



SAS® Enterprise BI Server

Fast deployment, simple integration and consistent data

What does SAS® Enterprise BI Server do?

SAS Enterprise BI Server enables organizations to achieve lower cost of ownership for BI, consolidate vendors, free IT resources for more strategic projects and obtain a faster time to intelligence. Ultimately, it leads to greater adoption of BI across the organization and enables IT to align with the business more effectively..

Why is SAS® Enterprise BI Server important?

It provides autonomy to users within a well-defined IT governance framework with a single source of metadata and a single point of administration.

For whom is SAS® Enterprise BI Server designed?

It is designed for organizations that need to simplify and speed BI deployment as well as align IT with the business to respond more quickly to user requests at the lowest overall cost.

SAS® Enterprise BI Server helps organizations overcome the deficiencies and complexity evident in most business intelligence (BI) deployments while reducing the cost of ownership. It provides a solid basis for vendor consolidation and BI standardization, enabling IT to focus on more effectively aligning with the business. At the same time, it delivers user autonomy within a well-defined IT governance framework.

By providing an integrated, complete portfolio of BI capabilities, SAS Enterprise BI Server eliminates the need to maintain multiple BI solutions.

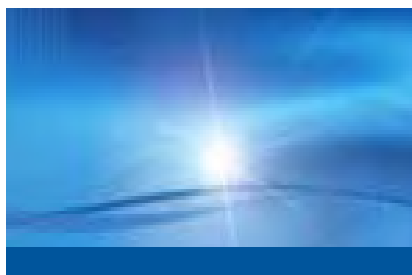
SAS Business Intelligence is unique because it:

- Eliminates the need for constant, ongoing integration of technologies by providing one consistent, fully integrated BI solution.
- Eliminates the need to maintain data, security and metadata in several places and formats through a single, shared metadata server that gives access to shared metadata, business rules, data and security definitions throughout the entire BI solution.
- Eliminates the daily struggle for compliance by building it into the solution via integrated metadata. This provides consistent, reliable results that can be automatically traced back to the source.
- Eliminates the need for constant and wide-scale IT involvement to deliver information by enabling user autonomy within a well-defined and centrally controlled IT governance framework.
- With SAS, organizations reduce the costs of having effective and reliable business intelligence, ensure a future of innovation, and free IT time and

resources. This enables IT to align with the business more effectively and meet business needs faster at the lowest overall cost.

Key Benefits

- **Faster, better decisions aligning IT and business.** IT managers deploying SAS Enterprise BI Server can leverage previous investments, integrate BI quickly into existing environments and provide the information needed to drive the business forward as quickly as possible. This, with the added benefit of freeing resources from tedious tasks to focus on projects considered strategic to the business, ensures that IT is a driving force behind their organization's success.
- **Data consistency and control.** Through centrally managed and shared metadata, data and security, SAS Enterprise BI Server delivers consistent representation and control of information by providing reliable results that easily can be traced back to the source. This alleviates the repetitive task of validating which reports or results are correct. In addition, integration with Microsoft Office allows IT to retake control of ad hoc Microsoft Excel use without impeding users' desires for this familiar environment.
- **Vendor consolidation and standardization with a comprehensive BI solution.** SAS Enterprise BI Server ensures that IT has the breadth of BI capabilities to meet the needs of every type of user, including managers looking for dashboards, groups that want to view or build reports on the Web, analysts or power users who need advanced data exploration, and IT staff who need to deploy, manage, control and maintain the entire solution.



Product Overview

SAS Enterprise BI Server enables IT to deliver extensive BI capabilities on top of an open and integrated BI infrastructure that is easy to integrate into existing environments, deploy and maintain. Capabilities include portals and dashboards, report viewing, report building, advanced data exploration, Microsoft Office integration, guided analysis, metadata management, guided SAS OLAP cube creation and application development. As a result, users at all levels are able to quickly and easily obtain the information needed to make decisions at the lowest overall cost to the organization.

Portal

SAS Enterprise BI Server provides a secure, role-based portal that provides personalized interaction with information. As a result, the portal can be used to present information from the boardroom down. The portal provides a highly scalable and easy-to-use interface to help users quickly find the information they need. Consistent results and access to information are assured with metadata search and a centralized metadata repository.

Dashboard

SAS Enterprise BI Server provides a role-based, secure, customizable and extensible dashboard that is easy to administer and use. It provides links to reports and analytical results from SAS, SAS Strategic Performance Management scorecards and objects, externally generated data and virtually anything addressable by a Uniform Resource Identifier (URI). The point-and-click administration means easy data-to-dashboard capabilities in seconds. The dashboard displays KPIs at a glance to help users monitor anything that drives organizational performance. Based on permissions set up by IT, users can delve deeper into analysis from the

portal using SAS Business Intelligence tools and analytics products to gain insight into what caused the problem and how best to address the issues.

Business visualization

SAS Enterprise BI Server provides extensive and robust visualization capabilities that help organizations fully leverage information assets through dynamic, interactive visualization environments, a comprehensive library of graphics for presentations and

customizable graphic generation. Business visualization delivers insights and surfaces relationships that are not easily discovered in tabular formats. Business users can interact with visual environments to explore ideas, investigate patterns and discover previously hidden facts through visual queries. Providing business users with this level of self-sufficiency reduces the overdependence on IT to service ad hoc requests, which require point solutions that are not integrated with core BI investments.



With SAS Enterprise BI Server, users can go from data to critical first-alert, call-to-action dashboards for performance results in seconds.

Highly effective and engaging Adobe Flash-based indicators deliver greater interactivity.

Web-based reporting and authoring

SAS Enterprise BI Server enables users to view reports in a self-service manner while respecting the need for IT to maintain control of the underlying data and security. Once the software is deployed large numbers of users, including those with limited technical skills, can quickly open, view and interact with created and secured reports to answer business questions. Report interaction allows multiple views of the data (including top 10 lists, subtotals and totals) to support the data manipulation needs of most business users. It also provides drill down and OLAP analysis capabilities as well as other report-traversing capabilities.

SAS Enterprise BI Server also supports more specialized users in their quest for discovering hidden nuggets of information. It allows them to look at large volumes of data quickly from multiple angles, easily manipulate the data, add new data, modify the view of the data and interact with the data in many ways. Users are able to comprehensively examine all of the factors under review, allowing for effective decision making – all under the control of IT but without the need for constant use of IT resources. And because the advanced data exploration technology is part of an integrated environment, the results of the data exploration can be integrated seamlessly into standard reports that can be viewed and explored by less-advanced users. This advanced environment also allows the combining of multidimensional data with the geospatial mapping capabilities of ESRI for highly visual representations of data explorations.

Web-based report building and distribution

SAS Enterprise BI Server provides report-building capabilities that match user skill levels to speed the creation of reports. Specialized groups or busi-

ness users can build reports within constraints set by IT. SAS Enterprise BI Server delivers extensive presentation-layout capabilities and robust report-authoring capabilities. Report authors can use data from multiple data sources (relational or multidimensional), define custom calculations and filter combinations, as well as integrate SAS Analytics results into a single report. Using a comprehensive suite of graphical data presentation options, users can create and easily incorporate charts and plots in reports. Report authors can easily format, design and create business graphics and apply corporate design standards to deliver comprehensive reports.

Using role-based definitions for users, IT centrally manages the administration of report authors and viewers, as well as the data that report authors can use when building reports. SAS Enterprise BI Server includes report-bursting capabilities that enable easy distribution to a broad audience. Bursting enables users to create a single report, provide guidelines on who has access to content and distribute the report based on assigned groupings.

Microsoft Office integration

With SAS Enterprise BI Server, users can transparently leverage the power of SAS data access, reporting and analytics directly from Microsoft Office via integrated menus and toolbars. Business users can analyze data that exceeds the data size limitation of Microsoft Excel and seamlessly surface results to decision makers using Word, Excel and PowerPoint. Recipients can also update embedded results from Microsoft Office documents as needed. Because the data is maintained centrally, IT can oversee and validate the data being used for reports, ensuring that information is current.

Query and analysis

SAS Enterprise BI Server's query and analysis capabilities are tailored for different skill levels, enabling users to access and query data in an autonomous fashion without having to learn new skills or engage IT. SAS can access virtually any data source with the power and interoperability to query across multiple databases and platforms.

Business metadata management

SAS Enterprise BI Server gives IT-savvy users and data architects the opportunity to translate data structures into terms that business users can understand and use, and define business rules in a consistent manner. With these data structures IT can control which data and the volume of data that can be retrieved. This ensures that IT maintains control without infringing on the users' flexibility and productivity. SAS business metadata allows the use of business logic in addition to SQL to derive needed data.

Guided analysis

SAS® Enterprise Guide® is available as an add-on module for SAS Enterprise BI Server to empower advanced users with an environment for various types of analyses, data manipulation and visualization. These results then can be incorporated seamlessly in Web-based reports, the portal, dashboards or Microsoft Office documents. This interface provides users with the ability to further leverage SAS Analytics.

Application development environment

SAS® AppDev Studio™, available as an add-on module for SAS Enterprise BI Server, delivers a comprehensive application development environment that enables IT to develop applications quickly and cost-effectively within the deployed framework.

Key Features

Portal

- Provides a zero-footprint, Web-based interface.
- Point-and-click wizards enable users to create, delete and reorder pages, add and remove content, and modify page layout to organize content in their personal workspaces.
- Extensible portal capabilities include a comprehensive set of portlets. Extendable to include new portlets created in-house.
- A comprehensive search facility locates all content types within the security confines set by IT.
- Customizable graphical or tabular dashboards enable users to easily understand key indicators with the ability to link to more detailed information.
- Easy access to various content types, including reports, advanced data explorations and other structured and unstructured content from one location based on IT security restrictions.
- Link to reports and analytical results from SAS, SAS Performance Management scorecards and objects, externally generated data and virtually anything addressable by a URI.
- Point-and-click administration provides data-to-dashboard capabilities in seconds.

Dashboard

- Critical first-alert, call-to-action dashboards for performance results.
- High resolution and engaging visualization of KPI(s), forecasts and Adobe Flash-based indicators deliver greater interactivity.
- Enhanced interface to preview data with format, KPI and graphics to ensure accuracy in dashboard output.
- Link to reports, SAS Stored Processes, portal objects, URLs and embedded parameters for “deep linking.”
- Create alerts to monitor an indicator’s value.
- Create dashboards from a variety of data sources, including SAS Information Maps.
- Use filters defined in SAS Information Maps.
- Role-based, secure, customizable and extensible environment.
- JSR 168-compliant dashboard portlet provides the flexibility to integrate with Web portals without the need for custom coding or the need to deploy and support another portal container.
- SAS Web Parts for Microsoft SharePoint provide the ability to add SAS BI dashboards, and display dashboards and KPIs at a glance to help users monitor organizational performance from within Microsoft SharePoint.

Business visualization

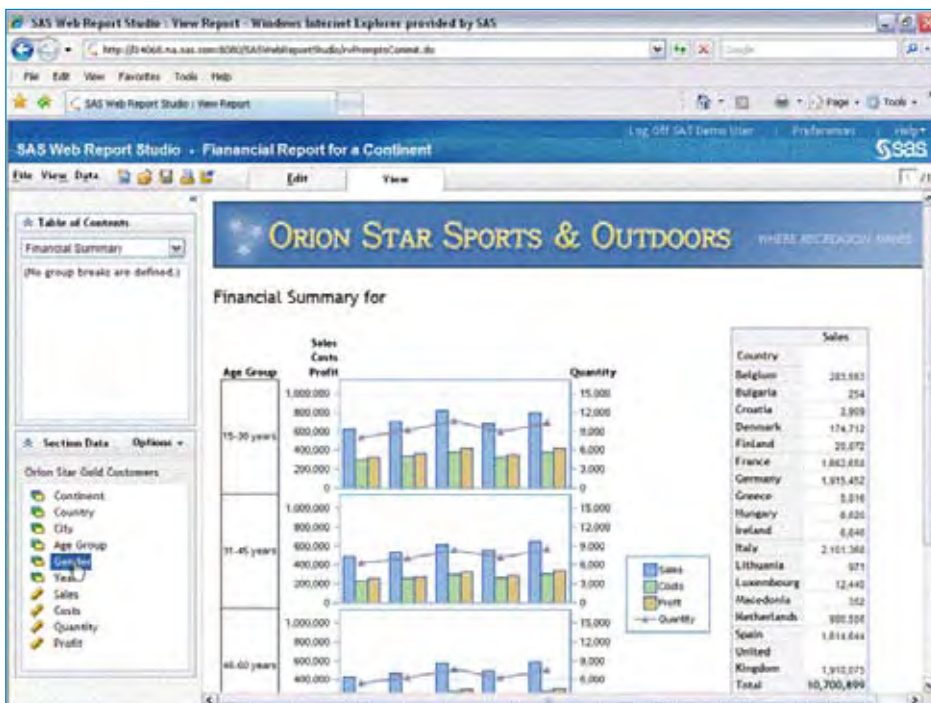
- Dynamic business visualization for interactive data exploration, visual queries and more.
- See relationships that are not easily discovered in tabular formats.
- Make complex interrelationships visible in an easy-to-understand picture.
- Create data movies using engaging Adobe Flash-based interactivity.
- Provide highly interactive business graphics, including animated bubble plots, 3-D scatter plots, trellis plots, summary charts and needle charts.
- Generate static or dynamic interactive (Java or ActiveX) charts and graphs that can be used in third-party applications.
- Visually query and filter data for interactive tabulation with the ability to rearrange data at will.
- Provide visual analytics, including interactive simulations and optimization and state-of-the-art time series modeling.

Web-based reporting and authoring

- Provides a Web-based, interactive reporting interface for information consumers.
 - Rich desktop-like experience through the utilization of AJAX provides more drag-and-drop functionality, resizing of objects on the screen, partial screen refresh and context-sensitive menus.
 - Gallery of common, predefined layouts and custom templates.
 - Build, load, organize, view and save reports based on OLAP cubes and/or relational data from one or more data sources.
 - Provide multidimensional data exploration: drill, rotate, filter, reorganize, sort, toggle totals, export to various target formats and more.
 - Provide relational data exploration: rotate, filter, reorganize, sort, toggle totals, export to various target formats and more.
 - Print reports to PDF or export formatted tables and graphs, or simply data, to Excel.
 - Surface geospatial mapping information and the results of geospatial analyses into reports.
 - Wizard-based report creation.
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Web-based report building and distribution

- Provides a Web-based, interactive report-building interface for report authors.
- Build reports that match user skill levels and the requirements of the information.
- Create a quick view of data that lets you select a data source and display the default view in one simple step.
- Create simple reports. Wizards guide report authors through report creation:
 - Choose data items needed from a nontechnical, IT-provided view known as an information map.
 - Select predefined filters, set groupings and sorting, and override default formatting.
 - Define report layout: add tables, graphs, table of contents, footers and headers.
 - Create custom calculations and filters.
- Create more comprehensive reports with powerful layout capabilities for experienced report authors and specialized reports:
 - Define multiple report sections with data from multiple data sources.
 - Choose from a gallery of common, predefined layouts and custom templates for a quick start, or begin from a blank page and add tables, graphs and text manually.
 - Precisely position and size graphs, tables, text, images, etc., with advanced layout capabilities.
 - Use advanced formatting for all graphs (size, style, decoration, data, legend placement, etc.).
 - Use advanced formatting for text (font, size, color, alignment, etc.).
 - Use dynamic text insertion to show information such as report creation date and prompt values as appropriate.
 - Define custom calculations, filters and aggregations.
- Add hypertext links on text, images, tables, graphs and group breaks, reports or Web pages.
- Out-of-the-box capabilities such as report linking within report tables and the ability to incorporate custom images within report tables.
- Support for embedded HTML in data items, such as images and hyperlinks, in tabular output.
- Link to a specific report section within the same report.
- Use conditional highlighting on tables and graphs to define exceptions.
- Use a variety of charts: bar/3-D bar with multiple lines, pie/3-D pie, line, scatter and tile charts with the ability to add annotated reference lines to graphs.
- Share reports with large and diverse audiences through report-bursting capabilities.
- Save predefined reports and information with report archiving.
- Common prompting framework allows for the creation of reports that allow prefiltering based on the data, eliminating the need for constant recreation of reports and filters as new data items are added.
- Search-in filter allows users to quickly filter large amounts of detailed data to see just what they need in an efficient, productive manner.
- Multiple repositories and content location independence.
- New role framework for customizing existing roles or creating new roles to authorize capabilities.



SAS Enterprise BI Server provides a Web-based, interactive reporting interface that suits the needs of both report consumers and report authors, and provides multiple views of data. For example, this report summarizes product performance information. It is easy to modify the data on each graph or table by clicking the first toolbar icon. Both graphs are linked to detail reports for further analysis.

Microsoft Office integration

Access SAS capabilities for data access, reporting and analytics directly from Microsoft Office tools, including Word, Excel and PowerPoint.

Wizard-driven report creation within Microsoft Office tools.

Provide offline viewing of previously created results.

Use Microsoft Excel as an application instead of an ad hoc data store.

- Access data from any centrally IT-defined enterprise data source.
- Refresh data at the click of a button from any central enterprise data source defined by IT.
- Cycle through data that exceeds row limitations of Microsoft Excel. Server-side optimization ensures large data sources are never transferred as one to the client.
- Use all the capabilities of Microsoft Excel on the data displayed, but have the ability to always access the latest view of information.
- Embed intelligence and information derived from SAS into Microsoft Word and Excel.
- Deliver results as RTF (Rich Text Format), HTML with Microsoft Word, raw data (CSV) or HTML into Microsoft Excel for further manipulation with native Microsoft Office functionality.
- Manipulate pivot tables to illustrate multidimensional data from various sources.
- Deliver graphics results directly into Microsoft Word, Excel or PowerPoint in any of these formats: ActiveX, GIF, JPEG or PNG.
- Refresh tables and charts automatically to get the latest view of information, pulling from current data that is centrally maintained.
- Enable distribution of embedded results on demand using native Microsoft Office functionality.
- Utilize the latest Microsoft Office ribbon-bar technology to logically group like items.
- Render reports created with SAS Web Report Studio and SAS Enterprise Guide inside of Microsoft Office.
- Provide the ability to add SAS BI dashboards and SAS Stored Processes to a SharePoint page using SAS Web Parts for Microsoft SharePoint. Display dashboards and KPIs at a glance to help users monitor organizational performance. Users can delve deeper into analysis and drill to other SAS BI tools and analytics products to gain additional insight.

Query and analysis

- Provides query capabilities for all levels of users across multiple BI interfaces.
- Provides a zero-footprint, Web-based, interactive interface for advanced users looking for new views that define answers to questions.
- Provides wizard-driven query capabilities within the user-reporting environment.
- Explore and analyze OLAP cubes.
- Change business queries by selecting business items to be displayed from a sidebar.
- Slice and dice multidimensional data using a special slicer dimension and by applying filters on any level of a hierarchy.
- Drill up/down through hierarchies or expand/collapse entire levels.
- Explore data following ragged or unbalanced hierarchies that model true hierarchies as they are experienced in business.
- Obtain detailed information for every cell (drill through) with the option to export it to Microsoft Excel.
- Rank multidimensional data to identify top performers or losers (ties can be handled).
- Display visual totals/subtotals, parent value, security-based totals and percent of totals.
- Calculate new measures and add them to any view.
- Use conditional highlighting to provide visual highlight information inside tables and graphs depending on conditions defined by the user.
- Use text formatting, cell formatting and text replacement with fixed strings or images and display images next to cell values.
- Use maps from ESRI's ArcGIS Server to display OLAP data just like any other view on the data:
 - Synchronize, drill and display for map and table view.
 - Drill on regions in maps to visualize information from an OLAP data source in real time, enabling a zoom to the level of individual houses on a road.
 - Drive the color coding of maps by data from the OLAP data source.
 - Use multiple selections in a map.
- Save views as SAS Web Report Studio reports, Microsoft Excel spreadsheets or Adobe PDF documents. Share views with other advanced data exploration users.
- Remove complexity of data structures from nontechnical users.
- Allow queries to be performed across multiple data sources.
- Incrementally update cubes for new data and new members.
- Ability for users to set OLAP query time-out option.
- Fast, easy and guided OLAP cube creation, including a highly scalable, integrated and open OLAP server to provide the best possible support of the various interfaces that can use multidimensional data; and a purpose-built interface that makes it easy to build and maintain SAS OLAP cubes.

Business metadata management

- Map physical data structures to business terms in an easy-to-use interface.
- Access data from virtually any data source, including multiple sources at once.
- Define consistent business views of the data for relational tables and OLAP cubes.

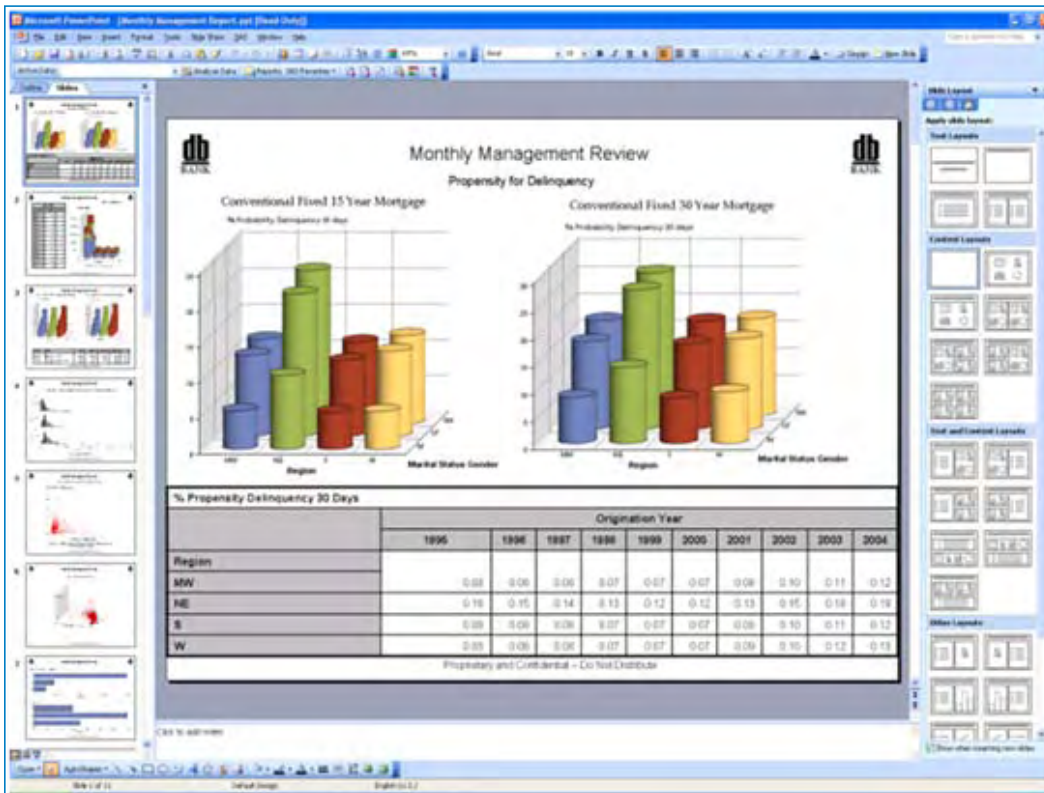
- Create one business view over disparate database management systems for a combined set of query attributes.
- Combine data from multiple sources.
- Control the size of result sets that can be returned to avoid long-running queries.
- Capture consistent business rules and specify allowable options and prompts for end users.
- Centrally manage metadata.
- Create and manage prompts, including cascading prompts that use dynamically generated value lists, repositories, control the SAS Metadata Server, define access controls, and register and manage users and groups through a single interface.

Guided analysis (available as an add-on module)

- Provides a .NET-based native Windows application for power users, programmers, analysts or more advanced users.
- Enhanced user interface includes context-sensitive menus, toolbars and role-based user definitions.
- Provides a large number of prebuilt tasks and task templates covering a wide variety of topics.
- Wizard-driven conditional flow logic capabilities for more rapid creation of complex conditional processing.
- Enhanced complex query with computed columns creation, filtering options and preview of results brings efficiency to the query-building process.
- View OLAP cubes from SAS or from other vendors that support OLE DB for OLAP and the MDX standard.
- Use slices of OLAP cubes for further analysis.
- Easily incorporate geospatial data into analyses.
- Query and subset data graphically from any accessible source or write SQL/MDX.
- Package results into SAS Stored Processes that can be used in all SAS Business Intelligence interfaces and Microsoft Office to gain access to anything SAS can do, allowing work to be distributed without IT involvement while maintaining security.

Application development environment (available as an add-on module)

- A comprehensive standalone development environment, including a Java IDE, provides all required SAS components on one machine for easy development and testing.
- Incorporates all SAS APIs and components for easy reuse in corporate standard development environments.
- Provides a powerful set of quick-start templates.
- Allows for the easy customization and extension of an organization's business intelligence environment.



SAS Enterprise BI Server utilizes SAS Analytics without requiring that users have advanced statistical skills or additional IT support. Microsoft Office integration enables business users to leverage the power of SAS data access, reporting and analytics directly from familiar Microsoft Office environments.

SAS® Enterprise BI Server Technical Requirements

Client environment

All SAS Business Intelligence clients run in a Windows desktop environment.

- Windows (x86-32): Windows XP Professional, Windows Server 2003 family, Windows Vista*

Supported Web browsers

- Internet Explorer 6 on Windows XP Pro
- Internet Explorer 7 on Windows XP Pro and Windows Vista*
- Firefox 2.0 on Windows XP Pro, Windows Vista* and Linux for x86 (SuSE and RHEL)

Server environment

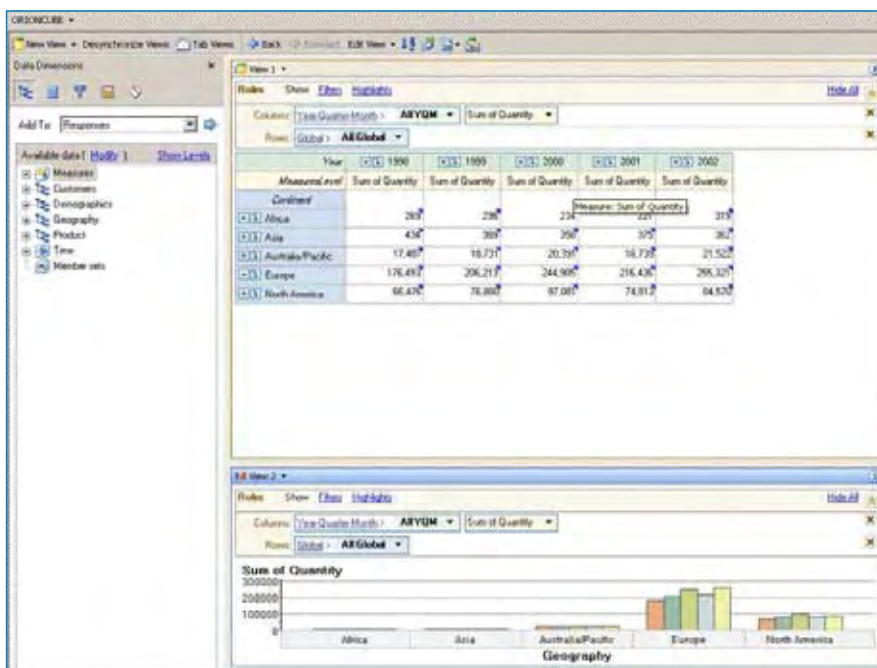
SAS servers, including Base SAS and SAS Metadata Server, can be installed on one or more hardware systems in a multitier configuration.

- AIX: Version 5.3 and 6.1 on POWER architectures
- HP-UX Itanium: HP-UX 11i v2 (11.23), 11i v3 (11.31)
- HP-UX PA-RISC: HP-UX 11i v2 (11.23), 11i v3 (11.31)
- Linux for x86 (x86-32): RHEL 4 and 5, SuSE SLES 9 and 10
- Linux for x64 (EM64T/AMD64): RHEL 4 and 5, SuSE SLES 9 and 10
- Microsoft Windows (x86-32): Windows XP Professional, Windows Server 2003, Windows Vista*
- Microsoft Windows on x64 (EM64T/AMD64): Windows XP Professional for x64, Windows Server 2003 for x64, Windows Vista* for x64

- Microsoft Windows (on Itanium): Windows Server 2003
 - Solaris on SPARC: Version 9, 10
 - Solaris on x64: Version 10
 - OpenVMS for HP Integrity Servers (Itanium): Version 8.3
 - z/OS: V1R7, V1R8, V1R9 and higher
- *Windows Vista Editions that are supported include Enterprise, Business and Ultimate.

Required and optional software

- SAS Enterprise Guide and SAS AppDev Studio are optional components of SAS Enterprise BI Server.
- ESRI ArcGIS 9.0 Server with Service Pack 2 is required for a GIS-enabled SAS Enterprise BI Server.
- Platform Suite for SAS from Platform Computing is available for grid computing environments.
- SAS client tier and middle tier require Sun JRE 1.5.



SAS Enterprise BI Server provides integrated OLAP capabilities, including a multidimensional data store that provides fast access to presummarized data generated from a variety of managed sources. A Web-based OLAP interface lets business users look at data from multiple angles, view increasing levels of detail and add linked graphs or maps.