IBM

Tivoli® software

IBM Tivoli Application Dependency Discovery Manager

Highlights

■ *Gain a clear, comprehensive view of interdependencies between applications, computer systems and network devices, using agent-less and credential-free discovery and automated application mapping*

■ *Learn how applications, computer systems and network devices are configured and changing over time*

■ *Determine if configurations comply with your policies*

■ *Increase efficiencies by using open APIs to share information between operational management products*

■ *Leverage a foundational data store and a rich set of analytics to enable IT processes such as change and configuration management*

■ *Use a secure solution that scales to handle your needs*

IT has always been charged with aligning their resources with business goals. The challenge lies in accurately understanding a changing set of interdependent IT resources that support specific, customer-facing services. To accomplish this, IT needs application service visibility to:

- *Know what configuration items (CIs) they have.*
- *Learn how their CIs are configured and changing over time.*
- *Determine if their CIs are compliant.*

A clear view of CIs that comprise services and their interdependencies can enable IT to enhance their Service Support strategy and to achieve business alignment. Key to efficient IT Service Management (as defined in IT Infrastructure Library® [ITIL®] guidelines) is IT's ability to accurately assess what changes have been made within the infrastructure—and to determine how

the changes will impact business services. Application visibility shows which applications may be affected by a change and how that change may affect the dependencies of that application.

An effective IT Service Management approach must enable users to answer the following important questions:

- *What applications do I have, and what are their dependencies?*
- *How are these applications and their dependencies configured across my infrastructure now, and how they have changed over time?*
- *Are these applications and dependencies compliant with our internal policies for standardized configurations?*

IBM Tivoli® Application Dependency Discovery Manager is a robust application mapping and discovery tool that gathers an inventory of applications, their configurations and their dependencies, helps you understand change and helps address compliance through detailed reports and auditing tools.

Know what you have

With global workforces, multiple remote offices, siloed management tools, and mergers and acquisitions so common today, it is not unusual for IT to simply

not know all of the applications and dependencies that exist throughout their organization. In turn, limited service visibility can make it difficult to answer questions such as:

- *Is there a customer-facing application that relies heavily on a database maintained by someone in finance?*
- *What if a change is made to that database and it causes a dependent application to go down?*
- *Are your company and its reputation at risk?*

Without complete service visibility, it is impossible to provide effective IT Service Management. Tivoli Application Dependency Discovery Manager is designed to enhance IT Service Management through the ability to create and maintain maps that describe run-time dependencies and include deep configuration values and accurate change histories. The software performs discovery and stores information on:

- *Applications (both distributed and mainframe), including their dependencies.*
- *Servers that are hosting applications, both in the distributed world and on mainframes.*
- *Networks (routers, switches, load balancers).*

- *The relationships across all, from layer 2 to layer 7 of the Open System Interconnection (OSI) model.*
- *Application dependencies between mainframe and distributed applications.*

It offers visibility into application complexity and supports a wide range of business applications and processes that can benefit from the information it discovers. Mapping the interdependencies in your IT environment—for example, a layer-2 port on a switch and a distributed business application—helps determine how changes to one element unknowingly affect another.

Learn how applications and dependencies are configured

Just as important in your change and configuration management efforts is knowing how applications and dependencies are configured. For example, what are the configuration files on network switches? How are performance and capacity configuration parameters set for Web servers? If a configuration is changed, will that affect the health of a business service? Since it is configuration that determines component behavior—thus affecting service availability—it is imperative to know what, if anything, has changed in an existing configuration and what could
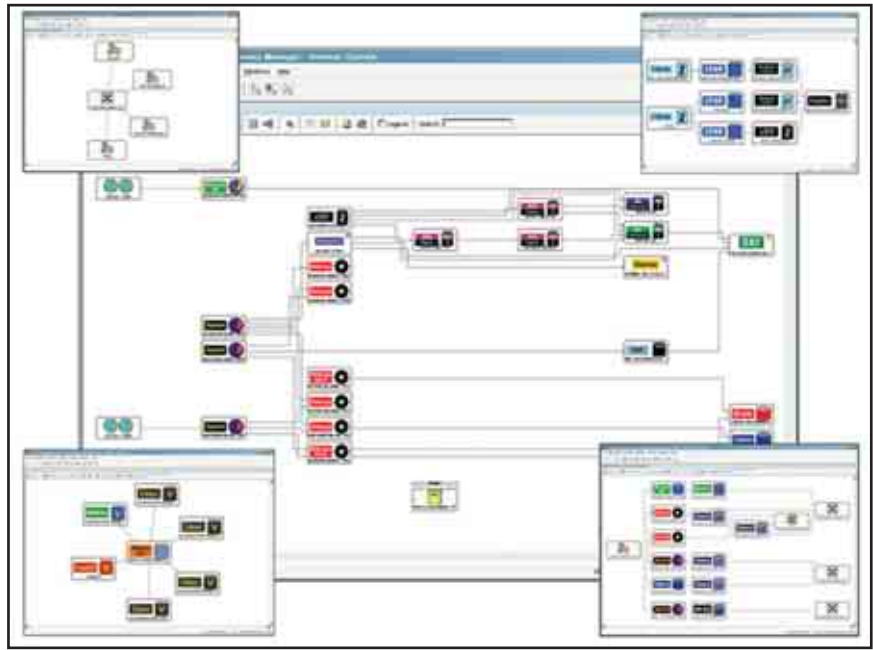
happen if changes occur. Without this knowledge, any changes that are made could have a severe impact on your business and customers.

Tivoli Application Dependency Discovery Manager performs configuration auditing by tracking application changes, depicting that information on application maps and reports, and delivering comprehensive visibility into configuration drift. Because the software can provide "discovery snapshots" about what components of an application have changed, you can help minimize time needed for root-cause analysis.

Obtain visibility into the topology of your cross-tier, business-critical applications via logical software maps or physical maps.

Employ sensors to automate and speed application discovery

Out-of-the-box discovery is provided for most of the components found in the typical data center—across the application software, host and network tiers. Discovery sensors are extensible and reside on the Tivoli Application Dependency Discovery Manager server, where they collect configuration attributes and dependencies that are then organized into application maps and views, including:

- *Software application topology maps.*
- *Cross-tier business application maps showing dependencies between the logical and physical.*
- *Physical infrastructure (including layer 2) maps.*

Use discovery profiles to get the depth of discovery you need

Discovery profiles offer users the flexibility and power to manage discovery in accordance with their needs. These profiles are used to specify three choices: where the user wants to discover, what they are looking for and how deep they want to probe. You can phase in your discovery process— starting with a level-1 lightweight, credential-free discovery of hosts, operating systems and network components—by inspecting the network stack and identifying components by their signatures. This information can

be leveraged as a blueprint showing where you want to conduct deeper discovery. Next, using a level-2 scan, you can probe deeper and capture the configurations of computer systems and application dependencies. Finally, using a level-3 scan, you can perform a deep-dive discovery and capture application configurations.

After installation, the credential-free discovery process can be used to begin building your application topology, with minimal network impact. Agent-less discovery can greatly reduce the CPU load, network bandwidth, maintenance and security costs associated with agent-based approaches. The powerful

topology and task-driven user interface helps minimize training costs and support issues, while decreasing time to value.

New features in Tivoli Application Dependency Discovery Manager, Version 7.1 include:

- *Enhanced reconciliation capabilities, including manual reconciliation and the ability to prioritize data sources and attributes during inline reconciliation.*
- *Performance improvements in response time and scale, along with an enhanced view of business application dependencies across multiple Tivoli Application Dependency Discovery Manager domains.*
- *The ability to create new configuration item groupings (collections) based on the results returned from ad-hoc queries.*
- *Enhanced depth of discovery for IBM z/OS® configurations, along with additional topology views and new Sysplex graph.*
- *Support for single sign-on between Tivoli Application Dependency Discovery Manager and IBM Maximo® technology.*
- *New sensors for IBM System i™, Microsoft® Exchange 2003 and SNMP, Version 3.*

Obtain deep configuration details
Tivoli Application Dependency Discovery Manager provides visibility to plan and manage applications for critical changes that impact IT Service Management, such as:

- *Changes to the configurations of Web servers, application servers and databases.*
- *Application and operating system patches.*
- *Alterations of network configurations.*

The software allows you to view detailed change histories, rapidly isolate changes and minimize problem isolation time. For every discovery, the software automatically creates a delta between the new configuration values and the old ones. In addition, users can create versions of their entire data center and compare these versions in an online report—especially useful when conducting data center consolidation or relocation.

Monitor compliance to support IT Service Management
IT organizations also must know whether or not their applications and dependencies comply with the organization's policies for standardization and configuration consistency. You can use Tivoli Application Dependency

Discovery Manager to compare configurations to a "reference master" to reveal policy violations, and audit the impact of changes to your business processes to ensure they have the expected results.

Facilitate data aggregation, querying and reporting to support compliance
Tivoli Application Dependency Discovery Manager provides a query and reporting facility that helps address internal configuration auditing requirements. Its advanced analytics and reports include:

- *Inventory.*
- *Change history.*
- *Configuration comparisons.*
- *Dormant components.*
- *Data center versions.*
- *Switch topology.*
- *Query-by-forms of the configuration management database.*

Augment application maps with queries into other IT data sources using the federation capabilities of Tivoli Application Dependency Discovery Manager, to point to data in the repositories of other IT management products. Then use the information to address compliance, governance and IT Service Management issues.

Easily integrate with other products and processes

For easy integration, Tivoli Application Dependency Discovery Manager was built with:

- *An open architecture.*
- *Robust and open application programming interfaces (APIs).*
- *A pluggable sensor framework.*
- *An extensible model.*
- *Support for data reconciliation plug-ins and configuration change events.*
- *A complete, easy-to-use software development kit (SDK).*

Use these to deploy and share application maps across management products, teams and processes, and to create closed-loop service management systems and processes. In addition, the software integrates with other Tivoli operational management products, such as IBM Tivoli Business Systems Manager, IBM Tivoli Monitoring, IBM Tivoli Network Manager, IBM Tivoli Provisioning Manager, IBM Total Productivity Center for Storage, IBM Tivoli Composite Application Manager for SOA and many more. Tivoli Application Dependency Discovery Manager is a major component of IBM Tivoli Change and Configuration Management Database (CCMDB), providing the core services for discovery, configuration auditing,

reconciliation and federation. Tivoli Application Dependency Discovery Manager SDK features include:

- *Java™, command line interface (CLI) scripting and Simple Object Access Protocol (SOAP) wrapper libraries.*
- *Complete documentation of the IBM Common Data Model.*
- *Prepackaged integration tools, including libraries for XML Query Language and extensible style language translation (XSLT).*

Take advantage of the security and scale offered by Tivoli Application Dependency Discovery Manager

During discovery, Tivoli Application Dependency Discovery Manager uses industry-standard security protocols such as Secure Shell (SSH), Java Management Extensions (JMX) and Microsoft Windows® Management Instrumentation (WMI) to access sensitive data. It can also perform discovery across firewall zones without compromising security or requiring policy changes.

The software scales to handle thousands of servers across multiple domains incurring minimal server load and nominal network utilization. Large enterprises can deploy multiple servers, with each managing an individual operational instance. Application infrastructure data from individual operational

instances or domains can be consolidated by the central Tivoli Application Dependency Discovery Manager Enterprise Domain Server for an enterprise-wide, dashboard view of IT.

For more information

To learn more about how Tivoli Application Dependency Discovery Manager can help maximize visibility into your applications and dependencies to support IT Service Management, contact your IBM representative or IBM Business Partner, or visit **ibm.com**/tivoli

About IBM Tivoli service management software

Tivoli service management software offers a platform for organizations to achieve the visibility, control and automation they need to deliver quality service. Unlike IT-centric service management, Tivoli service management software delivers a common foundation for managing, integrating and aligning business and technology requirements. Tivoli service management software is designed to quickly address an organization's most pressing systems management needs and help proactively support changing business demands. The Tivoli portfolio is backed by world-class IBM Services, IBM Support and an active ecosystem of IBM Business Partners. Tivoli customers and business partners can also leverage each other's best practices by participating in independently run IBM Tivoli User Groups around the world — visit www.tivoli-ug.org

Tivoli Application Dependency Discovery Manager at a glance

Tivoli Application Dependency Discovery Manager provides prebuilt discovery for the following:

Operating systems:

- IBM AIX®
- HP-UX
- Linux®
- Solaris
- Windows servers
- VMware ESX
- HP OpenVMS
- IBM System p™
- Citrix
- z/OS
- Tru64
- System i

Network devices:

- Load balancers (F5, Alteon)
- Network firewalls (Cisco, NetScreen, Check Point, Nokia IPSO)
- Cisco routers and switches
- CiscoWorks
- HP ProCurve switches
- Extreme switches
- Routers
- Switches
- SNMP, Versions 2 and 3

Storage devices:

- Support for storage connected via host bus adapters (Emulex and QLogic)
- SANs and network attached storage via integration with IBM TotalStorage® Productivity Center
- Sun Fire Servers (limited availability)

Third-party network and systems management products:

- CiscoWorks
- SMS 2003
- Veritas Cluster Server and Volume Manager (limited availability)

Packaged applications:

- SAP

Tivoli Application Dependency Discovery Manager at a glance

Virtualized environments:

- VMware ESX
- System p LPARs
- z/OS LPARs
- Solaris Zones (limited availability)

Web servers:

- Apache
- SunONE (iPlanet)
- IBM HTTP Server
- Microsoft IIS

Application servers:

- IBM WebSphere®
- BEA WebLogic
- JBoss
- Apache Tomcat
- Oracle Application Server

Messaging servers:

- IBM WebSphere MQSeries®
- IBM Lotus® Domino® Server
- Exchange 2003

z/OS applications (from the z/OS DLA):

- IBM CICS®, IBM IMS™, IBM DB2® for z/OS, IBM MQ for z/OS, IBM WebSphere for z/OS

Databases:

- DB2
- Oracle
- Sybase
- Microsoft SQL 2000

Network services:

- Lightweight Directory Access Protocol (LDAP)
- Network File System (NFS)
- Domain Name Server (DNS)
- Microsoft Active Directory®
- Microsoft Windows File Server (Samba)

Tivoli Application Dependency Discovery Manager at a glance

Installation server requirements:

- AIX 5.2 or 5.3 (IBM PowerPC®)
- Solaris 9 or 10 (SPARC)
- Red Hat Enterprise Linux 4.0 or 5.0 x86 (32- or 64-bit)
- Red Hat Enterprise Linux 4.0 or 5.0 for IBM System z™
- SUSE Linux Enterprise Server 9.0 or 10.0 x86 (32- or 64-bit)
- SUSE Linux Enterprise Server 9.0 or 10.0 for System z
- Microsoft Windows Server® 2003 Standard, Enterprise or Datacenter (32- or 64-bit)
- 2 – 4 CPUs (2 GHz) minimum
- 4 – 8 GB RAM
- 4 – 8 GB of swap space on the disk for usage by the OS
- 100 GB disk space

Database requirements:

- IBM DB2 Universal Database™ 8.2, 9.1
- Oracle 9i, 10 *g*

Client requirements:

- Web browser: Internet Explorer 7.0 and Firefox 2.0
- Java 2 Runtime Environment (JRE) 1.5
- Video card that supports 16-bit color at 1,280x1,024 resolution

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