White Paper

END USER COMPUTING

A capability based comparison between Novell® ZENworks® 11 and Microsoft® System Center 2007 Configuration Manager R3

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Find the Best Endpoint Management Solution for Your Mixed Computing Environment

Over the last decade, Novell ZENworks has developed a reputation as one of the industry's most complete and capable solutions for centrally configuring and managing endpoints in complex and heterogeneous networking environments. With Novell ZENworks, thousands of organizations (See http://www.novell.com/success) have discovered the benefits of using a policy and user-based approach to simplify and automate software and patch deployment, asset tracking, endpoint security, OS migration and a long list of other routine endpoint management tasks. Novell ZENworks allows IT organizations to perfectly align their desktop environments with established business policies and shift more time, money and resources away from mundane, repetitive tasks and toward strategic IT initiatives.

Novell ZENworks 11 represents another major step toward completely automated and nearly effortless endpoint management—by bringing the family of ZENworks products together under a single integrated platform and then extending all those capabilities to a wider range of Windows and Linux platforms and devices.

Novell ZENworks 11 includes:

- A new identity-based, heterogeneous endpoint management platform that consists of a unified ZENworks Control Center console, a single ZENworks Adaptive Agent and ZENworks server software
- Integrated configuration, asset, patch and endpoint security management for Windows and Linux endpoints, including Windows 7
- Managed device location awareness capabilities that add a new dimension to ZENworks Configuration Management, ZENworks Asset Management, ZENworks Patch Management and ZENworks Endpoint Security Management 11's identity-based approach.
- Power management and reporting for Green IT initiatives
- The use of standards-based protocols
- Network consumption control when rolling out new applications or installing updates
- Full manageability over the Internet using secure communication channels
- Simple and speedy installation, deployment and updates
- The ability to integrate seamlessly with your choice of user directory and database platforms
- Support for 64-bit hardware and operating systems
- Rapid installation with an appliance on VMware ESX(i) Hypervisor

Choosing the Best Management Paradigm for Your Business

Every feature found in Novell ZENworks 11 flows from the Novell vision of the Open Enterprise, which embraces the value of creating a simple, secure, productive and integrated IT environment that works across heterogeneous systems. Novell ZENworks 11 empowers IT organizations to manage systems in ways that support real users—with all their various security, location, device and other needs—while still maintaining simple, centralized control over the entire end user environment. As an essential corollary to this philosophy, Novell ZENworks 11 also gives IT departments the freedom to manage their systems according to the paradigm that best reflects their organization's business policies—and the IT staff's preferred working style.

With Novell ZENworks 11, IT departments can choose to manage systems tactically (on a device-by-device basis) or strategically (in synchronization with business policies) using any combination of three distinct management paradigms: management by exception, device-based management and user-based management.

Management by exception

When you evaluate any configuration management solution or paradigm, you should carefully consider two important criteria. First, how well does the management paradigm scale? And second, how large a burden does it place on your IT staff as they continually update the solution to accommodate changing business policies? Novell ZENworks 11 can provide the right answers to both of these questions. Novell pioneered the "management by exception" paradigm, and ZENworks 11 continues to offer it as a powerful tool for continuously adapting to changing business policies and practices with minimal IT effort.

In most situations, management by exception serves as a complement to policy-driven management paradigms. It allows for the strict, high-level enforcement of general configuration management rules across user or device groups, while still permitting exceptions at a more granular level to accommodate specialized needs.

For example, normal business policies may allow employees to remotely access the corporate network. However, applying this policy across the board to all desktops—including PCs in the finance and legal departments—could expose the company to regulatory penalties and corporate spies. Exception-based management allows IT departments to create and automatically enforce general access policies across the whole company, and then apply more restrictive policies to PCs and users in specific groups or departments. In this case, the additional stricter policy would restrict access to normal business hours, on-site, by authorized users. Exception-based management allows for complete flexibility, without requiring IT to manage separate policy silos for each type of user and machine.

Device-based management

Many organizations base their configuration management practices on the devices they manage. In fact, this is the default method used by most competing configuration management products on the market today. In the absence of user-based and exception-based policy management, products that only target specific device configurations typically end up treating actual business policies and the needs of users as an afterthought because they essentially link a specific user to a specific device. By tying applications, policies and other configuration parameters to a specific managed device or set of managed devices, this approach often forces users into rigid roles instead of supporting them as dynamic participants in ever-evolving business processes. Because of these limitations, Novell ZENworks 11 places more emphasis on user-based management than device-based management.

However, to keep the solution as flexible as possible, Novell ZENworks 11 does offer device-based management capabilities that can be used in conjunction with other management paradigms to fill specialized needs. For example, call centers where multiple users share a single PC in shifts, manufacturing-floor PCs and public kiosks can all create situations where device-based management may be more appropriate than user-based management. In addition, companies that normally rely on user-based management may need the ability to quickly set up a device for ad hoc, tactical purposes. For example, quickly configuring a device to auto-run a presentation in a conference center might make more sense than creating a new "user" for that single instance.

With the Novell ZENworks 11 architecture, you have the option of using device-based management whenever it suits your specific needs. Because device-based management is very familiar to most IT professionals, and because it offers the fastest way to configure a machine before you create long-term user-based policies, device-based management is presented as the default management paradigm when you first install ZENworks 11.

User-based management

User-based systems management—which leverages user identities, group roles and business policies—is the gold standard for automation, security and IT control. User-based management has always been a Novell specialty. And even though the underlying architecture of Novell ZENworks 11 has been dramatically enhanced, the full power and complete range of Novell ZENworks 11 user-based management capabilities has been preserved.

True user-based configuration management disassociates users from the specific devices they use. This makes it possible to treat users as the company's most valuable managed asset and relegate devices to their proper role as tools that must serve the needs of users. Allowing people—rather than machines—to be managed as first-class configured entities means that policies, applications and other configuration details can "follow" users from machine to machine. User-based management also ties IT policies directly to business policies, which increases responsiveness to changing business conditions. Finally, a user- based approach leverages identity stores and business systems across the enterprise to eliminate errors, increase security, standardize workflows, document regulatory compliance and support effective decision-making.

The user-based paradigm represents a truly strategic approach to systems management, while device-based management is almost purely tactical. With Novell ZENworks 11, you can mix and match both approaches—based on your changing business and IT requirements—by using the management by exception paradigm. For example, Novell ZENworks 11 allows you to apply a policy to a specific device and then selectively override that policy based on the identity information of the user who is currently logged on. Conversely, you could choose to override a general user- and role-based policy based on a specific machine and its context, such as when a mobile device attempts to access the network from outside the firewall.

Comparing Novell ZENworks 11 to Microsoft System Center Configuration Manager

Novell ZENworks can offer your business a long list of unique benefits and advantages. It is based on a new Novell ZENworks 11 platform that combines and integrates configuration, asset, patch, and endpoint security management for Windows and Linux desktops. It offers a single, modular architecture that maximizes flexibility and scalability, simplifies and speeds management throughout the device lifecycle, minimizes processing demands on managed clients, reduces bandwidth consumption for management processes and uses standards-based protocols to seamlessly integrate with your choice of user directory and object database. It lets you manage systems based on users identities, roles, groups and locations, so IT can work hand-in-glove with the company's business priorities and policies. Finally, it gives you a secure, web-based console for unified control over all your management tasks—from virtually anywhere.

Of course, Novell ZENworks 11 is not the only endpoint and configuration management solution on the market and Microsoft's System Center Configuration Manager 2007 (SCCM) is one of many that it competes against. Now that you understand the basics of how Novell ZENworks 11 works and some of the benefits it can offer, we'll examine how it stacks up against the similar solution from Microsoft.

But first, what should you really be comparing?

Novell ZENworks 11 and Microsoft's System Center Configuration Manager offer a wealth of features. They are designed to manage not just your environment, but countless others as well. These may be a single site with a few hundred identical devices, multiple sites with several thousand devices, those that span multiple time zones and political borders, computers in kiosks, in libraries, on cruise ships; the list is almost endless.

In fewer words, they contain more features than you would ever need or even use.

Given this, does it make any sense to compare products to each other on a feature basis? It really doesn't.

You should firstly compare products against the list of capabilities that are required to manage your environment and *only then* look at how each product compares against each other for delivery of that capability.

Notice how we've changed from discussing features to that of *capabilities*. Lets define a capability; its a collection of features that satisfy a business requirement. For example, take the following:-

Capability	Comparison
Preserve Investment in Existing Images	**Novell ZENworks 11:** Supports Ghost , ImageX and existing ZENworks images. Ensures that customers can carry on with these formats and convert to ZENworks over time or just stay with their current tool.. **SCCM**: Only supports imaging using Microsoft ImageX format. Existing images will have to be rebuilt or thrown away. This is a significant time investment, given the amount of QA work necessary for ensuring reliability.

We have a business need to preserve our existing library of OS images to avoid the need to rebuild them or to create from the beginning again. The feature which can deliver this is support for multiple image types.

You can use this document to start to build out the list of capabilities that your environment requires. The capabilities come from prior customer engagements and therefore are real world rather than something copied out of a vendor product leaflet. Once you have built your list, only then start the comparison process. This should include a proof of concept test for all the solutions under consideration to provide worthwhile results. After all, you would never purchase an automobile based on the nice pretty brochure, a test drive is always in order.

Capability comparison

Novell ZENworks 11 offers a comprehensive list of capabilities that compare favorably with any solution on the market. The following series of tables highlights many of the key capabilities, although they do not represent a comprehensive list for all that Novell ZENworks 11 offers.

The tables have been created using a variety of methods including laboratory testing, customer feedback and publicly available information from 3rd parties. If applicable, the source is stated for a capability. An embedded weblink to the data is also included where appropriate.

Installation and administration

Capability	Comparison
Flexible installation options	**Novell ZENworks 11:** Allows you to install only the components you need, perform post-installation evaluations and activate additional capabilities quickly when you need them. Novell ZENworks 11 also includes a fast, convenient virtual appliance deployment option. **SCCM:** Not as flexible, significantly more time required to complete pre-reqs. No appliance option.
Deployment readiness	**Novell ZENworks 11:** Works out of the box without any changes. You can fine-tune the configuration at any point to meet your specific requirements. **SCCM:** A number of steps are needed before SCCM can start managing devices including extension of the Active Directory schema.
Console layout	**Novell ZENworks 11:** A clear, intuitive layout with logically grouped configuration options makes learning and working with the Novell ZENworks 11 console (commonly called the ZENworks Control Center) straight forward **SCCM:** Organized by function but presented in an outdated tree structure. Not always as easy to navigate or learn quickly.
Configuration and maintenance	**Novell ZENworks 11:** Offers many different ways to configure and schedule common tasks (including software updates). As a result, most companies generally dedicate the equivalent of one staff person, working part time, to keep the system running. **SCCM:** Expect to spend significant time ensuring that SCCM is up and working.
At a glance status	**Novell ZENworks 11:** The ZENworks Control Center home page shows the status of all your devices, bundles and policies using a traffic light system. This enables you to instantly identify, prioritize and investigate critical issues. **SCCM:** Need to look into multiple log files to determine system status.
Access control	**Novell ZENworks 11:** Leverages information contained in eDirectory or Active Directory to control access to the ZENworks Control Center. If existing directory data is not available, you can also define users within the Novell ZENworks 11 system. **SCCM:** Leverages Active Directory authentication and access controls for features and capabilities within the console. However, the depth at which this goes creates complexity and confusion. Its a case of too much granular control.

Capability	Comparison
Message summary	**Novell ZENworks 11:** Provides convenient message summaries for Individual bundles, devices and policies, so you always receive an instant, easy-to-understand overview of the situation. **SCCM:** Forces you to spend time searching through numerous reports to find the information you need.
Device quick tasks	**Novell ZENworks 11:** Makes it easy to select any device and a list of appropriate tasks and have them appear on the device home page. Simply clicking on a task performs the action without having to navigate through nested menu structures. **SCCM:** Functionality is often buried beneath multiple menus.
Wizards-based approach	**Novell ZENworks 11:** Step-by-step wizards are waiting to walk you through all major tasks. This simplified approach makes it possible to be productive quickly and take control of your managed device estate with complete confidence. **SCCM:** Bombards administrators with tick boxes and drop-down lists that make it easy to miss critical tasks and functions.
Web console	**Novell ZENworks 11:** Allows you to use Firefox or Internet explorer to connect to a Novell ZENworks 11 primary server and instantly access the complete ZENworks Control Center. **SCCM:** Traditional thick console client which takes time to install and is only effective on machines that have fast network access to the back end SCCM infrastructure. Remote access outside of the corporate network or from remote sites is troublesome. Even after console clients are installed, you have to worry about constantly maintaining and updating them to keep them operational.
Grouping devices to ease management	**Novell ZENworks 11:** Group devices together to reflect organizational charts, virtual teams or other organizational structures. Provides advanced grouping capabilities, which dramatically simplifies the process of organizing and managing devices. Novell ZENworks 11 automatically places devices into groups either by using registration rules or by leveraging Dynamic Grouping capabilities. Both of these grouping methods save you time by moving devices into their correct groups instantly and automatically. The ZENworks Control Center also features an easy search function that makes it easy to locate specific devices quickly. **SCCM:** Requires the creation of complex SQL-based queries that place devices into groups using audit information.

Capability	Comparison
Retired devices	**Novell ZENworks 11:** By retiring a device, you can keep a record of the asset after it is no longer in use. This automatically frees up a license you can use for devices that are still in active service. At any point, you can bring devices back from retirement, begin managing them again and maintain a complete history of the asset. **SCCM:** Every device in the database requires a license—whether it's in active use or not. That means you end up paying to store information about retired devices that are no longer in use.

Architecture and platform support

Capability	Comparison
Integrated Platform	**Novell ZENworks 11**: Provides integrated configuration, asset, patch and endpoint security management. Novell ZENworks 11 platform includes a unified ZENworks Control Center Console, a single ZENworks Adaptive Agent and ZENworks server software. **SCCM:** Multiple agents are necessary to match capabilities offered by Novell ZENworks 11. WSUS for patch management, Forefront for security and finally SCCM for configuration management. Note that WSUS requires additional server side services.
Multi-platform support	**Novell ZENworks 11**: Provides full management capabilities for all major Windows and Linux operating systems, along with auditing capabilities for Mac and several UNIX flavors. Novell ZENworks 11 also fully supports server-class operating systems across this spectrum. **SCCM**: Limited to Windows only. 3Rd party solutions required for other platforms at additional cost.
Multi-Database Support	**Novell ZENworks 11**: Ships with a free Sybase relational database for sites up to approximately 2,000 computers and fully supports Microsoft SQL Server and Oracle. **SCCM**: Only supports Microsoft SQL.
Scalability	**Novell ZENworks 11**: With its distributed architecture (collection services, database server, web reporting server, etc.), Novell ZENworks 11 is proven to support up to 40,000 managed devices. **SCCM:** Claimed support for 300,000 devices *[Source: What's New in System Center Configuration Manager 2007 R3 , Microsoft]*
Virtual Machine Support (server components)	**Novell ZENworks 11**: All server components (collection services, database server, web reporting server, etc.) can be run within virtual machines (VMware / Microsoft Virtual Server / Citrix XENserver). **SCCM**: Similar range of hypervisors are supported *[Source: Virtualization Validation Program , Microsoft]*
Runs on Linux or Windows	**Novell ZENworks 11**: With Novell ZENworks 11, you can run your primary server on SUSE Linux Enterprise Server or Red Hat Enterprise Linux to minimize costs. If money is available, you can also choose to run the primary server on Windows Server 2003 or 2008. **SCCM**: Windows only

Capability	Comparison
Full 64-bit support	**Novell ZENworks 11**: Fully supports 64-bit operating systems and 64-bit hardware, which allows you to leverage today's hardware **SCCM:** Can be installed on 64-bit operating system and hardware but is unable to take advantage of the potential.
Use of the nearest management point	**Novell ZENworks 11**: With Novell ZENworks 11, managed devices automatically find their closest primary server based on pre-defined rules that reflect your network infrastructure. This keeps network traffic across expensive WAN connections to a minimum. **SCCM**: Devices that are part of Active Directory can find the nearest management point when roaming. However, any workgroup device cannot.
Web console	**Novell ZENworks 11**: Allows you to access the ZENworks Control Center from any computer with Firefox or Internet Explorer. **SCCM:** Traditional windows console.
System update	**Novell ZENworks 11**: Like any other software application, Novell issues frequent patches and updates for ZENworks 11. You always receive automatic notifications of updates through the ZENworks Control Center console, and you can choose when and how to download, stage deployments to selected devices and roll out updates across the entire managed estate. **SCCM**: Lacks this automated update approach. This means you can expect to spend extra time checking for updates manually, downloading files and ensuring that all servers / clients are updated.
Content store	**Novell ZENworks 11**: Holds all applications, policies, images, patches etc. that could be deployed to managed devices in an encrypted data store and makes it easy to replicate copies of this store to all primary servers and satellites. You control exactly what gets replicated, how often and the network speed at which replication occurs. **SCCM**: File based content store that is replicated across distribution points as required.
Easy migration	**Novell ZENworks 11**: Uses a convenient utility to import workstations, application snapshots, user mapping and relationships from previous versions of ZENworks. This includes migrating asset inventory from ZENworks Asset Management. **SCCM**: No data migration

Discovery and deployment

Capability	Comparison
Refine discovery results	**Novell ZENworks 11:** Although you can use many different query methods to find details about devices, complete accuracy is not always possible. ZENworks Control Center makes it easy to fill in any missing or incorrect details. **SCCM:** Doesn't allow you to edit information returned by automated discovery. This can create uncertainty about whether a device can support an agent or not.
Delegated query agent	**Novell ZENworks 11:** Uses existing managed devices to search networks at remote sites. **SCCM:** Relies on centralized searching that is prone to network disruption or is blocked by firewalls.
Single adaptive agent	**Novell ZENworks 11:** Consolidates a wide range of configuration, asset, patch and security management functions into a single endpoint agent, so you no longer have to worry about deploying and updating multiple agents for different ZENworks products. **SCCM:** Multiple agents are necessary to match capabilities offered by Novell ZENworks 11. WSUS for patch management, Forefront for security and finally SCCM for configuration management. Note that WSUS requires additional server side services.
Self-organization	**Novell ZENworks 11:** With ZENworks 11, managed devices register automatically into defined folders as part of the installation process. **SCCM**: No equivalent. Requires construction of SQL queries to achieve device grouping.
Manual device creation and reconciliation	**Novell ZENworks 11:** Allows you to pre-create devices and then have them reconcile based on Serial number, MAC address and/or Hostname. **SCCM:** No equivalent.

Asset intelligence

Capability	Comparison
Knowledgebase approach	**Novell ZENworks 11:** The Novell ZENworks Knowledgebase, which is embedded in every ZENworks product, contains references, tests, attributes and metadata about tens of thousands of IT hardware and software products. Combined with multiple data collection methods, the Knowledgebase delivers the information IT managers need to make informed decisions that influence the way they carry out tasks, complete projects and keep management informed. An expert team of Novell analysts uses numerous tools, techniques and physical examination methods to build and maintain this world-class collection of accurate and up-to-date information. **SCCM:** Similar approach so long as you don't object to sharing data with Microsoft.
Data normalization	**Novell ZENworks 11:** The Novell ZENworks 11 Knowledgebase, maintained by expert Novell analysts, contains only one consistent expression of every manufacturer (of which there are thousands) and every product name (of which there are tens of thousands) to ensure consistent results. This prevents users from having to: ■ Account for all the varied expressions of a given string when searching or reporting ■ Perform ongoing data scrubbing and cleanup **SCCM:** Normalization is a manual task
Extensive attributes	**Novell ZENworks 11:** Because of Novell ZENworks 11's unique Knowledgebase approach, it can deliver both comprehensive and accurate software inventory, as well as extensive attribute information and metadata about installed software. This includes: ■ Normalized manufacturer names ■ Normalized product names ■ Software suites and related suite components ■ Standalone suite components ■ Distinct product editions ■ Distinct product versions ■ Distinct run-time versions ■ Service releases and service packs ■ Microsoft* OS hotfixes ■ Guest virtual machine images/from scan of host (VMware* ESX and GSX Server and Workstation, Microsoft Virtual Server and Virtual PC) ■ Guest virtual machine (VM)-installed software (from scan of guest)

Capability	Comparison

	■ Language editions (Chinese [simplified and traditional], English, French, German, Italian, Japanese, Portuguese [Brazilian], Spanish)
	■ Serial numbers
	■ Category and subcategory (e.g., graphics/drawing)
	■ Virus and spyware definitions and engines (V= Antivirus, S= Spyware)
	  ■ Symantec (V,S)
	  ■ McAfee (V,S)
	  ■ CA (V,S)
	  ■ Command
	  ■ Sophos (V,S)
	  ■ Trend Micro (V,S)
	  ■ F-Secure (V,S)
	  ■ Panda Software
	  ■ Microsoft (S)
	  ■ Tenebril (S)
	  ■ PC Tools (S)
	  ■ Webroot Software (S)
	  ■ Omniquad (S)
	  ■ Safer Networking
	  ■ Sunbelt Software (S)
	  ■ Infoworks Technology (S)
	  ■ Earthlink (S)
	  ■ ParetoLogic (S)
	  ■ Malware identification: (e.g. Hacker tools, Spyware)
	  ■ Other suspicious software
	  ■ Other software that represents productivity or security risks (e.g Games,P2P applications)

Full discovery and inventory of Linux devices	**Novell ZENworks 11:** Provides full discovery of Linux devices using Secure Shell (SSH), together with full Linux hardware and package inventories, device change tracking and the ability to map purchases to installed packages. **SCCM:** Needs 3rd party solution at additional cost.

Remote management

Capability	Comparison
Dynamic bandwidth optimization	**Novell ZENworks 11:** Automatically adjusts compression ratios and other factors to maximize responsiveness, regardless of the connection bandwidth. **SCCM:** No evidence
Get more eyes on a problem	**Novell ZENworks 11:** Allows an end user's remote control session to be viewed by several people at the same time. This makes it possible to collaborate with colleagues and resolve issues quickly, so users can return to full productivity as soon as possible. **SCCM:** No evidence
Scale remote view	**Novell ZENworks 11:** Scales remote control views to fit your display without affecting the end user's display settings. This makes it easy to instantly see the end user's entire desktop, so you can pinpoint problems quickly. **SCCM:** No evidence
Security features	**Novell ZENworks 11:** Uses a variety of measures to address privacy and security concerns. First, Novell ZENworks 11 offers intruder detection capabilities that repel unauthorized attempts to access the system. Next, the solution only allows authorized users to perform remote management operations, and end users can monitor remote operations and instantly disconnect if they become concerned. Finally, all Novell ZENworks 11 communications are encrypted using public/private keys. **SCCM:** Basic access controls and lacks a holistic, multi-layered approach to security.
Remote management through (NAT)	**ZENworks 11:** Allows you to remotely manage devices on the other side of a network address translation (NAT) using a “meet in the middle” approach. **SCCM:** No evidence
Built on reliable VNC technology	**Novell ZENworks 11:** Created in the Olivetti & Oracle Research Lab in the late 1990's, VNC has been downloaded 100 million times and has become the *defacto* tool for remote control access across multiple platforms. Novell ZENworks 11 takes this solid foundation and adds access control with encryption, creating the most reliable and secure remote control feature in any configuration management solution. **SCCM:** Made from technology licensed from Intel which was designed for DOS / Windows 3.X.

Capability	Comparison
Remote management for Linux devices	**Novell ZENworks 11:** Enables remote management for Linux endpoints by making integrated VNC and SSH clients available from within the centralized ZENworks 11 Control Center. **SCCM:** No evidence.

Software Distribution

Capability	Comparison
Package Creation	**ZENworks 11:** Includes Flexera Software's AdminStudio ZENworks Edition, which makes it possible to prepare reliable Windows Installer (MSI) software packages for distribution. **SCCM:** Does not include any packaging tools. InstallShield or another packaging application must be purchased separately
Software Deployment	**ZENworks 11:** Software is deployed with a bundle. Bundles have all the necessary logic to distribute, install, configure, update, repair, remove and terminate a given application. These options can be accomplished with or without user interaction. **SCCM:** Deployment tasks are not bundled, but require multiple objects. To deploy an application, a package object must be created. A program object must then be created with the command to install the application. Other program objects would need to be created for application updates along with another package object for distribution.
Rights Management	**ZENworks 11:** Provides complete control over user rights throughout the entire application lifecycle, including installation, application execution and application removal. **SCCM**: Only provides the ability to elevate rights during application installation.
Application Removal	**ZENworks 11:** Includes additional removal functions and capabilities beyond the standard MSIEXEC command functions. The application bundle can contain all of the logic necessary to accomplish this task. **SCCM:** Application removal capabilities are limited to standard MSIEXEC commands and additional removal functions would require creation of a separate program object.
Pre- and post-installation scripting	**ZENworks 11:** Includes a number of common pre- and post-installation scripts. Novell ZENworks 11 also makes it easy to run a wide variety of custom scripts from a versatile command line utility. **SCCM**: Offers limited pre and post-installation scripting abilities.

Capability	Comparison
Target system Requirements	**ZENworks 11:** Software bundles can be configured with numerous system requirement conditions to ensure successful delivery, installation and execution. Examples include checking for CPU, memory, disk space, network segment, OS platform, file or registry existence. **SCCM:** A program object is limited to checking for disk space and OS platform.
Software Assignments	**ZENworks 11:** Software bundles can be assigned to ZENworks computer groups, dynamic groups and/or folders. In addition, bundles can be assigned to native Active Directory (or eDirectory) groups and/or containers. **SCCM:** A collection object must be created along with a SQL query. This query can extract group membership from existing AD groups. A schedule must be set for regular synchronization.
Deployment Actions	**ZENworks 11:** The majority of applications need further adjustments or configurations rather than a default install. Novell ZENworks 11 bundles allow for these actions such as registry edits, ini configurations and copying other support files. Each action can also check for a corresponding system requirement condition. These actions can execute the time of distribution, installation, launch, reinstall and/or uninstall. **SCCM:** A program object can only do one command line action. Other program objects can be configured to be installed first but this would require creating a program object for every action that may need to be executed for a given install.
Linux package and repository management	**ZENworks 11:** Allows customers to graphically configure, bundle and control Linux application repositories, packages and bundles, including YUM, Novell Updates (NU), Red Hat Network (RHN) and ZENworks Linux Management formats. ZENworks 11 also includes ZENworks Application Windows, which brings the full power of Novell Application Launcher (NAL) to the Linux desktop. **SCCM:** Only supports Windows packaging and repository formats.

Capability	Comparison
Bundle shortcuts	**Novell ZENworks 11:** With Novell ZENworks 11, end users can execute a bundle by simply clicking on a shortcut—usually to run an application that has been installed by the bundle. You can choose to place shortcuts in any or all of the following locations: ■ Application window ■ Desktop ■ Start Menu ■ Quick launch ■ System tray **SCCM:** No competing product offers this capability.
Flexible deployment	**Novell ZENworks 11:** Allows you to define separate distribution, launch and availability schedules as part of the same bundle. This gives you the ability to specify what triggers a managed device to download bundle files (distribution), how the bundle is executed (launch) and when it becomes available (availability). Novell ZENworks 11 supports all of the following triggers: ■ Now ■ Date time specific ■ Recurring on an interval ■ Event ■ User login ■ User logout ■ Device boot ■ On device lock ■ On device unlock ■ ZENworks 11 login ■ ZENworks 11 logout ■ Device connected to network **SCCM:** Performed when agent checks into the SCCM infrastructure according to the polling cycle the Administrator has set.

Capability	Comparison
Protected local content cache	**Novell ZENworks 11:** When using ZENworks content stores, managed devices store copies of bundle files locally before starting the installation. These local content files are encrypted and cannot be accessed by end users. **SCCM:** Other products use a similar process, but the files are not encrypted. This allows rogue end users to take copies of application files for their own purposes. **Novell ZENworks 11:** The ability to store a local copy of bundled files on managed devices—and then perform the installation at a later date—creates two advantages for administrators: ■ **It saves time by enabling parallel roll out and testing**—If testing shows that the bundle is OK, installation takes place using files in the local cache. If testing reveals a problem, the ZENworks agent deletes the bundle after a set time period. ■ **It splits distribution and installation—**Distributing files over an extended time period helps ensure that every device has a chance to receive them. After every machine has received the files, you can initiate a mass installation at a set time and date. This provides a distinct advantage for project-based application distributions, such as an organization-wide move to the latest version of Microsoft Office. **SCCM:** no equivalent
User Experience	**Novell ZENworks 11:** Desktop icons can be presented to the user on the desktop, in the start menu, quick launch bar, system tray and/or in the ZENworks Application Window. These icons contain all of the bundle logic described above. Users can not modify or delete these icons. This provides a consistent and supportable work environment. **SCCM**: Program objects are listed in the Control Panel applet of Get Programs. Desktop icons are delivered by the MSI or command line install of the particular software application. As a result, when icons are deleted, they can only be recovered by repairing the MSI or reinstalling the application.

Capability	Comparison
Installation Progress	**Novell ZENworks 11:**: Provides users with detailed information about the status and progress of each application installation (cache and MSI install). **SCCM**: Provides only limited information about install progress.
Software Requests	**Novell ZENworks 11:** Users see new available applications the moment they are added to a new group. **SCCM**: There are often delays between the time users are added to a new group and the time new applications appear in their advertised programs list.
Legacy Package Conversion	**Novell ZENworks 11:** Provides seamless conversions for legacy AOT/AXT packages into Windows installer format (MSI). **SCCM**: Will not convert legacy AOT/AXT packages.

Operating system deployment

Capability	Comparison
Operating system deployment	
Leverage bundle features	**Novell ZENworks 11:** Imaging makes use of many of the features found in bundles, including the content system. You can also leverage bundles within imaging. For example, you could deploy applications as part of a new workstation build process rather than as a follow up task. **SCCM:** With most competing products, Imaging is performed in isolation and does not make use of the other capabilities found in the solution.
ZENworks Configuration Management boot partition	**Novell ZENworks 11:** Devices that are imaged frequently, including those based in training rooms, classrooms and testing centers may be better served by having a permanent area on the hard drive that starts up in the imaging environment, and Novell ZENworks 11 makes this possible. If there is no work to do, control is handed over to the normal OS. If an image process is assigned, that process runs automatically. **SCCM:** Most competing solutions do not offer this level of flexibility.
Locally stored Images	**Novell ZENworks 11:** Novell ZENworks 11 allows you to place a local boot partition on a hard drive that stores an OS deployment image. If an automated kiosk suffers from a corrupted OS, it can simply boot to the local partition with the OS image for fast, complete recovery—without having to wait for a large image to download. **SCCM:** As with most competing products, this type of automatic, hands-free recovery is not possible.
Image engine selection	**Novell ZENworks 11:** Provides a powerful imaging engine that runs in a Linux pre-boot environment. This feature has had many years of successful field use and contains many powerful features. We also recognize that many organizations have existing images that were created using other tools, such as Microsoft's Imagex and Symantec Ghost. Novell ZENworks 11 can use the engine of your choice, protecting your image library investment. **SCCM:** Only supports the use of its own tool. The latter scenario can be particularly costly, because it forces you to abandon your investment in existing images.
Linux or WinPE environments	**Novell ZENworks 11:** Allows you to choose either a Windows- or Linux-based pre-boot environment to run imaging tasks, depending on which environment you're most comfortable with. **SCCM:** WinPE is the only choice.
Linux	**Novell ZENworks 11:** Supports the delivery of SUSE Linux

Capability	Comparison
operating system deployment	Enterprise and Red Hat Enterprise Linux through either AutoYaST or KickStart. ZENworks 11 also provides bare metal Linux provisioning to Dell PowerEdge servers, full support for ZENworks system variables within AutoYaST and Kickstart, and improved Linux imaging capabilities for imaging EXT3 and ReiserFS partitions. **SCCM:** Few competing products can offer the same range operating system deployment options for Linux environments.
Separation of the OS, applications and drivers	**Novell ZENworks 11:** Allows you to separate applications from OS images. This makes it possible to reduce overall image size and eliminates the need to rebuild images every time an application update or a new version appears. In addition, the ability to maintain drivers outside of OS images eliminates the link between an OS image and the hardware you install it on, which reduces the overall number of images. **SCCM:** Possible with task sequences and latest version of WAIK
Saving device identity	**Novell ZENworks 11:** When a managed device is deployed with an operating system, it retains its identity in Novell ZENworks 11. This ensures that configuration information is always retained, along with any tasks that have been assigned. Usually, the device identity is stored in a hidden area of the hard drive. Novell ZENworks 11 also uses embedded device information on PCs with Intel vPro technology. **SCCM:** No equivalent
Standardized device naming	**Novell ZENworks 11:** Uses a standard naming methodology to facilitate more efficient device management. Organizations often use a convention that incorporates the type of device, installed OS, image build and location into the device name. For example, LTW2KUK21 shows the device is a latop (LT), running Windows 2000 (W2K), located in UK. The final number (21) is a unique identifier. In these situations, a relatively short device name conveys a great deal of important information. ZENworks 11 allows you to maintain control over device names when a new OS is installed. **SCCM:** Possible with WAIK.
Image modification	**Novell ZENworks 11:** Rather than having to create a completely new image every time you make a minor modification, ZENworks 11 provides a convenient image editing tool. This tool enables you to update existing images, which can save you significant time and effort. **SCCM:** As with most competing products, any adjustments to an image require you to generate a completely new image.

Capability	Comparison
Data and setting transfers	**Novell ZENworks 11:** Deploying images to devices often destroys or damages user data, settings and other information. Rather than losing this important information, ZENworks 11 allows you to store it safely before an image deployment and then restore it after the deployment is complete. And of course, you maintain complete control over what is backed up and where it is restored. **SCCM:** Equivalent capability
High speed multi-casting	**Novell ZENworks 11:** OS images are often over 1GB in size. This means deploying OS images to 1,000 devices at the same time would involve moving 1TB of information around the network, which could bring your network to its knees—or at the very least cause significant performance problems. ZENworks 11 offers advanced multi-casting capabilities, which operate the same way as a radio receiver: unless you are tuned into the correct frequency, you can't hear the signal, and there is only one transmission for all listeners. This means a 1GB image is only transmitted to targeted devices, which eliminates network overload and accelerates the imaging process. **SCCM:** Just introduced with the latest service pack. Reliability and robustness not yet determined.
Pre-boot scripts	**Novell ZENworks 11:** As soon as a device is running the ZENworks 11 imaging environment, it can be used to execute various tasks. For example, you could update the BIOS to a new version, change BIOS settings or even configure the RAID controller on a server as it's deployed. Many organizations use pre-boot scripts to run disk wiping tools that securely remove data before devices are retired, disposed of or re-deployed. **SCCM:** Some competing products are only able to deploy images in pre-boot environments, which leaves you to perform additional tasks manually.
Immediate imaging	**Novell ZENworks 11:** Rather than waiting for a managed device to be manually rebooted to begin the imaging process, ZENworks 11 makes it possible to trigger this event yourself from within ZENworks Control Center—assuming you have the necessary privileges. This feature can be used to rebuild lab, test and classrooms machines without having to visit the location or ask someone to manually reboot each machine. **SCCM:** Most competing products must wait until machines are rebooted manually before beginning the imaging process.

Capability	Comparison
Post-imaging capabilities	**Novell ZENworks 11:** Allows you to create a series of bundles that come together to completely provision a device. This includes: ■ Pre-OS install configuration ■ Applying an OS image ■ Installing applications ■ Bringing the system to a defined patch level. This eliminates the need for manual intervention and saves your IT staff significant time and effort. **SCCM:** Task sequences can achieve this, but are not as straight forward to manage.

Policies

Capability	Comparison
Rules for hardware and software configuration	**Novell ZENworks 11:** Makes it easy to create policies that control a range of hardware and software configuration settings on managed devices. For example, an administrator can create policies to control which bookmarks are available in the browser, define which printers the user can access, and apply security and system configuration settings. With ZENworks 11, you can use policies to create a set of configurations that can be assigned to any number of managed devices. This facilitates completely uniform device configuration, and it eliminates the need to configure each device separately. **SCCM:** Does not offer they same kind of policy- and rule-based configuration management.
Power management configuration	**Novell ZENworks 11:** Allows you to create policies that set up Windows power management settings and perform out of band power management tasks using Intel® vPro® technology. **SCCM:** Also offers this.
Available rules	**Novell ZENworks 11:** Allows you to create the following types of rules and policies and apply them to groups of managed devices: ■ **Browser bookmarks policy**—Allows you to configure Internet Explorer / Firefox favorites for Windows devices and users. ■ **Dynamic local user policy—**Enables you to create new users and manage existing users created on Windows 2000, Windows XP, and Windows Vista workstations, as well as Windows 2000 and Windows 2003 Terminal Server sessions, after users have successfully authenticated to the user source. ■ **Local file rights policy**—Lets you configure rights for files or folders that exist on NTFS file systems. This policy can be used to configure basic and advanced permissions for both local and domain users and groups. It also provides the ability for an administrator to create custom groups on managed devices. ■ **Printer policy—**Allows you to configure local, SMB, HTTP, and iPrint printers on a Windows machine. ■ **Remote management policy**—Allows you to configure the behavior or execution of remote management sessions on managed devices. This policy includes properties, such as remote management operations and security. ■ **Roaming profile policy**—Allows you to create a user profile that is stored in a network path. A user profile contains information about a user's desktop settings and personal preferences, which are retained from session to session. Any user profile that is stored in a network path is known as a roaming profile. Every time the user logs on to a machine, the profile is automatically loaded from the network path. This makes it possible for the user to move from machine to machine

Capability	Comparison
	and still retain consistent personal settings. ■ **SNMP policy**—Makes it possible to configure SNMP services on managed devices. ■ **Windows group policy—**Allows you to configure a group policy for Windows devices. ■ **ZENworks explorer configuration policy—**Allows you to administer and centrally manage the behavior and features of the ZENworks Explorer. **SCCM:** No evidence.
Management by exception	**Novell ZENworks 11:** Allows you to define a global policy for your enterprise and associate that policy with the top-level container that holds all your user objects. You can then override configuration items in the global policy by defining new policies and associating them to specific users or groups. These users and groups receive their configuration from the new policy. All other users receive their configuration from the global policy. For example, you could create a global remote control policy that does not allow any device to be remote controlled at the global level—and then put various overrides in place at lower levels depending on the security needs of specific workstations and servers. **SCCM:** Does not offer this kind of management approach.
Assign policies to users and devices	**Novell ZENworks 11:** With Novell ZENworks 11, you can choose whether you want policies to function at the device level or at the user level. This creates a great deal of flexibility for IT administrators. **SCCM:** Does not offer the choice between device-based and user-based policies.
Active policy determination	**Novell ZENworks 11:** Novell ZENworks 11 provides several options to ensure the desired policy is active, thereby avoiding conflicts in a multi-policy situation. To ensure that the desired policy is active, Novell ZENworks 11 makes it easy to choose between the following options: ■ **User last**—Applies associated policies to the device first, then the user. This is the default value. ■ **Device last**—Applies associated policies to the user first, then the device. ■ **User only**—Applies only the policies associated with the user and ignores the policies associated with the device. ■ **Device only**—Applies only the policies associated with the device and ignores the policies associated with the user. **SCCM:** Does not offer this level of policy management.

Reporting

Capability	Comparison
Reporting Server	**Novell ZENworks 11:** Novell ZENworks 11 ships with the ZENworks Reporting Server which is built on Business Objects Enterprise Server. This is an extremely powerful business intelligence engine, which allows customers to run predefined reports, as well as create custom reports that are both graphical and table based. **SCCM:** Includes a set of predefined reports, and gives the administrator the ability to create custom reports. These are fairly basic reporting capabilities, and would not be classified as business intelligence.
Custom Reports	**Novell ZENworks 11**: Using the ZENworks Reporting Server, the administrator or report creator can create any number of very advanced reports by simply dragging and dropping universe objects in the report creation tool. No understanding of SQL is required. **SCCM**: Allows administrators to create custom reports, but an understanding of database layout and SQL is required to properly develop the reports.
Report Scheduling	**Novell ZENworks 11:** Administrators can schedule the automatic creation of reports, and have them sent to specific individuals on a timed basis. **SCCM**: There is no concept of scheduling a report in SCCM.
Cross Platform	**Novell ZENworks 11:** The Reporting Server can be installed on either Microsoft Windows Server, Linux, or Novell Open Enterprise Server. **SCCM**: Can only be installed on Microsoft Windows Server.
Data Mining	**Novell ZENworks 11:** Vast amounts of data can be extracted using the ZENworks Reporting Server, then granularly refined based on filters that can be either statically set, or set on the fly by the individual running the report query. **SCCM**: There is no concept of refining data that is mined in real time.
Focus	**Novell ZENworks 11:** The focus of ZENworks Reporting Server is business intelligence. **SCCM**: The focus of SCCM is on reporting and creating reports – not necessarily what is mined and presented.

Patch management

Capability	Comparison
Support for a wide range of vendor patches	**Novell ZENworks 11:** Provides support for vulnerabilities and patches from the following vendors:- • Adobe Systems, Inc • Apple • Citrix Systems, Inc • Marcomedia • McAfee, Inc • Microsoft Corp • Mozilla • Novell • Patchlink Corporation • RealNetworks, Inc • RedHat (Linux) • Skype • Sun Microsystems • SUSE (Linux) • Trend Micro • Vmware • WinZip Computing Inc **SCCM:** Provides support for vulnerabilities and patches from the following vendors:- • Adobe Systems, Inc* • Dell* • HP* • Microsoft Corp Other vendors can be supported using custom vulnerability definitions and updates. This is a manual exercise for an administrator to create these using a tool from WSUS. Linux vulnerability management is not supported. *Must be added manually to the system update catalogue used by SCCM / WSUS

Capability	Comparison
Efficiently handle "Patch Tuesday"	**Novell ZENworks 11:** Email notification will inform administrators of any new vulnerabilities. Within ZENworks web console, they can select these new updates and apply them to a test group of devices. Following a successful test, the remaining devices can be updated in a staged approach. Full status tracking combined with ZENworks Reporting Services, supplies administrators with progress and compliance reports for upper management. All of these actions are achieved within ZENworks web console without requiring anything more than a series of mouse clicks. Ease of use makes patch Tuesday nothing more than another day of the week. **SCCM:** Identifying, testing, deploying and tracking new updates with SCCM is not straightforward. The first hurdle, is to identify the newly released updates. This can be done through scheduling, but no automatic notifications are available for administrators. Then groups must be created for testing and staged rollout using SQL queries. Finally, any status reports must be generated via SQL queries to provide compliance updates. For the SCCM administrator, patch Tuesday is the new Monday.
High level overview from console dashboard	**Novell ZENworks 11:** Simply select the dashboard in the ZENworks console to see the compliance status for the managed device estate. **SCCM:** Dashboard in SCCM console is limited to showing compliance by a particular month. There is no graphical way of quickly seeing if the entire managed device estate is compliant or not.
Inform administrators when new patches are available	**Novell ZENworks 11:** Allows you to use e-mail notification whenever new patches are detected. You can decide which e-mail address is used to send notifications and you can also specify the recipients. This enables administrator to be easily kept up to date on new vulnerabilities that may require their attention. **SCCM:** Administrators need to repeatedly log into the console to determine if there are new vulnerabilities that need to be dealt with. SCCM does not not indicate which vulnerabilities are new

Capability	Comparison
Enforce corporate patch standards - baseline	**Novell ZENworks 11:** Baseline is an administrator defined patch level that all devices within a group must meet. If any device within the group becomes out of compliance, the missing patches will be applied automatically. Its an effective way of ensuring that devices which only periodically connect or are freshly deployed from an os image are kept up to date even though they may have missed a scheduled update. **SCCM:** Offer a very similar mechanism but is let down by grouping. Grouping within SCCM often involves writing SQL queries and these become complex very quickly. A poorly written SQL query will consume excessive resources on the SQL server and slow down other SCCM activities.
Custom patches	**Novell ZENworks 11:** While ZENworks 11 supports vulnerability assessment and patching for a number of vendors, there is often a need to create custom patches. You might have in-house, industry specific or other applications that require patching. With ZENworks 11 you can create custom patches as you would a software bundle, and assign them to the patch management system, where they are treated like any other patch **SCCM:** System Center Updates Publisher (SCUP) from WSUS can be used to create custom patches for use with SCCM. However, this is not as flexible as Novell ZENworks 11. For example, it is not possible to notify users of what is happening during the patch deployment. Also, you must choose a location to download patches, before importing them into SCCM. It would be reasonable to expect this to be automatic. Another challenge is that you cannot select multiple patches for deployment, rather you must create an update list to assign the patches to.
Straight forward deployment process	**Novell ZENworks 11:** Your administrators need only to decide what updates should be applied, how to apply them and when. Everything else happens automatically. **SCCM:** Although there is a wizard to guide your administrators, they will find that the deployment options are not as flexible as Novell ZENworks. For example, it is not possible to give end users an information description of what is happening. Rather strangely, a location must be chosen where WSUS can download patches before importing into SCCM. It would be reasonable to expect this to be automatic. To add to the confusion, it is not possible just to select multiple patches for deployment. Your administrator will need to remember to create an update list and drag patches onto it.

Capability	Comparison
Search patch database to find critical update service packs, etc..	**Novell ZENworks 11:** The list of displayed patches can easily be filtered by Impact (critical, recommended, informational, installers), Platform (Windows / Linux) and Vendor. This enables administrators to quickly determine if a particular patch is of interest to your organization. **SCCM:** The legacy drill down console hinders administrators in finding individual patches. They must first browser all of they down to the OS and only then can they find the relevant patch.

Summary

Finding the best possible approach to configuration management has a major long-term impact on an IT organization. This document has presented why the unique management paradigms in Novell ZENworks Configuration Management 11: management by exception, device-based and user-based management, and strong capabilities to address a diverse set of endpoint management challenges, positions Novell ZENworks Configuration Management 11 as a credible alternative to Microsoft's System Center Configuration Manager.

Customers using Novell ZENworks Configuration Management will find that the range of capabilities offered by this solution does meet their IT requirements and provides real business value to their organization in terms of improved IT service levels, increased end user productivity, risk mitigation , and lower IT operating costs.

Glossary of Terms

Bundles

A collection of actions and conditions to make configuration changes to a managed device. This may be an application installation, file copy or even an entire operating system. Bundles can be assigned to users from a directory source, such as eDirectory or Active Directory, or devices. Or even both.

I.T.I.L.

ITIL is a consistent and comprehensive documentation of best practice for IT Service Management. Used by many hundreds of organizations around the world, a whole ITIL philosophy has grown up around the guidance contained within the ITIL books and the supporting professional qualification scheme. ITIL consists of a series of books giving guidance on the provision of quality IT services, and on the accommodation and environmental facilities needed to support IT. ITIL has been developed in recognition of organizations' growing dependency on IT and embodies best practices for IT Service Management. The ethos behind the development of ITIL is the recognition that organizations are becoming increasingly dependent on IT in order to satisfy their corporate aims and meet their business needs. This leads to an increased requirement for high quality IT services.

Primary server

A server with Novell ZENworks installed. There maybe one or more primary servers in a single Novell ZENworks zone all connected to a single database.

Satellite

A Novell ZENworks managed device acting as a content repositories and inventory collection point.

SCCM

System Center Configuration Manager 2007 assesses, deploys, and updates servers, clients, and devices. It is built on Microsoft technologies, such as Microsoft Windows Server Update Services (WSUS), Windows Server Active Directory.

WSUS

Windows Server Update Services is Microsoft's vulnerability and remediation application. It is built on Windows Server and requires the use of MS SQL server to store the information that it collects. WSUS can be managed using its own console along with Active Directory Group Policies or by SCCM.

V.N.C.

Virtual Network Computing (VNC) is a graphical desktop sharing system which uses the RFB protocol to remotely control another computer. It transmits the keyboard and mouse events from one computer to another, relaying the graphical screen updates back in the other direction, over a network. VNC is platform-independent — a VNC viewer on any operating system usually connects to a VNC server on any other operating system. There are clients and servers for almost all GUI operating systems and for Java. Multiple clients may connect to a VNC server at the same time. Popular uses for this technology include remote technical support and accessing files on one's work computer from one's home computer, or vice versa.

Zone

A collection of Primary servers, satellites and managed devices configured and managed using information in a single database.

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