Overview

The evolution of the SAS®9 architecture continues with SAS 9.4. This release fully uses multicore technologies to deliver increased processing capabilities through high-performance, in-database and in-memory analytics resulting in greater insights more quickly from big data and streaming data. Customers can now use select high-performance analytics in nondistributed environments at no additional cost.

Important foundational updates deliver a more highly available and resilient platform for deploying SAS in traditional on-site environments along with additional support for private and public cloud deployments. You can now deploy SAS easily in the manner that best suits your needs.

In addition, SAS 9.4 delivers a more unified and simplified platform that costs less to deploy, and takes less time to install, manage and maintain. Single points of failure have been removed and the use of third-party software has been reduced, helping ensure your systems’ security and availability. SAS 9.4 simplifies the overall user experience for everyone, making it easier than ever to gain insights from data.

Key Benefits

- **Higher availability and simplified deployment.** Support for clustering of middle-tier and metadata servers enables SAS environments to keep running when servers crash. Embedding the SAS Web Application Server in SAS 9.4 eliminates integration issues with external Web application servers. This reduces total cost of ownership and simplifies installation, maintenance and support of SAS deployments.

- **Control and visibility.** A new consolidated, browser-based console makes it easier to monitor and manage application performance, even across multiple SAS environments.

- **Developer enablement.** SAS 9.4 introduces a new programming language that uses distributed computing and multicore technologies to execute SAS code in-database, reducing data movement and improving performance.
For SAS® Programmers and Administrators

- Create a culture of analytics by making data analysis part of day-to-day operations. The increase in the volume of data has been a key factor in the changing role of IT and has resulted in the need for IT to manage data as a dynamic portfolio asset to drive accurate, fact-based decision making.

- Simplified and consolidated monitoring and management capabilities. Reducing the number of applications and consoles that must be managed and monitored makes system administrators more efficient and allows them to spend their time observing and improving the environment for users.

- Increased responsiveness to users’ requests. IT is usually required to manage the middle-tier server components of SAS deployments. Including a Web application server within SAS eliminates the costs and efforts to acquire, update, maintain and support middle-tier third-party software. This reduces the touch points and allows administrators to be more responsive to users’ requests.

How SAS® Can Help

SAS 9.4 addresses the needs of our customers at every level of interaction with SAS – from business users and IT staff to SAS administrators and programmers. It is our commitment to deliver advanced analytics to solve critical problems and promote innovation.

Improve Control and Visibility of Your SAS® Environment

The SAS Web Application Server delivers an optimized SAS deployment that includes all required Web infrastructure components. By taking increased responsibility for the delivery and support of the middle tier services, SAS is able to provide greater control and visibility into application performance and status via management and monitoring services, and reduce integration points to simplify installation and maintenance. SAS Web Application Server also lowers the total cost to deliver SAS Analytics because there is no need to acquire separate, external application servers.

Derive More Value from Big Data

SAS 9.4 continues to advance high-performance analytics with the introduction of DS2 – a modern, object-oriented programming language that supports threaded programming to produce faster answers. It allows SAS programmers to execute data manipulation, modeling and scoring routines directly inside databases or in massively parallel processing environments to reduce data movement, thereby improving performance and security. In addition, high-performance analytics is now available for organizations running SAS on a single server. But as your data grows and you need more complex analyses, your high-performance code automatically scales to run in a distributed environment.

Enhance High Availability

By removing single points of failure and adding clustering support for the middle tier and metadata servers, SAS offers a more highly available platform to provide advanced analytics when needed. Server clustering, where multiple servers manage copies of the same data, reduces the threat of data loss or system downtime. It also allows users and tasks to be spread across the clustered environment to distribute workloads and improve performance.

Deployment Choices

Organizations want software systems that can grow as they grow and that can scale to deliver responsive service levels regardless of demand. Both business and IT are looking to cloud computing to provide highly available, self-service and on-demand access to the tools and information they need. SAS 9.4 delivers a cloud-friendly platform with SAS Cloud tools and technologies that can be deployed in both private and public clouds. This offers our customers choices to best meet their needs. With SAS 9.4, SAS can be installed as a traditional on-premises deployment or be deployed in private or public cloud environments, including a cloud environment hosted by SAS.
Capabilities

- **Cloud-friendly SAS capabilities** enable rapid deployment of SAS in cloud environments, provide management tools and processes, and promote innovation through a SAS cloud development platform. Cloud-enabled SAS software allows customers to gain insights from their data while taking advantage of the benefits of cloud computing.

- **Continued evolution of SAS High-Performance Analytics** helps organizations derive more value from big data. By processing massive amounts of data in parallel, answers to even the most complex business questions are available in near-real time. This release includes high-performance products for statistics, data mining, text mining, econometrics, forecasting and optimization.

- **SAS Visual Analytics** includes new scenario analysis capabilities and decision trees, adding prescriptive analytics to existing descriptive and predictive analytics. One-click, self-service analytics and rich, interactive data visualizations deliver the power to know more, faster.

- **SAS Data Management** provides a single platform to access, improve, integrate and consolidate enterprise information. With SAS Data Management, organizations can add data virtualization (data as a service), data governance and big data enablement to yield high-quality information that supports operational and analytic applications.

- **No application server required**. The SAS Web Application Server embedded in SAS 9.4 reduces overall cost and complexity of deploying, managing and maintaining SAS software. It eliminates the cost of acquiring, updating, maintaining and supporting third-party midtier software, saving organizations time and money.

- **The SAS Environment Manager** provides SAS administrators with a deeper understanding of their SAS deployments and increased capabilities to monitor and manage their SAS environments, solutions and servers.

- **A new SAS programming language** enables SAS code to be submitted from Base SAS to run in-database so you can perform advanced data manipulation without moving the data.

- **New mobile delivery options** in the Base SAS Output Delivery System make it easy to output SAS reports as e-books that can be read with iBooks® on the iPad® and iPhone®.

**Why SAS®?**

- **Continued Customer Focus**. SAS 9.4 exemplifies our core principle of providing software that is focused on solving our customers’ business problems. Customers look to SAS as a trusted partner to help them drive their businesses with fact-based decisions. With SAS 9.4, we continue our evolution to help customers stay ahead of the increased complexities they face in solving business problems.

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SAS Environment Manager, a new component of Base SAS software, makes it easy for SAS administrators to monitor and manage their SAS environments, solutions and servers.
• **Developer Enablement.** SAS 9.4 adds features that enable SAS programmers to take advantage of emerging and established technologies. With additional standardized APIs and the introduction of two new programming languages, programmers have the tools and technologies they need to create analytic applications that drive better decision making and results for their organizations.

• **Administrator Enablement.** The SAS Web Application Server reduces the overall cost and complexity of SAS deployments. By eliminating the cost to acquire, integrate, maintain and support third-party software, the SAS Web Application Server enables SAS administrators to have more control over the SAS deployments that they manage. A new SAS management portal, the SAS Environment Manager, gives administrators access to advanced monitoring and management capabilities.

• **Software Integrity.** As other software vendors rush to acquire analytic capabilities and cobble offerings together, SAS has selectively expanded its capabilities through 37 years of ongoing development of a comprehensive and integrated analytics suite.

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### For IT

• **Strategic support for the business.** IT faces significant pressure to not only improve the efficiency of operations but also to provide an agile environment that can support new objectives and directions. SAS can help IT build a flexible, scalable architecture to address complex, data-driven issues.

• **Easy management of data and analytics as assets.** The volume of data that organizations now collect and manage has increased the importance of IT as a business partner to the organization. SAS data governance and data management features enable IT to provide the right data to users so they can analyze and explore information for improved decision making.

• **Improved business productivity and reduced costs.** Stretched-thin budgets have prompted organizations to look for ways to get more from less. Investments in both hardware and software must show swift ROI with the right mix of technology for the business along with increased productivity and cost reduction.

### For Business Users

• **Reduced time to value.** Processing and analysis of huge amounts of data can thwart the ability to react swiftly to insights from information. Shorter cycles from data collection to insight are needed to make critical decisions more quickly.

• **On-demand, self-service options.** Business leaders want an analytics platform that can grow to satisfy their needs for increased computing capacity and power as data volumes and the use of analytics grow. Cloud deployment enables an analytic platform that can scale to meet changing needs.

• **Simplified user experience.** Intuitive one-click analytics and rich, interactive data visualizations deliver informative business intelligence and predictive analytics so business users can gain new insights faster than ever.