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THE POWER TO KNOW®

SAS® IT Resource Management

Optimize IT resource capacity and performance across the enterprise

What does SAS® IT Resource Management software do?

SAS IT Resource Management allows IT organizations to analyze, manage and anticipate the utilization and performance of the IT infrastructure. It also delivers foresight into planning scenarios for future growth based on business demands. Data integration and domain intelligence reporting capabilities deliver a centralized view of IT resources and services across the enterprise, enabling more precise IT business decisions.

Why is SAS® IT Resource Management important?

SAS IT Resource Management offers a collective view of enterprisewide IT resources. This enables IT organizations to ensure the delivery of IT services and resources in an efficient and cost-effective manner while demonstrating measurable value to business initiatives.

For whom is SAS® IT Resource Management designed?

SAS IT Resource Management is designed for IT organizations in all industry sectors and provides capabilities for multiple users within IT, including capacity planners, infrastructure engineers, systems and network administrators, and IT and business operations managers. Dashboards and scorecards deliver concise reports that depict the enterprise view of IT service delivery for IT directors, CIOs and business consumers of IT.

The ability to innovate has become a critical success factor for many organizations. IT organizations play a role in innovation only if their services are delivered in a credible manner and they have the ability to forecast the IT resources needed to meet anticipated business demands, whether those resources are physical or virtual servers, internal or external clouds, or contracted resources from a hosted provider.

The first step for the IT organization to gain credibility with the business and comply with budget demands is to deliver IT services and resources in a predictable and timely manner. IT organizations have realized that they need visibility into the use, availability and performance of IT resources to measure and demonstrate their value to the business and other stakeholders.

SAS IT Resource Management extends the data management, business intelligence and analytic components of the SAS Business Analytics Framework to capture and organize IT resource measurements from multiple-platform IT infrastructures to create the IT performance data warehouse.

The solution then analyzes the warehoused information to create unique insights into IT infrastructures, which are useful for optimizing day-to-day operations and anticipating future demands for services and resources. These insights can help identify overutilized resources, consolidate underutilized resources, project exhaust dates for key aspects of IT and plan for new acquisitions.

Key Benefits

- **Measure and manage all IT resources and services**. SAS IT Resource Management is designed to gather and consolidate the IT resource data available throughout the IT infrastructure. It stages, standardizes, transforms, aggregates and delivers analysis and report-ready IT resource performance data from virtually any data source. It produces reports and delivers a Web-based application to enable easy distribution and consumption of the resulting IT intelligence. Using one platform to manage all IT-related data reduces costs, saves time, shortens learning curves and facilitates the development and use of common analysis methodologies throughout the IT organization. In the end, it gives decision makers the information they need for quick and accurate analysis of IT resources.

- **Dynamically size your IT infrastructure and reduce risks**. SAS IT Resource Management can help you predict when you might exceed resource capacity so you can plan for the additional resources needed to meet changing business requirements. Concise reporting of IT resource performance data helps identify underutilized IT resources that can be repurposed and brings insights to infrastructure consolidation or virtualization projects without negatively affecting the quality of IT service and business continuity.

- **Reduce IT costs through better use of resources**. With a fact-based approach to managing your IT infrastructure, SAS IT Resource Management delivers the utilization, availability and performance information required to know and forecast IT

resource needs. These facts enable efficient IT procurement processes, deployment planning and operational activities that are needed to deliver IT services to the business units. The information made available through SAS IT Resource Management allows IT organizations to uncover bottlenecks and address poor service delivery. Personnel, facilities, hardware and general IT operating costs can be reduced with the effective use of IT information and proper planning.

- **Make faster, better decisions aligning IT and business**. SAS IT Resource Management provides fast, self-service access to IT resource performance reports and analysis, as well as the ability to answer questions related to IT resource utilization and future investments. This, in addition to demonstrating how IT is aligned with each business unit, helps ensure that IT is a driving force behind the organization's success. The intuitive, point-and-click administration environment makes it easy to build, execute, maintain and reuse processes that manipulate IT performance data.

Product Overview

SAS IT Resource Management is designed to access, integrate, aggregate, analyze and manage large quantities of IT resource performance data about hardware, operating systems, networks, Web servers, databases and applications, whether they are used in physical, virtual or cloud infrastructures.

The IT resource performance data is generated by the logging mechanisms that are inherent to IT resources or that are created by the enterprise systems management tools used to manage IT infrastructures. Everything needed to analyze IT resource performance data from multiple sources for performance management, capacity planning, IT resource forecasting, seasonality analysis and enterprise IT performance summaries is provided, including:

- IT-specific data warehousing tools and wizards to create, organize and manage IT data mart(s).
- Out-of-the-box methods to deliver concise and descriptive analysis and report-ready data.
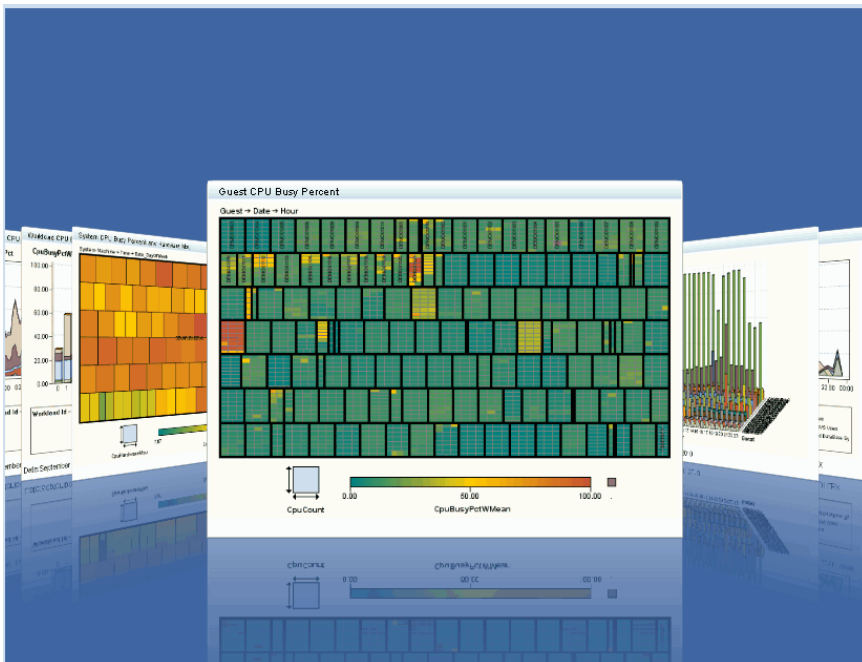
- Sets of key metrics used to organize common measurements from diverse data sources for the purposes of trending and forecasting.
- Standard aggregations (data summarizations) and the ability to create custom aggregations of all available IT data.
- Standardized and descriptive labels for arcane IT system measurements.
- More than 4,000 IT domain intelligence reports that can be used out-of-the-box or customized as desired.
- A Web-based application for the distribution and consumption of reports.

Interactive data integration environment

SAS IT Resource Management provides a visual design tool that enables developers or IT data analysts to construct, execute, maintain and reuse processes that can manipulate IT performance data. The intuitive point-and-click design of SAS IT Resource Management allows IT data analysts to easily build logical process workflows, read and reuse the metadata from the input and output data stores, and create business rules and transformations in metadata, thus enabling the rapid generation of reusable data integration services.

Enterprise access and interpretation of IT performance data

SAS IT Resource Management offers access to virtually all types of data sources that contain information about IT resource performance. The raw IT resource performance data is processed by supplied adapters that are specific to the IT resource data being evaluated. SAS IT Resource Management provides adapters for industry-standard, IT-related sources (e.g., hardware, operating systems, networks, Web servers, databases and applications). Data sources that are not supported out-of-

The Gallery Manager is a Web-based application that makes it easy to distribute and consume the IT domain intelligence reports generated by SAS IT Resource Management.

the-box by SAS IT Resource Management can be created and are known as user-written adapters.

Flexible and open IT data mart

The IT data mart is a logical collection of IT-related data and metadata objects and is a key component of SAS IT Resource Management. The data mart contains jobs, staged tables, aggregation tables, SAS Information Maps and libraries. IT data marts are set up, managed and administered by the data administrator using wizards and user interfaces. Multiple data marts can be created to organize data. For example, a separate data mart might be set up for each adapter or business area.

Data staging and data aggregation

The staging transformation invoked by SAS IT Resource Management adapters extracts raw IT resource performance data, performs any calculations and conversions that are required by that adapter (including data quality processes) and loads (stages) the resulting data into tables in the IT data mart. Staging jobs can be run interactively or scheduled to run in batch mode depending on the enterprise requirements. An aggregation transformation specifies how data is to be transformed and stored so that it can provide analysis and report-ready IT resource performance data.

For example, an aggregation transformation provides specifications for filtering data, calculating statistics, performing rolling accumulations, ranking and grouping (classifying) the data as per user specifications, etc. For any given adapter, SAS IT Resource Management generates transformations that create information maps referencing the data needed to create and view reports.

Key Features

Interactive data integration environment
- A visual design tool provides an easy-to-use GUI for enhanced data integration capabilities and administrative tasks prior to creating reports.
- Wizards are specifically designed for building IT data marts, adapters, aggregations, staged tables and columns, and ranking IT data.
- A centrally managed and shared metadata repository for data marts facilitates consistency and reuse of metadata.

Enterprise access and interpretation of IT performance data
- Adapters deliver a complete data model for each IT resource data source and convert raw IT resource data to analysis and report-ready information.
- Device-independent measurement units and standardized variable-naming conventions for IT resource measurements enable complex IT metrics to be communicated and consumed by both IT and business users.
- Key IT metrics unique to and across adapters allow resource performance characteristics to be analyzed, forecasted and reported on across data sources. Key metrics are logically grouped into Server Performance, Resource Utilization, and Workload Profiling and Characterization categories.
- All SAS IT Resource Management adapters conform to standards for aggregations (simple and summarized), ranks and filters for IT measurements in the context of aggregations and report groups.
- Supported adapters: VMware vCenter Server, SNMP Simple Network Management Protocol, Demand Technology Performance Sentry, HP Performance Agent , HP Reporter software, BMC Performance Manager for Servers, SAR System Activity Reporter, Microsoft System Center Operations Manager, SAP ERP Enterprise Resource Planning (ERP), Web Log and user-written adapters, ASG TMON2CIC, ASG TMONDB2, BMC Mainview IMS, CA TMS, IBM OS/400 Collection Services, IBM DCOLLECT, IBM DFSMS Data Collection Facility, IBM Environmental Record Editing and Printing Program, IBM Information Management System (IMS), IBM System Management Facility, IBM Transaction Processing Facility, IBM VM Monitor, Performance Sentry with MXG.

Flexible and open IT data mart
- The data mart contains jobs, staged tables, aggregation tables, information maps and libraries. Multiple IT data marts can be created for each adapter or business area.
- SAS IT Resource Management data marts are designed for database-independent persistence and multithreaded ETL processes.

Data staging and data aggregation
- Unique staging transformations associated with each supported adapter load raw data into staged tables. Staging transformations detect and handle duplicate data and generate computed columns from the input data.
- Aggregation transformations create analysis and report-ready performance data, providing specifications for identifying the location of input data, filtering data, populating computed columns, calculating statistics, performing rolling accumulations and ranking individual class variables.
- The aggregation transformation allows IT resource data to be summarized on any time period and for as many time periods as the user desires.

Reporting and analysis
- More than 4,000 out-of-the-box IT reports are delivered for use with the adapters supported by SAS IT Resource Management. The reports can be customized for use with user-written adapters.
- Web-based Gallery Manager facilitates the distribution and consumption of IT intelligence.
- A Windows reporting client application generates business-quality reports to communicate the results of analyses. It also can be used to create SAS Stored Processes, which can be deployed within Microsoft Office applications or a Web browser.
- A Web-based interface is available for ad hoc reporting of IT resource performance.
- A Microsoft Office add-in can be used by business users to access, analyze and report on IT resource performance data and distribute the results to other stakeholders in the enterprise.

Reporting and analysis

SAS IT Resource Management includes data visualization techniques that help make business sense of IT resource performance data. Reporting capabilities provide a single, centralized view of IT resources and services across the enterprise. Summarized and simple aggregation tables and the information maps for those tables are used as inputs to create reports such as CPU utilization, threshold analysis, peak period analysis, exhaust forecasting, etc. SAS offers a collection of easy-to-use query and reporting interfaces for different types of users and recipients (e.g., capacity planners, IT infrastructure analysts, IT operations managers, senior IT management and IT directors).

A powerful query, reporting and analysis client is used to create reports and graphics. The reporting client, SAS® Enterprise Guide®, uses SAS Information Maps as input to analysis and reporting tasks to insulate business users from complex data structures and naming conventions sometimes associated with IT performance data sources. This ensures the consistent use of IT resource performance data. A Microsoft Office add-in enables decision makers to view, analyze and share IT resource performance data directly from the Microsoft Office environment and provides easy access to SAS' broad and deep set of analytic, reporting and data access functionality. For the distribution and consumption of the IT domain intelligence reports that are created, a powerful Web application (the Gallery Manager) is provided.

SAS® IT Resource Management Software Technical Requirements

Server environment

- AIX: 5.3, 6.1 and 7.1 on POWER architectures
- HP-UX Itanium: HP-UX 11iv2 (11.23), 11iv3 (11.31)
- HP-UX PA-RISC: HP-UX 11iv2 (11.23), 11iv3 (11.31)
- Linux for x86 (x86-32): RHEL 4, 5 and 6, SuSE SLES 9, 10 and 11
- Linux for x64 (EM64T/AMD64): RHEL 4, 5 and 6, SuSE SLES 9, 10 and 11
- Microsoft Windows (x86-32): Windows XP Professional, Windows Server 2003 family, Windows Server 2008 family, Windows Vista*, Windows 7**
- Microsoft Windows on x64 (EM64T/AMD64): Windows XP Professional for x64, Windows Server 2003 for x64, Windows Server 2008 for x64, Windows Server 2008 R2 for x64, Windows Vista* for x64, Windows 7** for x64
- Solaris on SPARC: Version 9, 10
- Solaris on x64: Version 10
- z/OS: V1R7, V1R8, V1R9 and higher

Middle tier

- AIX: 5.3, 6.1 and 7.1 on POWER architectures
- HP-UX Itanium: HP-UX 11iv2 (11.23), 11iv3 (11.31)
- Linux for x64 (EM64T/AMD64): RHEL 4, 5 and 6, SuSE SLES 9, 10 and 11
- Solaris on SPARC: Version 9, 10
- Solaris on x64: Version 10
- Microsoft Windows (x86-32): Windows XP Professional, Windows Server 2003 family, Windows Server 2008 family, Windows Vista*, Windows 7**
- Microsoft Windows on x64 (EM64T/AMD64): Windows XP Professional for x64, Windows Server 2003 for x64, Windows Server 2008 for x64, Windows Server 2008 R2 for x64, Windows Vista* for x64, Windows 7** for x64
- z/OS: V1R7, V1R8, V1R9 and higher

SAS IT Resource Management requires a Web application server, such as JBoss, Oracle WebLogic or IBM WebSphere. Please refer to the SAS 9.2 (TS2M3) section of this Web page, http://support.sas.com/resources/thirdpartysupport/ for the minimum version requirements for supported Web application servers.

Client environment

- Microsoft Windows (x86-32): Windows XP Professional, Windows Vista*, Windows 7**
- Microsoft Windows(x64): Windows XP Professional for x64, Windows Vista* for x64, Windows 7** for x64
- Internet Explorer 7 on Windows XP Pro, Windows Server 2008 and Windows Vista*
- Internet Explorer 8 on Windows XP Professional, Windows Vista* and Windows 7**
- Firefox 2.0 and 3.0 on Windows XP Pro, Windows Server 2008, Windows Vista* and Linux for x86

Included third-party software

- MXG on SAS IT Resource Management servers licensed and installed on z/OS
- Demand Technology Performance Sentry (formerly known as NTSMF) on SAS IT Resource Management servers licensed and installed on Windows

*NOTE: Windows Vista supported editions are: Enterprise, Business and Ultimate.

**NOTE: Windows 7 supported editions are: Professional, Enterprise and Ultimate.