



IBM Tivoli System Automation for Multiplatforms

Highlights

- **Reduce the frequency and duration of incidents that impact IT availability**
- **Address unplanned outages caused by hardware failures, software failures and operator errors**
- **Reduce operational costs with advanced clustering configurations to help minimize hardware requirements**
- **Ease operational management of complex IT infrastructures through advanced, policy-based automation**
- **Build and edit policy sets quickly and easily through an enhanced configuration graphical user interface**
- **Extend robust business continuity to Linux on System z through the xDR component**

Today's heterogeneous and virtual IT environments support IT services and composite applications with complex resource dependencies. As a result, it can necessitate countless hours to manage these complex operations. While the costs of downtime due to outages can be staggering, maximizing end-to-end service availability often translates into labor-intensive, error-prone efforts to manually initiate, execute and coordinate high-availability operations.

IBM Tivoli® System Automation for Multiplatforms helps systems administrators easily manage complex IT infrastructures, while moving the IT organization from reactive error correction to proactive service protection. A high-availability solution with advanced automation capabilities, Tivoli System Automation for Multiplatforms initiates, executes and coordinates the starting, stopping, restarting and failing over of individual application components or

entire composite applications. Through these capabilities, systems administrators can more effectively:

- *Detect failing IT components and help reduce the frequency and duration of incidents that impact IT availability.*
- *Manage planned outages and guard against and address unplanned outages caused by hardware failures, software failures and operator errors.*
- *Reduce costs by automating manual, labor-intensive and error-prone operational tasks and by leveraging advanced clustering configurations to minimize hardware requirements.*
- *Prevent failures by automating a recovery process or workflow.*
- *Ease management of complex IT infrastructures through advanced, policy-based automation.*

Support for numerous environments enables maximum flexibility

With support for a number of hardware and operating system environments, including Microsoft® Windows®, IBM AIX®, Linux®—including Linux on IBM System z™—and Solaris, Tivoli

System Automation for Multiplatforms can help meet high levels of availability for business services, improve business flexibility and satisfy strict service level requirements.

To help minimize operator skills required to support numerous heterogeneous platforms and virtualization technologies, Tivoli System Automation for Multiplatforms provides a standard toolset that supports multiple failover scenarios involving both physical and virtual environments. These include the major virtualization technologies for supported platforms, including IBM z/VM®, VMware and the new virtualization features within AIX 6. Support for various virtualization topologies includes the ability to failover physical to physical, virtual to virtual, virtual to physical and physical to virtual.

Advanced automation engine helps reduce costs and downtime

Unlike traditional clustering technologies, Tivoli System Automation for Multiplatforms can run groups of applications and resources on any server in the cluster, utilizing knowledge stored in its policy definitions. The advanced automation engine enables continuous high availability even in the face of multiple failures over time. After a failover occurs and the failed server is recovered, that server will automatically

be a candidate for the recovery of future failovers. If yet another failure is encountered, Tivoli System Automation for Multiplatforms can continue to provide high availability by failing over to the newly recovered server.

Tivoli System Automation for Multiplatforms can also accommodate sophisticated clustering configurations, including n:1 or n:m configurations, to help reduce the number of required hardware servers. For example, if there is a need for three active servers for a particular application, then a 1:1 configuration would require six total servers, while n:1 would only require four. When applications can be collocated on the same server, Tivoli System Automation for Multiplatforms can provide high availability for servers in a cluster without a single additional server.

Plug-and-play policies deliver out-of-the-box availability

Tivoli System Automation for Multiplatforms provides plug-and-play policies—available through the Open Process Automation Library (OPAL) Web site—enabling out-of-the-box availability for multiple applications and middleware. The policies enable you to use best practices for failure detection and recovery, resulting in operational

cost savings and continuous high availability. Solutions enabled by the software include:

- *IBM DB2®.*
- *SAP.*
- *IBM Tivoli Monitoring.*
- *IBM Tivoli Change and Configuration Management Database (CCMDB).*
- *IBM Tivoli Application Dependency Discovery Manager.*
- *Oracle.*
- *IBM Tivoli Storage Manager.*
- *IBM WebSphere® Application Server.*
- *IBM WebSphere MQ.*

Ease-of-use features speed detection and conserve expert resources

Tivoli System Automation for Multiplatforms offers numerous ease-of-use features designed to help speed outage detection and automate corrective actions. For example, the ability to define resource dependencies to quickly associate conditions with resources can free operators from remembering application components and relationships, as well as enable them to choose the proper corrective actions within the right context, to reduce errors and improve service levels. In addition, Tivoli System Automation for Multiplatforms helps optimize your IT resource utilization by enabling lower-priority business applications to be shut down while keeping

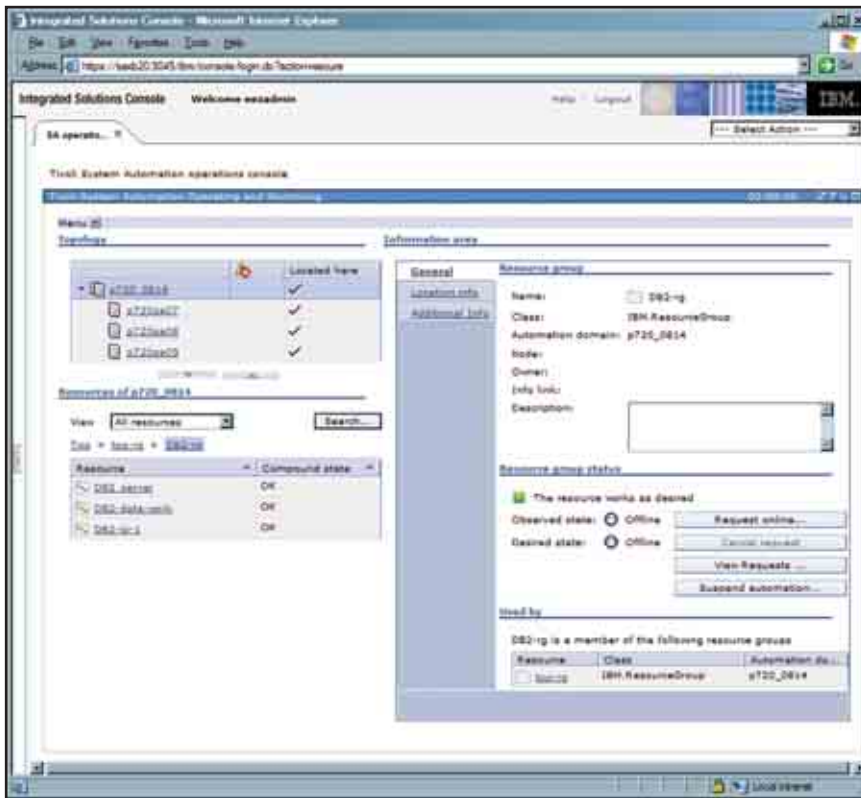


Figure 1. The Web-based operations console provides a single point of control and management for z/OS, Linux, AIX, Solaris and Windows resources.

higher-priority business applications running. Other ease-of-use features include:

- *Plug-and-play policy modules which integrate best practices for key Tivoli and third-party software solutions, allowing out-of-the-box outage detection that reduces operator requirements for manual monitoring and application-level expertise.*
- *Policy-based automation, enabling you to add new resources or systems without rewriting scripts and helping to reduce automation implementation time, coding and support efforts, since no programming skills are required for policy definition.*
- *Automated start, stop and move of complex application environments, which relieves operators from manual command entry and improves efficiency by reducing errors.*
- *Grouping resources, which reduces complexity of operations by automating at the application level, reducing manual intervention and helping to boost efficiency, reliability and serviceability of the IT infrastructure.*
- *Flexible outage response options, such as shutting down the remainder of an application or a failed system, moving a TCP/IP address or recovering data from a log before restarting. You can also stop a resource after another resource is down, or force one resource offline when another enters a down state or is stopped.*

Eliminates the need for extensive programming expertise

Unlike other automation products, Tivoli System Automation for Multiplatforms is policy-based and requires no extensive programming skills to create and maintain scripts and procedures. New resources and systems can be added without rewriting scripts—easing application growth and scalability. You can also use the software to define policies by capturing and storing information about stable system configurations. Then, when configuration problems arise, retrieve this information from a central location to rapidly restore the stable configuration.

Policy editor allows fast policy creation

The policy editor, a configuration graphical user interface within Tivoli System Automation for Multiplatforms, enables you to quickly and easily create and edit policies, without the need to view or edit XML. The graphical display can also make it easier to visualize relationships and dependencies between different items to more efficiently coordinate high-availability operations. In addition, you can:

- *Integrate a policy checker to help quickly detect semantic errors.*
- *Integrate into the IBM Integrated Solutions Console, to use in conjunction with the existing operations console.*
- *Utilize filtering capabilities to efficiently and effectively see and manage relevant resources.*

Extends industrial-strength business continuity to Linux on System z

For customers using System z mainframes, Tivoli System Automation for Multiplatforms introduces an optional xDR component that extends the functionality to provide robust business continuity for Linux on System z. Coordinating with IBM z/OS® and Geographically Dispersed Parallel Sysplex™ (GDPS®)—the world-class disaster recovery solution for z/OS—this component is based on the functionality previously known as GDPS/PPRC Multiplatform Resiliency for System z.

The xDR component extends GDPS to support Linux on System z through:

- *Disk error detection.*
- *Heart-beating and sanity checks.*
- *Re-IPL in place.*
- *Coordinated site takeover.*
- *Coordinated IBM HyperSwap™.*

Manage against a recovery time objective

A central issue in business continuity is the management of recovery times against a recovery time objective (RTO). As a first step to effectively manage recovery times, Tivoli System Automation for Multiplatforms can help you track the amount of time it takes to start, stop and failover applications during general run time. This allows you to better understand the average and maximum times needed for recovery, which can then be used to help ensure a given RTO.

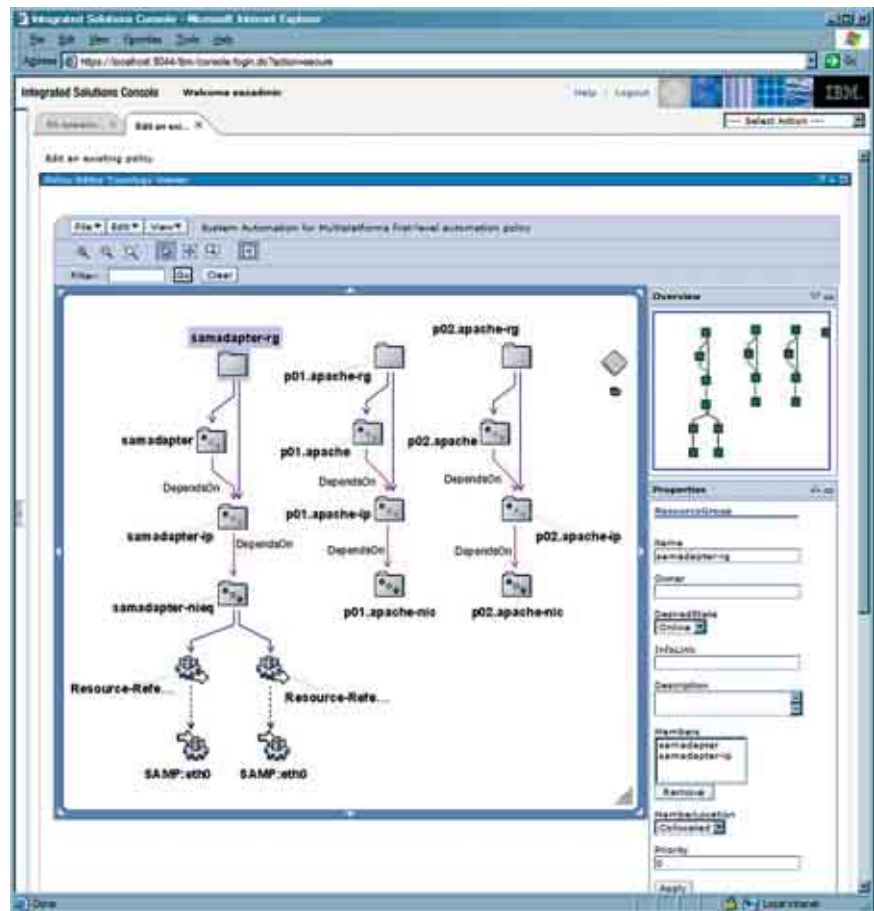


Figure 2. The Policy Editor, an enhanced configuration graphical user interface, enables you to quickly and easily create and edit policies, without the need to view or edit XML.

Leverage your investment in the broader Tivoli portfolio

Tivoli System Automation for Multiplatforms is part of an integrated suite of high availability and event automation offerings that enable systematic implementation and execution of high availability operations across applications, middleware and platforms. Tivoli System Automation for Multiplatforms, in conjunction with IBM Tivoli System Automation Application Manager, offers a standard approach to provide end-to-end availability across heterogeneous IT

operating systems and hardware platforms. Other integration benefits with the broader Tivoli portfolio include:

- *Working in tandem with Tivoli CCMDB—the platform for IBM Service Management—to help ensure high availability of a central and critical component for both service delivery and support.*
- *Offering an industry-leading, highly available database solution when combined with DB2 offerings.*
- *Delivering availability for all critical levels for Tivoli Monitoring and simplified administration through automation.*

Tivoli System Automation for Multiplatforms at a glance

For Intel®-based servers

Hardware requirements:

- IBM System x™ BladeCenter® HS20 and HS40
- Any 32-bit Intel-based server
- Any 64-bit AMD64 or Intel EM64T-based server

Operating system requirements:

- SUSE Linux Enterprise Server 9 (SLES 9) 32-, 64-bit
- SUSE Linux Enterprise Server 10 (SLES 10) 32-, 64-bit
- Red Hat Enterprise Linux 4.0 32-, 64-bit
- Red Hat Enterprise Linux 5.0 32-, 64-bit
- Windows Server® 2003 R2 Standard Edition 32-bit
- Windows Server 2003 R2 Enterprise Edition 32-bit
- Windows Server 2008 Standard Edition 32-bit
- Windows Server 2008 Enterprise Edition 32-bit

For IBM System i™

Hardware requirements:

For System i hardware requirements, refer to www-03.ibm.com/systems/i

Operating system requirements:

- SUSE Linux Enterprise Server 9 (SLES 9) 64-bit
- SUSE Linux Enterprise Server 10 (SLES 10) 64-bit
- Red Hat Enterprise Linux 4.0 64-bit
- Red Hat Enterprise Linux 5.0 64-bit

For IBM System p™

Hardware requirements:

For System p hardware requirements, refer to www-03.ibm.com/systems/p/

Operating system requirements:

- AIX 5.2 32-, 64-bit
- AIX 5.3 32-, 64-bit
- AIX 6.1
- SUSE Linux Enterprise Server 9 (SLES 9) 64-bit
- SUSE Linux Enterprise Server 10 (SLES 10) 64-bit
- Red Hat Enterprise Linux 4.0 64-bit
- Red Hat Enterprise Linux 5.0 64-bit

For System z

Hardware requirements:

- IBM S/390® Parallel Enterprise Server G5/G6
- S/390 Parallel Enterprise Server Multiprise® 3000
- All System z processors

Operating system requirements:

- SUSE Linux Enterprise Server 9 (SLES 9) 32-, 64-bit
- SUSE Linux Enterprise Server 10 (SLES 10) 64-bit
- Red Hat Enterprise Linux 4.0 31-/32-, 64-bit
- Red Hat Enterprise Linux 5.0 31-/32-, 64-bit

For Sun Microsystems servers

Hardware requirements:

- Any SPARC-based server

Operating system requirements:

- Solaris 10



For more information

To learn more about how Tivoli System Automation for Multiplatforms can help your organization protect business services with enterprise-wide automation, contact your IBM representative or IBM Business Partner, or visit

ibm.com/tivoli

About IBM Tivoli service management software

Tivoli software offers a service management platform for organizations to deliver quality service by providing visibility, control and automation—visibility to see and understand the workings of their business; control to effectively manage their business, minimize risk and protect their brand; and automation to optimize their business, reduce

the cost of operations and deliver new services more rapidly. Unlike IT-centric service management, Tivoli software delivers a common foundation for managing, integrating and aligning both business and technology requirements. Tivoli software is designed to quickly address an organization's most pressing service management needs and help proactively respond to changing business demands. The Tivoli portfolio is backed by world-class IBM Services, IBM Support and an active ecosystem of IBM Business Partners. Tivoli clients 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

© Copyright IBM Corporation 2008

IBM Corporation
Software Group
Route 100
Somers, NY 10589
U.S.A.

Produced in the United States of America
May 2008

All Rights Reserved

IBM, the IBM logo, ibm.com, AIX, BladeCenter, DB2, GDPS, Geographically Dispersed Parallel Sysplex, HyperSwap, Multiprise, S/390, System i, System p, System x, System z, Tivoli, WebSphere, z/OS and z/V are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. If these and other IBM trademarked terms are marked on their first occurrence in this information with a trademark symbol (® or ™), these symbols indicate U.S. registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at ibm.com/legal/copytrade.shtml

Intel is a registered trademark of Intel Corporation or its subsidiaries in the United States and other countries.

Linux is a trademark of Linus Torvalds in the United States, other countries or both.

Microsoft, Windows and Windows Server are trademarks of Microsoft Corporation in the United States, other countries or both.

Other company, product and service names may be trademarks or service marks of others.

Disclaimer: The customer is responsible for ensuring compliance with legal requirements. It is the customer's sole responsibility to obtain advice of competent legal counsel as to the identification and interpretation of any relevant laws and regulatory requirements that may affect the customer's business and any actions the reader may have to take to comply with such laws. IBM does not provide legal advice or represent or warrant that its services or products will ensure that the customer is in compliance with any law or regulation.

TAKE BACK CONTROL WITH 