C H A P T E R

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Overview of SAS Integration Technologies

What is SAS Integration Technologies?

SAS Integration Technologies, in combination with other SAS software and solutions, enables you to make information delivery and decision support a part of the information technology architecture for your enterprise.

SAS Integration Technologies provides you with software that enables you to build a secure client/server infrastructure on which to implement SAS distributed processing solutions. With SAS Integration Technologies, you can integrate SAS with other applications in your enterprise; provide proactive delivery of information from SAS throughout the enterprise; extend the capabilities of SAS to meet your organization's specific needs; and develop your own distributed applications that leverage the analytic and reporting powers of SAS.

SAS Integration Technologies is part of the SAS Intelligence Platform. For an overview of the SAS Intelligence Platform and the products it contains, see the *SAS Intelligence Platform: Overview*.

Accessibility Features of SAS Integration Technologies

This product has not been tested for compliance with U.S. Section 508 standards. If you have specific questions about the accessibility of SAS products, send them to **accessibility@sas.com** or call SAS Technical Support.

What SAS Integration Technologies Includes

SAS Integration Technologies includes the following integration and system development tools, which are based on a combination of industry-standard technologies and technology developed by SAS:

□ the Integrated Object Model (IOM), which provides distributed object interfaces to SAS software features. IOM enables you to use industry-standard languages,

programming tools, and communication protocols to develop client programs that access these services on IOM servers. The IOM Bridge communications protocol enables diverse clients to connect transparently to IOM servers on multiple platforms.

□ two types of IOM servers: the SAS Workspace Server, which surfaces the SAS programming environment to calling clients through an application programming interface (API); and the SAS Stored Process Server, which enables clients to execute parameterized SAS programs without having to know the SAS language.

Note: Other types of IOM servers include the SAS Metadata Server, which is provided with Foundation SAS, and the SAS OLAP Server, which is provided with SAS Intelligent Storage products. △

□ SAS Foundation Services, which is a set of core infrastructure services that Java programmers can use to write distributed applications that are integrated with the SAS platform. The services provide client connections to IOM servers, dynamic service discovery, user authentication, profile management, session context management, metadata and content repository access, activity logging, event management, information publishing, and stored process execution.

□ the Publishing Framework, which consists of SAS CALL routines and graphical user interfaces that enable you to publish information and events proactively by using a subscription channel model.

□ the Application Messaging interface, which provides three sets of CALL routines that enable you to incorporate messaging services into your SAS programs.

□ SAS Stored Processes, which enable client applications to execute SAS programs that are stored centrally on a server.

□ SAS BI Web Services, which enable client applications to send XML requests and parameters in a SOAP envelope. Web services can discover and execute SAS Stored Processes.

□ the SAS Web Infrastructure Platform, which enables you to develop Web applications and components using portal technology.

□ the Directory Services interface, which enables you to incorporate LDAP directory services functions into your SAS programs.

Support for SAS Open Metadata Architecture

SAS Integration Technologies supports the SAS Open Metadata Architecture, which is a metadata management facility that provides common metadata services to SAS applications. This architecture is required in order to do the following tasks:

□ use the SAS Metadata Server to store configuration information for SAS Integration Technologies and other SAS products

□ use SAS Management Console as a central interface to administer configuration and security information for SAS Integration Technologies and other SAS products

□ use new security features for user registration, authentication, and authorization (access control)

□ configure new types of IOM servers (SAS Metadata Servers, SAS Stored Process Servers, and SAS OLAP Servers) in addition to SAS Workspace Servers

□ use load balancing for workspace servers and spawners, as well as stored process servers and spawners

□ operate stored processes on a stored process server to produce streaming output for use in Web applications

□ use the SAS Web Infrastructure Platform to create Web applications that use portal technology

□ use SAS Foundation Services to implement Java applications that are integrated with the SAS Intelligence Platform

□ install and operate other SAS products that depend on the SAS Intelligence Platform

For more information about the SAS Open Metadata Architecture, see the *SAS Intelligence Platform: System Administration Guide*.

Support for Industry Standards

SAS Integration Technologies supports the following industry standard technologies, allowing you to leverage your existing infrastructure investments and skill sets to provide application interoperability:

□ client development by using any programming environment that supports bindings to the COM and DCOM or Java object model. The programming environments that are supported include the following:

□ Microsoft Visual Basic for Applications, VBScript, Visual C++ .NET, Visual Basic .NET, and Visual C# .NET

□ any Java integrated development environment (IDE), including Eclipse, Sun ONE Studio, IBM VisualAge, Borland JBuilder, and SAS webAF (which is part of SAS AppDev Studio)

□ proprietary Windows programming environments such as Borland Delphi, Sybase PowerBuilder, and others

□ asynchronous message queuing through the use of IBM WebSphere MQ (formerly called MQSeries), Microsoft MSMQ, and TIBCO Rendezvous.

□ file management that uses Web-based Distributed Authoring and Versioning (WebDAV). The publish and subscribe features of SAS Integration Technologies can access any WebDAV server. Two specific types of WebDAV servers are supported for use by SAS business intelligence Web applications:

□ Xythos Software's WebFile Server (WFS) can be used to store content for the SAS Web Infrastructure Kit and the SAS Information Delivery Portal. It can also be used to store reports that have been created with SAS Web Report Studio. The SAS User Management Customization enables a Xythos WebFile Server to interact with the SAS Metadata Server for authorization and authentication.

□ Apache HTTP Server (with its WebDAV module enabled) can also be used to store reports that have been created with SAS Web Report Studio.

□ Web services development based on the XML for Analysis interface.

□ Web application development on Web servers that are compatible with the Java 2 platform.