IBM Software
White Paper

IBM InfoSphere Optim solutions for SAP applications

Deploy test data management and impact analysis solutions to help reduce the time, cost, complexity and risk of managing the SAP application life cycle

Executive summary

Businesses in a range of fields depend on SAP applications to support critical business operations and drive new business initiatives in ever-changing marketplaces. To capitalize on the full potential of SAP applications, clients' SAP support and project teams must continuously maintain, enhance and upgrade those applications. They strive to accelerate deployment of application upgrades, support packs and new functionality while staying within tight budgets.

Yet application life-cycle management can be challenging. SAP teams might have limited or no visibility into the impact of changes on their existing—and often highly customized—SAP environment. Consequently, they might use incomplete or flawed data for testing, which could lead to application failures and service disruptions down the road. At the same time, building test environments manually can be costly and time-consuming.

This white paper shows how employing proven test data management and impact analysis capabilities can help improve testing efficiencies, minimize risk and reduce the costs of owning and maintaining SAP applications. By implementing proven capabilities from IBM, you can deliver reliable applications and achieve maximum business value from your SAP application investment.

Why is SAP application testing a challenge?

Clients' internal SAP support and project teams face multiple challenges with application life-cycle management:

- **Accommodating complexity and customization:** SAP applications are complex and highly customized. When new upgrades, support packs, enhancement packs and other technical packages are released, SAP project teams need to ensure that custom modifications to SAP data structures are maintained and are not affected by these life-cycle changes.
- **Gaining visibility into the evolving SAP application landscape:** Organizations need better ways to quickly assess the impact of upgrades and support packs on their existing environments. They must diagnose potential problems that could cause quality standards to slip.
- **Avoiding unforeseen glitches:** Any unforeseen problems could significantly disrupt the production environment. To avoid surprises, organizations must ensure that development and quality assurance (QA) environments are synchronized with the current production environment, so that testing and application delivery go smoothly.
- **Determining test scope efficiently:** SAP project teams need to know what to test. They need insight into how the changes introduced with support or enhancement packs will affect their SAP application testing, so they can use that knowledge to increase testing efficiency. How many variables must they test to ensure a smooth production deployment?
- **Streamlining test data cloning:** Creating clones of volumes for testing is time-consuming and arduous, and it can require tremendous storage capacity. Organizations need ways to streamline this process so they can create multiple test, development and QA processes rapidly, while consuming less storage.

- **Protecting data:** Safeguarding the privacy of personally identifiable data in nonproduction environments is not optional. Organizations must secure sensitive data and comply with government regulations designed to protect personal information from misuse and unintentional disclosure.

So how can businesses facilitate rapid SAP application release cycles while maintaining quality, controlling costs and avoiding disruptions?

Adopt effective system-analysis and testing best practices

By adopting effective system-analysis and testing best practices, IT organizations can successfully test their systems and deploy business-critical SAP updates on time, with minimal business disruption. Implementing best practices can help organizations with the following tasks:

- **Leverage proven diagnostic capabilities to automatically identify SAP system changes and understand their impact:** When building and deploying new functionality, SAP project teams must understand how these changes will affect their existing—and highly customized—SAP environment. Understanding the impact of changes is vital for targeting the right areas for testing. It also enables SAP teams to manage the scope of the project, control costs and reduce risks for both the current life-cycle event and future activities such as upgrades, consolidations and ongoing system maintenance.
- **Efficiently create and manage data for nonproduction environments:** For specific modules, SAP teams must extract subsets of data required for testing, development and training. They also need to set up those extractions as a repeatable process to streamline and speed up current and future testing cycles. Using realistic, referentially intact subsets of production data helps ensure accurate and efficient testing while reducing storage capacity requirements.
- **Minimize sensitive data vulnerabilities in nonproduction application environments:** Protecting data privacy in development and QA environments is necessary to prevent misuse of personally identifiable information and to comply with global data privacy legislation and industry standards. Capabilities for de-identifying confidential data enable businesses to protect privacy while providing the necessary test data to developers and QA staff.

Meet the challenge with IBM InfoSphere Optim solutions

IBM® InfoSphere® Optim™ solutions for SAP applications can help streamline testing and development cycles, improve test coverage, reduce storage requirements, minimize sensitive data vulnerabilities and provide automated impact analysis for a full range of SAP life-cycle events.

IBM InfoSphere Optim System Analyzer for SAP applications

When businesses approach any SAP application update or modification, they must understand how those changes will impact their existing environment. For example, if they install a support pack, will it affect customizations that are already implemented? If they are adding an enhancement pack, do they need to ensure other SAP systems can accommodate the enhancements?

IBM InfoSphere Optim System Analyzer for SAP applications is a diagnostic tool that automatically identifies SAP system changes and helps SAP teams understand the impact of those changes on the entire SAP environment. This SAP-certified, web-based application combines a powerful analytical engine with approximately 200 prebuilt templates to support major life-cycle events, such as the deployment of application upgrades and support packs, and to provide SAP sites with the needed insight to ensure a smooth application delivery.

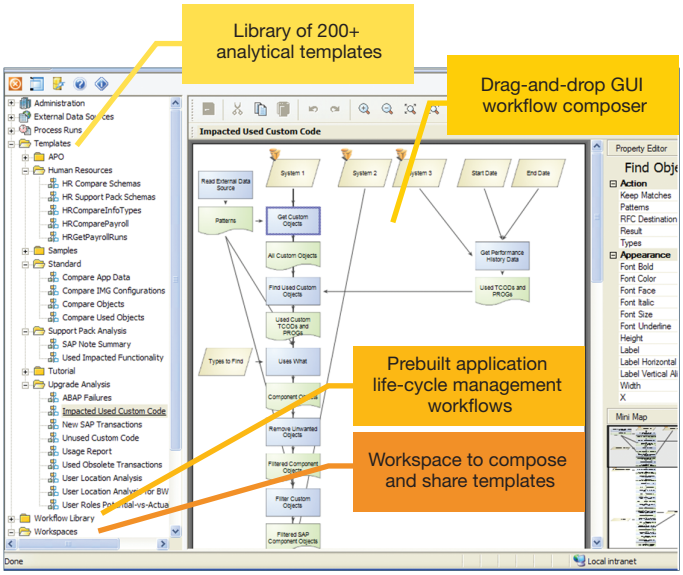

Figure 1: InfoSphere Optim System Analyzer for SAP applications includes templates to support key SAP life-cycle events.

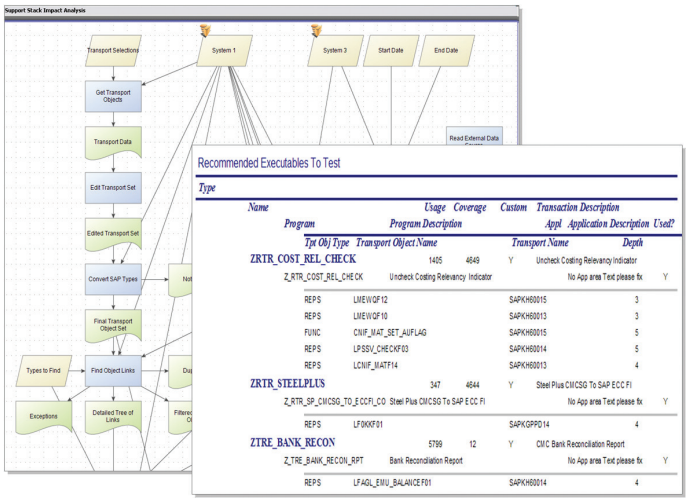

Figure 2: InfoSphere Optim System Analyzer compares before and after data images and presents results in a streamlined report.

Leveraging a drag-and-drop workflow, templates can be easily customized to support the unique needs of each business's SAP landscape. Administrators can extend the support pack templates to identify which test cases should be run when implementing a particular support pack. The templates also can be extended to show gaps in test cases or to highlight affected transactions for which there is no test case (see Figure 1).

InfoSphere Optim System Analyzer automatically identifies SAP system changes for these key application life-cycle events and can provide automated, in-depth analysis for multiple systems and applications. By analyzing the "before" and "after" images of the data, it documents the SAP baseline and automatically detects any differences, providing a comparison of data to authenticate test completeness. Results are presented in a concise report, saving administrators countless hours of manual inspection (see Figure 2).

With its sophisticated graphical interface, guided customization capabilities and extensive library of analytical components, InfoSphere Optim System Analyzer is designed to help IT groups obtain answers to the most specific SAP questions. The end result is reduced time, costs, complexity and risk for SAP application and system changes.

InfoSphere Optim System Analyzer supports these major life-cycle events:

- **Application upgrades:** Compare current system configuration, custom code and transactions for a target upgrade system to measure the potential impact of technical and functional upgrades and to help reduce the target completion time.
- **Support packs and enhancement packs:** Identify and understand which standard and custom SAP reports and transactions are affected by SAP support pack or enhancement pack changes to help reduce the risk of promoting untested changes into production.
- **Audits and GRC:** Automate the discovery and analysis of necessary information to support specific governance, risk and compliance (GRC)–driven requirements.
- **Landscape synchronization:** Compare development and QA environments with production environments to help ensure synchronization and correct user configurations, and to avoid untested changes from entering production; determine if application objects and data are consistent across the landscape by understanding the differences in configuration, data and code between the systems.
- **Consolidation:** Help simplify consolidation of multiple production systems by understanding technical differences in configuration, customization and data between systems.

IBM InfoSphere Optim Business Process Analyzer for SAP applications

As you identify and analyze changes to the data structure, it's also important to consider how change impacts your SAP system at the business process level. IBM InfoSphere Optim Business Process Analyzer for SAP applications, used in conjunction with InfoSphere Optim System Analyzer, establishes traceability between the data structure changes and your SAP business processes.

InfoSphere Optim Business Process Analyzer automatically captures the SAP business process from your SAP system, and

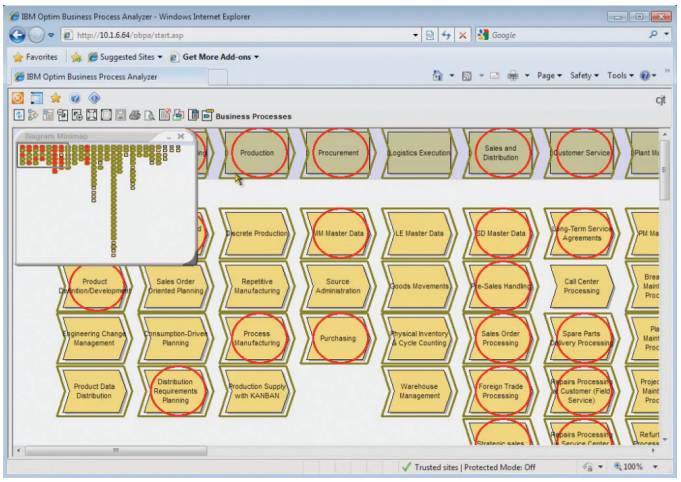

Figure 3: InfoSphere Optim Business Process Analyzer helps you visualize how changes impact the SAP business process.

then provides a graphical view of how changes will impact the business process. This helps improve collaboration between business and technical users, facilitates better visibility into the impact of changes to the business process, and mitigates risk early in the SAP application life-cycle. InfoSphere Optim Business Process Analyzer includes a wide range of diagrams that help visualize the content stored in the repository. These diagrams are highly configurable and respond automatically to changes in the model (see Figure 3).

The combination of InfoSphere Optim System Analyzer and InfoSphere Optim Business Process Analyzer can increase system knowledge and insight into the effects of system changes, helping to reduce the time, cost and complexity associated with upgrades, support pack and enhancement pack deployments, consolidations and other life-cycle events. Together, they help ensure smooth application delivery.

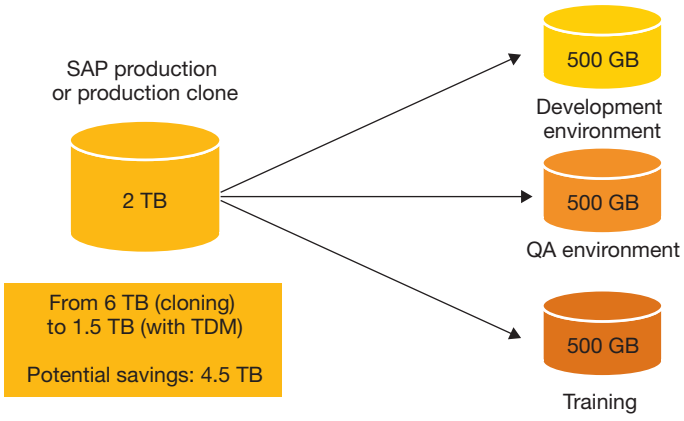

Figure 4: The InfoSphere Optim Test Data Management solution helps IT groups create right-sized subsets of data for testing, development and training.

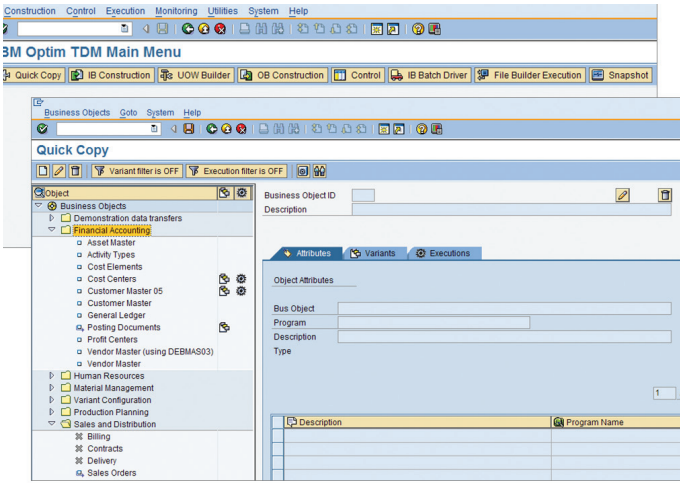

Figure 5: The InfoSphere Optim Test Data Management solution includes prebuilt extracts to help reduce setup time and improve productivity.

IBM InfoSphere Optim Test Data Management solution for SAP applications

SAP project teams often face a significant challenge when handling major life-cycle events: they need to use valid, timely, real-world data to properly test business scenarios and train the user community while avoiding the time, effort and storage capacity utilization often required for cloning data.

The InfoSphere Optim Test Data Management solution for SAP applications helps reduce the preparation time, expense, storage capacity demands and manual effort required to create manageable real-world data scenarios. Leveraging prebuilt business objects, the InfoSphere Optim Test Data Management solution extracts discrete subsets of production data based on user-defined criteria and copies it to any other system, accurately capturing the SAP data needed for testing (see Figure 4).

The InfoSphere Optim Test Data Management solution is an SAP-certified, ABAP–based solution running inside SAP software. The point-and-click graphical interface is friendly, intuitive and structured in a logical way to minimize learning time and maximize user productivity. Tasks are grouped according to the primary functional area supported, such as Financial Accounting, Human Resources, Material Management, Sales and Distribution, and Production Planning. Administrators can select the appropriate functional area to display additional information, including execution history and user-defined selection criteria. New executions can be created by simply using a selection screen, and the execution can be scheduled to run immediately or at a later date and time (see Figure 5).

The InfoSphere Optim Test Data Management solution manages SAP data at the business-object level. A business object represents a conceptual unit of work, such as customers, purchase orders or invoices. By taking into account the dependencies that exist between data elements at the business-object level, the InfoSphere Optim Test Data Management solution preserves the relational integrity of the data as well as its original business context. The solution can create referentially intact subsets of SAP data with ease while accurately representing complex modules and underlying data models.

The InfoSphere Optim Test Data Management solution for SAP applications offers a proven SAP technology framework. Administrators can optimize and automate processes to create and manage data in nonproduction (testing, development and training) environments with no performance impact on production systems. Development and testing teams can create realistic, right-sized test environments, made up of one or more business objects, for targeted test scenarios.

To address test-data masking, the InfoSphere Optim Test Data Management solution provides transformational routines based on site-specific requirements. It captures and accurately processes application data elements so that the masked data does not violate application logic and produces valid results.

Support all of your development and testing needs

Even within a highly customized SAP environment, the combination of InfoSphere Optim System Analyzer and the InfoSphere Optim Test Data Management solution for SAP applications enables organizations to achieve significant reductions in the cost, scope and complexity of testing life-cycle events by:

- Empowering technical and functional teams to reduce life-cycle event costs and improve application quality
- Helping to improve scope management, control costs and reduce risks for a full range of SAP life-cycle events, including upgrades, consolidations and ongoing system maintenance
- Enabling teams to increase productivity by leveraging out-of-the-box templates to achieve immediate results

Platform support

InfoSphere Optim System Analyzer and InfoSphere Optim Business Process Analyzer support 32-bit and 64-bit versions of the Microsoft Windows Server operating system and may be installed on Microsoft Windows 7 (Professional, Enterprise or Ultimate Editions), Windows Vista, Windows XP Professional and Windows 2000 Professional machines. They support SAP R/3 releases 4.6x, 4.7x, ECC 5.0 and ECC 6.0. For more information about system requirements for InfoSphere Optim System Analyzer, please visit: ibm.com/support/docview.wss?uid=swg27019306

Both InfoSphere Optim System Analyzer and InfoSphere Optim Business Process Analyzer are web-based applications and are installed on a web server that is accessed from one or more networked client machines. The InfoSphere Optim System Analyzer workspace models are stored as Microsoft SQL Server databases. The SAP components of InfoSphere Optim System Analyzer are provided as transports to be installed on the SAP systems used with InfoSphere Optim System Analyzer.

The InfoSphere Optim Test Data Management solution supports SAP R/3 releases 4.6x, 4.7x, ECC 5.0 and ECC 6.0, running on UNIX or Microsoft Windows Server.

About IBM InfoSphere

IBM InfoSphere software is an integrated platform for defining, integrating, protecting and managing trusted information across your systems. The InfoSphere platform provides the foundational building blocks of trusted information, including data integration, data warehousing, master data management and information governance, all integrated around a core of shared metadata and models. The portfolio is modular, allowing you to start anywhere and mix and match InfoSphere software building blocks with components from other vendors, or choose to deploy multiple building blocks together for increased acceleration and value. The InfoSphere platform offers an enterprise-class foundation for information-intensive projects, providing the performance, scalability, reliability and acceleration needed to help simplify difficult challenges and deliver trusted information to your business faster.

For more information

To learn more about IBM InfoSphere Optim solutions for SAP applications, contact your IBM sales representative or visit: **ibm.com**/software/data/optim/sap

To learn more about IBM InfoSphere solutions, contact your IBM sales representative or visit: **ibm.com**/software/data/infosphere

About the author

Sandeep S. Desai
Senior Product Manager
IBM Software Group

© Copyright IBM Corporation 2011

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

Produced in the United States of America
November 2011
All Rights Reserved

IBM, the IBM logo, ibm.com, InfoSphere and Optim 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

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

UNIX is a registered trademark of The Open Group in the United States and other countries.

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

References in this publication to IBM products or services do not imply that IBM intends to make them available in all countries in which IBM operates. All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.

Please Recycle

NIW03001-USEN-01