IT administrative processes. ZENworks Orchestrator also has more than 50 automated workflows specific to high performance computing and virtualized environments.

Change control

- + **Service stack change tracking** - Utilizes its resource broker to provision the infrastructure to meet service level objectives and its policy engine can be leveraged to optimize the service stack based on a variety of constraints, including performance, quota, user, resources, demand, and more.
- + **Virtualized environment change detection and control** - Provides "just in time" detection of virtualized environments, as well as the ability to react to changes happening in the virtualized layer by dynamically provisioning or de-commissioning workloads based on Service Level Objectives (SLO) defined in the policies governing the service.

Specifications and System Requirements

For detailed product specifications and system requirements, visit <http://www.novell.com/products/zenworks/orchestrator/techspecs.html>.

Purchasing ZENworks Orchestrator

Novell offers licenses for ZENworks Orchestrator on a per physical instance basis—rather than on virtual instance licensing models used by competing solutions—providing you greater pricing transparency and ultimate savings. The solution can be purchased from any Novell authorized ZENworks Orchestrator partner. For partner contact information, visit http://www.novell.com/products/zenworks/orchestrator/buy_certified_partner.html.