



CHAPTER

1

Overview of SAS Stored Processes

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What Are SAS Stored Processes?

A stored process is a SAS program that is stored on a server and can be executed as required by requesting applications. You can use stored processes for Web reporting, analytics, building Web applications, delivering packages to clients or to the middle tier, and publishing results to channels or repositories. Stored processes can also access any SAS data source or external file and create new data sets, files, or other data targets that are supported by SAS.

Why Are SAS Stored Processes Important?

The ability to store your SAS programs on the server provides an effective method for change control management. For example, instead of embedding the SAS code into client applications, you can centrally maintain and manage this code from the server. This gives you the ability to change your SAS programs and at the same time ensure that every client that invokes a stored process will always get the latest version available.

The stored process concept becomes even more powerful when you consider that these SAS programs can be invoked from multiple client contexts. For example, you might deploy Java applets and Windows applications that invoke your stored processes. If your strategy is to use a multi-tiered architecture, you can use Enterprise JavaBeans (EJB) technology, for example, to invoke the same stored processes from an application server.

Using stored processes also enhances security and application integrity because the programs that access your sensitive data are contained on the server instead of being widely distributed with the client applications.

Which Clients Can Use SAS Stored Processes?

SAS Stored Processes can be used in many different client applications. The following list gives a brief overview of each application so that you can determine which client best suits your needs.

<i>SAS Add-In for Microsoft Office</i>	The SAS Add-In for Microsoft Office is a Component Object Model (COM) add-in that extends Microsoft Office by enabling you to dynamically execute stored processes and embed the results in Microsoft Word documents, Microsoft Excel spreadsheets, and Microsoft PowerPoint presentations. Additionally, within Excel you can use the SAS add-in to access and view SAS data sources or any data source that is available from your SAS server, and analyze SAS or Excel data by using analytic tasks. For more information about using stored processes with the SAS Add-In for Microsoft Office, see the SAS Add-In for Microsoft Office Online Help, which is located within the product.
<i>SAS BI Web Services</i>	SAS BI Web Services provide a Web service interface to SAS Stored Processes. Web services can be hosted on a Java servlet container or Windows IIS. XMLA Web Services implement the Discover and Execute Web methods to return metadata about stored processes and to invoke stored processes, respectively. Starting with SAS 9.2, you can also select a set of stored processes in SAS Management Console and deploy them to the Web Service Maker to create a generated Web service. For more information about using stored processes with SAS BI Web Services, see the <i>SAS BI Web Services: Developer's Guide</i> .
<i>SAS Data Integration Studio</i>	SAS Data Integration Studio enables its administrators to publish jobs as stored processes. SAS Data Integration Studio can generate code that converts a job into a stored process, which is saved to a file and can be executed later by the SAS Stored Process Server. Metadata about the stored process is saved in the current metadata repository. For more information about using stored processes with SAS Data Integration Studio, see the SAS Data Integration Studio product Help.
<i>SAS Enterprise Guide</i>	SAS Enterprise Guide provides an integrated solution for authoring, editing, and testing stored processes. You can create stored processes from existing or new SAS code and create stored processes automatically from SAS Enterprise Guide tasks. Metadata registration and source code management are handled from one interface. SAS Enterprise Guide also has the capability to execute stored processes, which enables you to modify and test your stored process without leaving the SAS Enterprise Guide environment. For more information about using stored processes with SAS Enterprise Guide, see the SAS Enterprise Guide product Help.
<i>SAS Information Delivery Portal</i>	The SAS Information Delivery Portal provides integrated Web access to SAS reports, stored processes, information maps, and channels. If you have installed the SAS Information Delivery Portal, you can make stored processes available to be executed from the portal without the need for additional programming. The SAS Information Delivery Portal includes the SAS Stored Process Web Application. For more information about using stored processes with the SAS Information Delivery Portal, see the <i>SAS Intelligence Platform: Web Application Administration Guide</i> .

<i>SAS Information Map Studio</i>	Stored processes can be used to implement information map data sources. Stored processes can use the full power of SAS procedures and the DATA step to generate or update the data in an information map. For more information about stored process information maps, see <i>SAS Information Map Studio: Tips and Techniques</i> and the SAS Information Map Studio product Help.
<i>SAS Stored Process Web Application</i>	The SAS Stored Process Web Application is a Java Web application that can execute stored processes and return results to a Web browser. The SAS Stored Process Web Application is similar to the SAS/IntrNet Application Broker and has the same general syntax and debugging options as the Application Broker. For examples of this component, see “Using the SAS Stored Process Web Application Pages” on page 78. The SAS Stored Process Web Application is included with the SAS Web Infrastructure Platform, which is a component of SAS Integration Technologies.
<i>SAS Web Report Studio</i>	You can use SAS Web Report Studio to execute stored processes and to include stored processes or stored process results in a report. For more information about using stored processes with SAS Web Report Studio, see the <i>SAS Web Report Studio: User’s Guide</i> , the <i>SAS Intelligence Platform: Web Application Administration Guide</i> , and the SAS Web Report Studio product Help.
<i>Stored Process Service</i>	The Stored Process Service is a Java application programming interface (API) that enables you to execute stored processes from a Java program. This API is commonly used in JSP pages, but can also be used from servlets, custom tagsets and other Java applications. The Stored Process Service API is part of SAS Foundation Services; you must deploy SAS Foundation Services in order to use the Stored Process Service API.
<i>Stored Process Windows API</i>	The Stored Process Windows API is a Microsoft .NET application programming interface (API) that enables you to execute stored processes from within the .NET framework (using C# or VB.NET, for example). This API is used by both SAS Enterprise Guide and SAS Add-In for Microsoft Office, and can be used to write ASP.NET or Windows applications. The Stored Process Windows API is part of SAS Integration Technologies; you must deploy SAS Integration Technologies in order to use the Stored Process Windows API.

What Are SAS IOM Direct Interface Stored Processes?

There are two different types of stored processes. A limited form of stored processes, IOM Direct Interface Stored Processes, was introduced in SAS 8. This type of stored process operates on a SAS Workspace Server and produces packages only. IOM Direct Interface Stored Processes are still fully supported. However, the focus of this documentation is on SAS Stored Processes. SAS Stored Processes are new with SAS® 9, and they can be used with either a SAS Workspace Server (to produce packages) or a SAS Stored Process Server (to produce packages or streaming results).

