

IBM Tivoli Provisioning Manager

Highlights

- Discover and track data center resources to enable highly accurate deployments
- Support a wide variety of devices with a single, easy-to-use, manageable system
- Help minimize the cost of managing resources by automating your best practices for common change and release management activities — saving time and avoiding errors
- Facilitate efforts to consistently follow your own policy and preferred configurations, in support of corporate and regulatory compliance efforts
- Help optimize availability by maintaining configurations and managing change to resources

Increasing complexity in IT environments threatens the ability of companies to deliver innovative solutions for their customers. Rather than concentrate on innovation, skilled information technology (IT) staffs currently spend their time on mundane or repetitive tasks such as:

- Maintaining an accurate inventory of resources.
- Patching servers and desktops.
- Deploying operating systems.
- Troubleshooting unauthorized configurations.

Because these tasks are often completed manually and in an impromptu fashion rather than in an automated, coordinated manner, inefficiencies and errors are much more likely to occur. In fact, human error is the leading cause of downtime that impacts service level performance.* Furthermore, manual and uncoordinated IT operations make it nearly impossible to adapt quickly in an era when flexibility and agility are crucial.

IBM Tivoli® Provisioning Manager gives you a single integrated solution for addressing these challenges. The software includes an extensive set of inventory, OS provisioning, software distribution and patch management capabilities on a service oriented architecture (SOA). By combining these capabilities with the flexible Tivoli Provisioning Manager task automation engine, your organization can fully automate custom procedures that may require additional configuration changes to network, storage or virtual server resources.

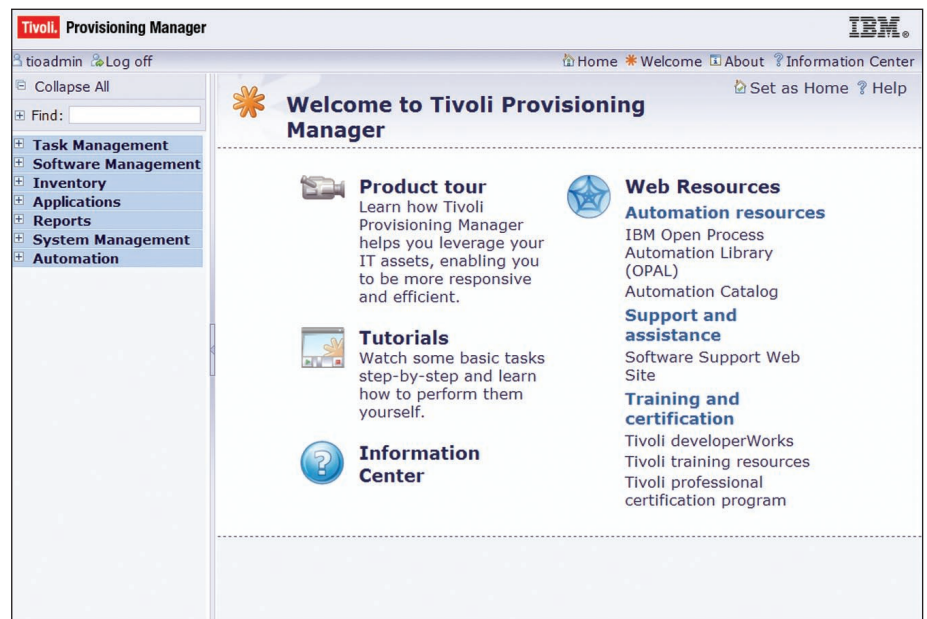
Tivoli Provisioning Manager also helps you implement IT service management initiatives. For example, if your organization strives to improve the release management process, you can use Tivoli Provisioning Manager to automate key process steps such as release targeting, testing and deployment. By managing the overall process and

automating the execution of operational tasks, you help optimize the efficiency and accuracy of deployments — and thereby help maximize business agility.

Tivoli Provisioning Manager provides an easy-to-use solution for automating common IT operations. It installs easily and delivers substantial value quickly. Its highly usable interface helps your employees access the information and tools they need to be more productive.

Deploy operating systems efficiently

When it is time to upgrade an operating system or to ensure that systems are compliant with business standards, many organizations instead prefer to reinstall operating systems. Desktops or servers that have been used for a long period of time may become infected with viruses, spyware and little-used but incompatible code. If the operating system is simply upgraded, the potential problem might remain hidden until some event turns the problem into a security threat to the organization. But by installing the new operating system with your tested and approved standard configurations, you can be very effective at enforcing configuration compliance and improving overall system health.



From the Tivoli Provisioning Manager welcome screen, users can take advantage of some additional features, like the product tour, tutorials, the information center and Web resources.

Tivoli Provisioning Manager can be used to automate initial operating system deployment and reprovision on an “as needed” basis to keep your systems in line with your business standards. This automated operating system deployment can be used to facilitate desktop migrations, hardware refreshes or simply for operating system reinstallation following a desktop machine repair. Tivoli Provisioning Manager provides cross-platform support for Microsoft® Windows® and Linux® operating system deployments as well as extensive integrated support for IBM AIX®, Sun Solaris and HP-UX.

You can leverage the embedded boot server to efficiently deploy Windows and Linux operating systems to x86-compatible servers and desktops. Additionally, you can clone existing systems and deploy images quickly to bare-metal machines.

Because Tivoli Provisioning Manager enables you to handle device drivers separately from core OS images, you help minimize the number of image variations you need to support your diverse hardware environment. As a result, you help to greatly simplify the OS provisioning process and enable dynamic repurposing of server resources.

You can also use Tivoli Provisioning Manager to:

- Migrate user data and preferences from one machine or operating system to another.
- Install applications that the users need to perform their jobs above the operating system.
- Restore workstations after configurations or registries become corrupt, hardware fails or data is destroyed by viruses.

Because Tivoli Provisioning Manager performs these repetitive tasks in an automated fashion, it helps minimize costly human errors. To further drive efficiency, the very fast and scalable Tivoli Provisioning Manager boot server technology enables you to:

- Support distributed offices by using “master” and “slave” boot server nodes.
- Perform differential image captures to reduce network traffic.
- Automatically synchronize boot server images between boot server nodes.
- Cache a previously used operating system on the hard disk for swift restoration.
- Create a single universal image that can be used across hundreds of hardware configurations.
- Collect hardware inventory before installing an operating system.

Discover and understand your resources

Efficient, effective IT management requires access to up-to-date, complete information about your desktops, servers and other IT assets. Working from incomplete or inaccurate information leads to errors and inefficiency.

To address these challenges, Tivoli Provisioning Manager leverages many years of discovery and inventory expertise that went into IBM Tivoli Configuration Manager. By using enhanced discovery capabilities and importing information from other discovery technologies, Tivoli Provisioning Manager can collect and consolidate information about resources throughout the IT infrastructure.

Tivoli Provisioning Manager has out-of-the-box discovery mechanisms for:

- Hardware configurations — network cards, memory, disk and peripherals attached to clients and servers.
- Software configurations — operating system, middleware and application (both commercial off-the-shelf and home-grown) software.
- Virtual server attributes.
- Storage attributes.
- Network attributes.
- More.

Tivoli Provisioning Manager stores the information it discovers in a centralized inventory database. Consequently, you can use Tivoli Provisioning Manager to manage detailed information across many platforms.

Furthermore, its flexible discovery engine integrates with a variety of technologies, such as:

- IBM Tivoli Change and Configuration Management Database (CCMDB) to federate configuration item data throughout the enterprise. Tivoli CCMDB serves as an IT service management integration platform.
- Existing boot servers to automate tasks and reduce duplication across different platforms. Examples include Microsoft Windows Server Automated Deployment Services (ADS), IBM AIX Network Installation Management (NIM), Red Hat Kickstart, HP-UX Ignite and Sun Solaris JumpStart.
- Microsoft Active Directory® to facilitate discovery of new machines, users and groups. Integration with Active Directory also helps you target software distributions to groups of defined users.

Efficiently and reliably distribute software and content

Tivoli Provisioning Manager provides scalable, grid-like software distribution capabilities based on SOA that

are ideally suited to distributed environments. The distribution process is based on a simple mechanism to:

- *Publish* the software package on selected depot servers.
- *Distribute* the software products to selected targets, giving you the opportunity to specify multiple software packages and the order of installation.
- *Install* the software package on the selected targets.

You can use this mechanism to immediately push out an urgent patch — a “fire drill” that IT staff responsible for Windows environments know all too well — or to schedule a future rollout of a large software update on a key date.

This mechanism also helps you customize application deployments to meet the needs of your environment. You can optionally leverage existing software packages, such as those you created in Tivoli Configuration Manager. Additionally, you can also use the software package editor included with Tivoli Provisioning Manager to:

- Create packages for custom applications.
- Repackage standard package formats, such as Microsoft Installer (MSI) or PKG, with additional pre- or post-processing scripts.

Many organizations use their software distribution models and processes to distribute a wide variety of content throughout the enterprise, such as pricing updates, training files and more. To address this need, Tivoli Provisioning Manager offers a dynamic content delivery infrastructure that provides the appropriate security and reliable, efficient distribution.

To help maximize the security of content and software packages, Tivoli Provisioning Manager encrypts the data using the Advanced Encryption Standard (AES). The data is encrypted at each step until it reaches the desired application or end point — when it resides on the management server, in transit on the network and when stored on depots, peers or targeted clients.

Monitor compliance

Regulations such as Sarbanes-Oxley — and the wide variety of corporate policies designed to address them — demand that IT teams bring clients and servers into alignment with corporate security policies and IT configuration standards. IT must also be able to quickly identify when devices become noncompliant and take the steps necessary to bring the devices back into compliance.

Tivoli Provisioning Manager helps you automate many steps involved in compliance efforts. For example, the software gives your team an integrated way to manage patches on Windows, Linux, Solaris and AIX. Your staff can be more efficient and avoid errors.

The software includes both out-of-the-box compliance capabilities and the ability to write your own compliance workflows, giving you the flexibility to support your unique interpretations of the particular regulations you face — making it easier for them to implement your best practices consistently.

In addition to sending notifications to administrators when a particular task begins or is completed, Tivoli Provisioning Manager can automatically inform administrators when problems occur. Notifications can be initiated based on:

- Start of a software distribution.
- Percentage of failures.
- Number of failures.
- Completion of a distribution.
- Other predefined tasks and automation workflows.

Additionally, you can define server and storage resource templates, which

represent ideal configurations for your devices, from within Tivoli Provisioning Manager. These templates can be used during initial deployments and for ongoing configuration definitions.

Leverage an easy-to-use solution

Tivoli Provisioning Manager has been designed to make initial installation and configuration of the software as simple as possible. The embedded boot server for Intel® systems, out-of-the-box discovery mechanisms and compliance capabilities are just a few examples. Each of them helps customers gain substantial value in a few hours after installation, rather than requiring days or weeks of detailed configuration.

To help optimize the efficiency of your IT staff, the streamlined user interface simplifies and minimizes the steps required to complete operational tasks. Additionally, because Tivoli Provisioning Manager integrates with elemental tools in your environment, your IT operators only need to learn a single tool to provision and configure heterogeneous resources.

Another important way that Tivoli Provisioning Manager delivers substantial value and usability is through its enhanced and simplified reporting

capabilities. The Web-based reporting tool features a number of predefined reports, such as the latest security, software or patch compliance status of clients and servers. You can also use the software's query builder to create, customize and adapt reports to your particular needs.

Information can be displayed in a variety of graphical formats, including bar and pie charts, and these reports can be shared with business executives, other organizations, third parties and customers by automated e-mail and by exporting to Microsoft Excel (through comma-separated values [CSV] files), PDF, HTML and more. When you have complicated information made available to you in easy-to-understand formats, you can make highly informed decisions and facilitate efforts to comply with corporate audit requirements.

Conclusion

Tivoli Provisioning Manager is an integrated tool for provisioning resources across your environment. It helps you automatically provision software and configurations to Windows servers and clients, as well as Linux and UNIX® physical and virtual servers. Beyond servers, software and operating

systems, Tivoli Provisioning Manager also includes best-practice automation packages for storage, security and network tasks.

Because of the breadth of devices that it supports, its integrated discovery and inventory capabilities, and its ease of use, Tivoli Provisioning Manager represents a valuable tool for driving IT operational efficiency to help minimize costs and maximize business flexibility.

About Tivoli software from IBM

Tivoli software from IBM helps organizations efficiently and effectively manage IT resources, tasks and processes in order to meet ever-shifting business requirements and deliver flexible and responsive IT service management, while helping to reduce costs. The Tivoli portfolio spans software for security, compliance, storage, performance, availability, configuration, operations and IT lifecycle management, and is backed by world-class IBM services, support and research.

For more information

To learn more about how you can use Tivoli Provisioning Manager to optimize device life-cycle management, contact your IBM representative or IBM Business Partner, or visit ibm.com/tivoli

Tivoli Provisioning Manager at a glance

Hardware requirements

Managing server hardware requirements (manage from server):

IBM System p™

AIX 5.2, 5.3

Red Hat Enterprise Linux 4.0

SUSE Linux Enterprise Server 9

- 1GHz CPU
- 4GB available memory
- 20GB available disk space

IBM System i™ models with LPAR support
(450CPW minimum in Linux partition)

Red Hat Enterprise Linux 4.0

SUSE Linux Enterprise Server 9

- 4GB available memory
- 20GB available disk space

IBM System z™ (IBM S/390®, 31-bit/64-bit)

SUSE Linux Enterprise Server 9

IBM-compatible PC with Windows processor or equivalent

Red Hat Enterprise Linux 4.0

SUSE Linux Enterprise Server 9

Windows XP Standard (POC only)

Windows XP Professional Server (POC only)

Windows Server 2003 Standard, Enterprise

- 2.8GHz Intel Pentium® 4 processor or equivalent
- 4GB available memory
- 20GB available disk space

IBM-compatible PC with AMD64/Opteron processor

Red Hat Enterprise Linux 4.0

SUSE Linux Enterprise Server 9

Windows 2003 Standard, Enterprise

- 2.8GHz Pentium 4 processor or equivalent
- 4GB available memory
- 20GB available disk space

Sun SPARC Server with Solaris 9, 10

(64-bit only)

- 1GHz CPU
- 4GB available memory

Software requirements

Managing server hardware requirements (manage from server):

One of the following operating systems

- AIX 5.2, 64-bit or AIX 5.3, 64-bit
- Red Hat Enterprise Linux 4.0, Intel and Power PC
- SUSE Linux Enterprise Server 9, 10, Intel and SUSE Linux Enterprise Server 9
- Windows Server 2003 Standard, Enterprise
- Solaris 9 and 10, 64-bit

Supported IT resources (managed to):

Many of the leading vendor products that Tivoli Provisioning Manager supports are listed. The list is dynamic and extensive, so please visit our Web site to access the most current list and additional details at ibm.com/tivoli/products/prov-mgr/platforms.html

Middleware:

Tivoli Provisioning Manager can manage and provision a growing list of middleware products, including Citrix for XP Presentation Server farm, Microsoft SQL Server, Microsoft Exchange, Siebel, VMware and others.

Tivoli Provisioning Manager at a glance (continued)

Servers with the following operating systems can be managed:

- AIX 5.1, 5.2, 5.3
- Solaris 8, 9, 10 (64-bit)
- HP-UX 11i, Version 1 on pa-risc
- Windows 2000 Professional, Server, Advanced
- Windows XP Professional
- Windows Server 2003 Standard, Enterprise
- Red Hat Enterprise Linux 3.0, 4.0
- SUSE Linux Enterprise Server 8, 9 for IA32
- SUSE Linux Enterprise Server 8, 9 for zSeries
- SUSE Linux Enterprise Server 8, 9 for Power PC

Storage:

Tivoli Provisioning Manager integrates with IBM TotalStorage® Productivity Center to provide a storage capacity provisioning solution designed to simplify and automate complex cross-discipline tasks for provisioning storage capacity in the enterprise environment.

Networking devices and nodes:

Tivoli Provisioning Manager supports a broad range of networking devices and nodes, including firewalls, routers, switches, load balancers and power units from leading manufacturers such as Cisco, Foundry Networks, Extreme, Alteon, F5 and others.



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*Zeus Kerravala. "As the Value of Enterprise Networks Escalates, So Does the Need for Configuration Management," The Yankee Group Report, January 2004.

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