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Exploiting SAS/AF® Software from a Web Client
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ABSTRACT
Version 8 SAS/AF® software provides a convenient way to access the power of SAS® by allowing the creation of object oriented classes. The value of these SCL classes can be greatly expanded by making use of them from a web client. This allows the reuse of existing SCL code and AF programmer knowledge.

This paper will highlight the benefits of using AF from a web client and discuss how AppDev Studio™ facilitates the process of creating the web client. A live demo will show the steps involved in developing the SCL classes, using the resulting Java interfaces, and creating the web client.

A greatly expanded version of this paper will be made available on the web by SUGI. It will contain details on all the topics outlined here. You can find the final version of this paper under the Reference link on the AppDev Studio Developer's Site (http://www.sas.com/rnd/appdev).

INTRODUCTION
Before the web and good cross-platform development languages like Java existed, SAS/AF® software provided a way for SAS users to write object oriented classes and applications for deployment across a range of client machines. Even with the introduction of newer technologies and web clients, SAS/AF® can still play an important role in developing applications that take advantage of these new technologies.

AppDev Studio (ADS) is an integrated suite of development tools that provides the power you need to build web-enabled applications that use HTML, CGI, Java servlets and JavaServer Pages (JSP) as well as sophisticated Java applications and applets. AppDev Studio provides a variety of tools and capabilities that make using SAS/AF® code and classes quite easy. Within the AppDev Studio suite of products, webAF software is the primary development tool for Java-based applications. It helps you build applications that are lightweight, easy to manage, and instantly connect to SAS software. The ability to exploit SAS on the backend server is considered to be one of the greatest values of using webAF over other Java development environments.

This paper will focus primarily on creating SCL classes with SAS 8.2 and using those classes in a Java web client using JavaServer Pages. However, other types of web clients will be covered in lesser detail.

EXPLOITING SAS/AF FROM JAVA

REASONS FOR CONTINUING TO USE SAS/AF
There are a number of reasons to continue to implement part of a web client using SCL classes.

Some of the reasons include:
- Reuse of existing SCL code
- Making use of existing AF programmer knowledge
- Server side processing of data in the SAS server
- Consistency of implementation between existing AF applications and new web clients

WRITING SAS/AF® SCL CODE FOR ACCESS FROM JAVA
Version 8 of SAS/AF® introduced a greatly expanded version of the SCL language that provides many new capabilities. Some of these features facilitate the direct connection between SCL and Java. The new SCL class syntax allows the full specification of an SCL class without the need for the class editor. This is very similar to how Java classes are coded. By using class syntax and having full prototypes of every method in the class, we can automate the process of creating Java proxies for the SCL class. Also, better support for arrays allows the transfer of data between SCL and Java without the overhead of creating SCL lists.

TYPES OF WEB CLIENTS
Using AppDev Studio, SAS/AF® can be exploited from any type of Java-based web client. The following is a list of web clients that are directly supported in AppDev Studio:
- JavaServer Pages
- Servlets
- Applets
- Web installable applications

METHODS OF USING SAS/AF FROM JAVA
AppDev Studio includes a set of reusable components (called InformationBeans) which provide access to SAS and SAS/AF® functionality.

Some of the reusable components included with AppDev Studio are:
- Multidimensional table model
- Dataset model
- Library list model
- SCL functions class
- Submit class
- and many others…

In addition to the components included with AppDev Studio, users can write their own SCL classes and access the methods and properties on them from Java.

WEBAF TOOLS AND FEATURES
webAF includes a number of features which make creating and using SCL classes from web clients easier than would be possible in other development environments.

- SCL editing with syntax highlighting
- SCL compiling and class creation
- SCL debugging (integrated with Java debugging)

webAF also includes the InformationBean Wizard. The InformationBean Wizard creates a set of proxy interfaces and classes that allow those SCL classes to be used by the web client like any other Java class. It is used to select one or more SCL classes from a SAS server that will have proxies generated for them.

CONTACT INFORMATION
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