



SAS Publishing



SAS/IntrNet[®] 9.1: Overview

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Contents

What's New v

Overview v

Chapter 1 \triangle **Overview of SAS/IntrNet Software** 1

About SAS/IntrNet Software 1

Glossary 3

What's New

Overview

New programming and configuration capabilities are provided.

- Application Dispatcher

- provides Application Broker and Load Manager enhancements, additional server encodings for z/OS, a new logging feature, new options for the PROC APPSRV statement, and file upload capability.

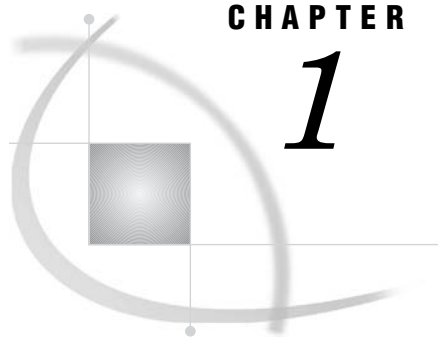
- htmSQL

- provides the new SET configuration option and allows you to use either single or double quotation marks to delimit parameter values for directives.

Note:

- This section describes the features of SAS/IntrNet that are new or enhanced since SAS 8.2.
- z/OS is the successor to the OS/390 operating system. SAS/IntrNet is supported in both the OS/390 and z/OS operating environments and, throughout this document, any reference to z/OS also applies to OS/390, unless otherwise stated.

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CHAPTER

1

Overview of SAS/IntrNet Software

About SAS/IntrNet Software 1

About SAS/IntrNet Software

SAS/IntrNet software provides a powerful suite of tools that enable you to create and deploy Web-enabled applications. These dynamic applications can provide remote access to your organization's data and bring the computing power of SAS to any desktop, regardless of whether SAS software is installed. SAS/IntrNet software includes the following components:

Application Dispatcher	enables you to build dynamic applications that give users access to the power of SAS from their Web browsers.
htmSQL	is a Common Gateway Interface (CGI) program that enables you to perform SQL processing from a Web page.
SAS/CONNECT Driver for Java	enables you to build Java applications and applets that send requests to SAS servers on behalf of a user. The tunnel feature is a complementary tool, which enables you to move your SAS server software to a machine other than your Web server.
MDDB Report Viewer	enables you to use a Web browser to generate and view reports and graphs of data that are stored in a multidimensional database (MDDB).
SAS Design-Time Controls	are add-in software components that integrate back-end SAS functionality with your desktop HTML editor.
Xplore Sample Web Application	can dynamically access a variety of SAS data and file types for reporting, generating graphics, and performing drill-down analysis of the Web.

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Glossary

access control

a method of controlling the type of access that each user has to data or to an application's functionality.

Active Server Pages (ASP)

an application environment that enables you to use HTML pages, scripts, and ActiveX server components to create Web applications.

API (application programming interface)

a set of software functions that facilitate communication between applications and other kinds of programs, services, or devices.

applet

a type of Java application that runs in a Web browser. You can run an applet by embedding it in an HTML page and then opening the HTML page in the browser, or by using the appletviewer tool, which is provided in the Sun Microsystems Java Development Kit (JDK). Specific HTML tags enable you to embed Java applets in an HTML page.

Application Broker

a Common Gateway Interface (CGI) application that resides on a Web server and which is invoked in order to process information from an HTML form. The Application Broker's configuration file defines the services that are available to Application Dispatcher applications.

Application Dispatcher

a component of SAS/IntrNet software that enables you to send information from a browser to a SAS session for processing and which returns the results to your browser. The Application Dispatcher includes the Application Broker and the Application Server.

Application Dispatcher application

the combination of one or more input components (such as HTML pages or HTML forms) and one or more Dispatcher programs. A Dispatcher application can also consist of several HTML pages or forms and several Dispatcher programs.

Application Dispatcher program

a program that is run by the Application Server and which produces the output from a Dispatcher application. A Dispatcher program can be a SAS language program, a SOURCE catalog entry, an SCL catalog entry, or a compiled macro.

Application Load Manager

an optional component of the Application Dispatcher that distributes requests to multiple Application Servers. The Application Load Manager keeps track of Application Servers as they are started and terminated, and it ensures that none of the servers becomes overloaded.

Application Server

a SAS session that is waiting for input from the Application Broker, or which is launched on demand by the Application Broker.

authentication

the process of verifying the identity of a person or process within the guidelines of a specific security policy.

authorization

the process of using a security policy and an authentication scheme to control access to various system resources.

automatic variable

a variable that is automatically defined by htmSQL and which contains htmSQL processing information.

Broker

See Application Broker.

cascading style sheet

a set of specifications that control how HTML elements are displayed in a Web browser. For example, you can use a CSS to specify fonts, sizes, and colors of the text in HTML documents. Cascading style sheets make it easier for authors of HTML documents to maintain a consistent style on multiple pages.

catalog

See SAS catalog.

character entity reference

a symbolic reference in the form

```
&name;
```

that enables you to insert a special character into an HTML document. You can use a character entity reference when you need to insert a character that is not on your keyboard or when you cannot insert a character directly because of its significance in the HTML.

client

a workstation or application that requests services, data, or other resources from a server. See also server.

Common Gateway Interface (CGI)

a programming interface that enables a Web server to communicate with an external program and to pass the results back to a user.

Common Metadata Repository

a general-purpose metadata management facility that provides metadata services to SAS/EIS applications. The Common Metadata Repository enables SAS/EIS software to share metadata with other SAS products.

configuration file

a file that defines the services that are available for Application Dispatcher applications. This file resides on the Web server, often in the same directory as the Application Broker.

content type

a value that tells a client's Web browser how to interpret and display a transferred object such as an image file, a sound file, or a video file. For example, GIF, JPG, TIFF, MIDI, and WAV are content types. See also MIME.

continuation character

in htmSQL, a character that can be used in your configuration file. If the last non-blank character of the line is a continuation character, then at run time, the continuation character (and all blank spaces that immediately precede and follow the continuation character) is replaced with the contents of the next line (minus leading white space).

cookie

a character string that contains information about a visitor to a Web site. The Web server sends cookies to a computer via a browser. Applications use cookies to uniquely identify visitors and sessions.

data set

See SAS data set.

data source

in htmSQL, a specification of a SAS/SHARE server and of either the server libraries or the database management system (DBMS) that a client application can access through that server. Data sources are defined in data source definition files.

data source definition file

a file that identifies a SAS/SHARE server that htmSQL can get data from. A data source definition can also specify SAS data libraries or an external database management system (DBMS) that htmSQL accesses through that server.

database management system (DBMS)

a software application that enables you to create and manipulate data that is stored in the form of databases.

DBMS

See database management system (DBMS).

debug flag

a value that is assigned to the `_DEBUG` variable in order to activate various debugging features. You can specify a debug flag with any Application Dispatcher request.

descriptor information

information about the contents and attributes of a SAS data set. SAS creates and maintains descriptor information within every SAS data set.

design-time controls

a group of add-in components for HTML editors that run in the Windows operating environment. These controls enable users to build CGI-based reports and to create graphics.

directive

- (1) a processing command or instruction in an htmSQL input file.
- (2) a processing instruction in the Application Broker configuration file. Each Application Broker directive contains a keyword and a value.

drill down

to select an element in an image in order to display additional information about that element, generally by displaying another Web page or another section in the same Web page.

encoding

a set of characters (letters, logograms, digits, punctuation, symbols, control characters, and so on) that have been mapped to numeric values (called code points) that can be used by computers. The code points are assigned to the characters in the character set by applying an encoding method. Some examples of encodings are `wlatin1`, `wcyrillic`, and `shift-jis`.

encryption

any procedure that is used to convert data into a form that only the intended recipient can read or use.

engine

a component of SAS software that reads from or writes to a file. Each engine enables SAS to access files that are in a particular format. There are several types of engines. See also `library engine` and `view engine`.

firewall

a set of related programs that protect the resources of a private network from users from other networks. These programs execute on the private network's gateway server. A firewall can also control which outside resources the internal users are able to access.

frame

a Web page that is displayed within another Web page. Frames divide Web pages into rectangular segments that display different HTML files.

hidden field

in an HTML form, a field whose name and value are not visible in the Web browser.

host

a computer that is identified by an IP address or by a domain name. In Web logs, the host is the machine that requested access to a Web site.

HTML (HyperText Markup Language)

a coding system in which the codes indicate the layout and style of the text in a text file. Other HTML codes enable you to embed electronic objects such as images, sounds, video streams, and applets (small software applications) into HTML documents. All Web browsers can process HTML documents.

HTML formatting tools

a collection of SAS macros that enable users to generate SAS output in HTML format without knowing how to code HTML.

HTTP (HyperText Transfer Protocol)

a protocol for transferring data to the Internet. HTTP provides a way for servers and Web clients to communicate. It is based on the TCP/IP protocol.

HTTP header

a group of fields that precedes any output that is created by an Application Dispatcher program. Each line of the header is a field, and each field consists of a name (for example, `Content-type:` or `Expires:`) and a value (for example, `text/html` or `02 Feb 2002 00:00:00 GMT`). The Application Server generates a default HTTP header if the Application Dispatcher program does not generate one.

HTTP tunneling

a method of transferring data between clients and servers that otherwise could not exchange data because of applet security restrictions, firewalls, or other security restrictions on a network. HTTP tunneling is frequently used to enable an applet to connect to a server that is on a different computer system than the applet's Web server.

inetcfg

See SAS/IntrNet Configuration Utility.

input component

a part of an Application Dispatcher application that usually consists either of static HTML pages that contain URL references or of dynamically generated HTML pages that contain either HTML forms or links to an Application Broker URL. The input component selects the appropriate Application Dispatcher program to run and passes data to that program.

input file

in htmSQL, a file that contains the HTML and SQL code that you want processed.

IP address

the Internet Protocol address of a host.

Internet Media type

See MIME type.

Java Database Connectivity (JDBC)

a standard interface for accessing SQL databases. JDBC provides uniform access to a wide range of relational databases. It also provides a common base on which higher-level tools and interfaces can be built.

Java plug-in

program code that enables an applet to use the most current Java features rather than using a browser's default Java virtual machine.

JavaServer page (JSP)

a type of servlet that enables users to create Java classes through HTML.

launch service

a type of Application Server service that starts a new server for each Application Dispatcher request.

library

See SAS data library or server library.

library engine

an engine that accesses groups of files and puts them into the correct form for processing by SAS utility windows and procedures. A library engine also determines the fundamental processing characteristics of the library, presents lists of files for the library directory, and supports view engines. See also engine and view engine.

libref

a name that is temporarily associated with a SAS data library. For example, in the name SASUSER.ACCOUNTS, the name SASUSER is the libref. You assign a libref with a LIBNAME statement or with an operating system command.

log file

a file created by a server that contains information about that server's activity.

macro variable

a variable that is part of the macro programming language. The value of a macro variable is a string that remains constant until you change it. Macro variables are sometimes referred to as symbolic variables.

MDDB

multidimensional database. A specialized data storage structure in which data is presummarized and cross-tabulated and then stored as individual cells in a matrix format, rather than in the row-and-column format of relational database tables. The source data can come either from a data warehouse or from other data sources.

MDDBs can give users quick, unlimited views of multiple relationships in large quantities of summarized data.

MDDB Report Viewer

a CGI-based viewer that enables users to generate and view data that is stored in a multidimensional database (MDDB) without starting a SAS session. The data can be displayed either in a report format or as a graph.

member

a SAS file in a SAS library.

Message Router

one of the tunnel feature's server programs. The Message Router is a CGI program that passes requests to the SAS server, provided that the statement or request meets certain criteria. The Message Router receives processed statements or requests from the Session Agent and then passes them to the applet that is running on the client machine.

metabase

the name of a repository in which data (tables or MDDBs) has been registered for a SAS/EIS application. See also repository.

metadata

a description or definition of data or information.

metadata repository

a collection of related metadata objects, such as the metadata for a set of tables and columns that are maintained by an application. The Open Metadata Repository is an example.

MIME (Multipurpose Internet Mail Extensions)

a method of registering content types and their associated actions with mechanisms for actions such as retrieval and display. See also content type.

MIME type

Multipurpose Internet Mail Extensions type. Examples of MIME types include image/jpeg, application/zip, and text/html.

multidimensional database (MDDB)

a specialized data storage structure in which data is presummarized and cross-tabulated and then stored as individual cells in a matrix format, rather than in the row-and-column format of relational database tables. The source data can come either from a data warehouse or from other data sources. MDDBs can give users quick, unlimited views of multiple relationships in large quantities of summarized data.

name/value pair

a field name plus the data value that the field contains. In an Application Dispatcher application, a name/value pair can be provided in a URL, or it can be obtained from a completed HTML form. Name/value pairs are passed to the Application Broker, which causes the Application Server to create either macro variables or SAS Component Language (SCL) list items whose names match the names of the name/value pairs. The macro variables or the SCL list items contain the values of the name/value pairs.

numeric character reference

a symbolic reference in the form

`&#nnn;`

where *nnn* is a decimal number. The decimal number represents a special character and enables you to insert the special character into an HTML document. You can use

a numeric character reference when you need to insert a character that is not on your keyboard or when you cannot insert a character directly because of its significance in the HTML.

Output Delivery System (ODS)

a component of SAS software that can produce output in a variety of formats such as markup languages (HTML, XML), PDF, listing, RTF, Postscript, and SAS data sets.

path separator character

a character that can be used to separate pathnames or path patterns in the values of the INCLUDE, NOINCLUDE, and DATASRCFILE options.

pool service

a type of Application Server service that starts new servers as needed for Application Dispatcher requests. Once started, a server remains available to process future requests.

port

in a network, a communications endpoint that can be either a number (the port number) or a name. The Application Server listens for requests on the port that is specified in the PORT= parameter of the PROC APPSRV statement. If a name is supplied, then the Application Server looks up that name in the system network services file (/etc/services on UNIX) and maps the name to a port number.

program component

a SAS program that is part of an Application Dispatcher application. The program is invoked within the Application Server. It receives requests from the server, processes the requests, and returns the results to the Application Broker for delivery to the Web browser.

program library

a SAS library, a partitioned data set, or a directory that has been designated by the server administrator as a location from which programs can be run.

protocol

a planned method of exchanging data over a network. For example, the FTP protocol is a well-defined standard for retrieving files from an FTP server. For the Application Dispatcher, the protocol determines how the Application Broker communicates with the Application Server.

query string

an optional part of a URL that contains one or more name/value pairs, preceded by a question mark. The name/value pairs are sent as input to a program component.

relative URL

a partial URL that references another location that is relative to a current URL. A relative URL is constructed by omitting the URL protocol, the server name, and optionally part or all of the path.

repository manager

a list of metadata repository locations. An application that uses the Common Metadata Repository can obtain a list of all the repository locations from the repository manager. Creating multiple repository managers enables you to use different sets of metadata repositories.

repository registration

the process of registering data that describes a table. Each table that you register in a repository creates a registration in that repository.

request

a single connection from an Application Server client that causes a single program to run within the Application Server.

request data

data that is delivered as input with a request. The request data includes the information that is required in order to run the program, as well as input data for the program. See also request.

return code

a numeric value that indicates whether a request was successful. A return code can also indicate a specific error or warning.

SAS catalog

a SAS file that stores many different kinds of information in smaller units called catalog entries. A single SAS catalog can contain several different types of catalog entries. See also SAS catalog entry.

SAS catalog entry

a separate storage unit within a SAS catalog. Each entry has an entry type that identifies its purpose to SAS. Some catalog entries contain system information such as key definitions. Other catalog entries contain application information such as window definitions, Help windows, formats, informats, macros, or graphics output.

SAS data library

one or more SAS files that are accessed by the same library engine and which are referenced and stored as a unit.

SAS data set

a file whose contents are in one of the native SAS file formats. There are two types of SAS data sets: SAS data files and SAS data views. SAS data files contain data values in addition to descriptor information that is associated with the data. SAS data views contain only the descriptor information plus other information that is required for retrieving data values from other SAS data sets or from files whose contents are in other software vendors' file formats.

SAS spawner

a program that runs on a remote host and which listens for client requests for connection to the remote host. When the spawner program receives a request, it invokes a SAS session on the remote host.

SAS/IntrNet Configuration Utility

a program that is used to create an Application Dispatcher service.

SAS/SHARE driver for JDBC

a data services component of SAS/SHARE software. The SAS/SHARE driver for JDBC enables you to create Java programs that let users access and update data through a direct connection to a SAS/SHARE server. The SAS/SHARE driver for JDBC is part of the SAS/IntrNet Java tools.

SAS/SHARE server

the result of an execution of the SERVER procedure. The SERVER procedure is part of SAS/SHARE software. A server runs in a separate SAS execution that services users' SAS sessions by controlling and executing input and output requests to one or more SAS data libraries.

server

in a network, a computer that is reserved for servicing other computers in the network. Servers can provide several different types of services, such as file services and communication services. Servers can also enable users to access shared resources such as disks, data, and modems. See also client.

server application

an application that runs on a server machine. Users can use server applications without having to load those applications on their client machines.

server library

a SAS data library that has been defined to a SAS server. The SAS server controls access to the library.

service

a collection of one or more Application Servers. A service definition determines how requests are routed to these servers and sometimes describes how to start new Application Servers as they are needed. Services are defined in the Application Broker configuration file.

service root directory

the directory that contains configuration directories for Application Dispatcher services. Each service has a separate directory in the service root directory.

servlet

a Java program that runs on a Web server. Servlets can be considered a complementary technology to applets, which run in Web browsers. Unlike applet code, servlet code does not have to be downloaded to a Web browser. Instead, servlets send HTML or other appropriate content back to a browser or to another type of Web-based client application.

session

an object that identifies a user across multiple requests in an application and which associates information with that user. A session is explicitly referenced in each request by attaching a session ID string to the request. A session preserves authentication information across multiple requests and enables the user to save macro variables and SAS library members for the duration of the session.

Session Agent

a detached process that communicates with the SAS server machine. Based on the statement or request from the applet, the Session Agent either starts a SAS/CONNECT session on the SAS server machine or establishes a connection to a SAS/SHARE server. The Session Agent passes statements or requests from the Message Router directly to the SAS/CONNECT or SAS/SHARE server, and it returns the results of the processed statement or request to the Message Router.

session reconnect

an Application Dispatcher request that connects to an existing session by specifying the `_SERVICE`, `_SERVER`, `_PORT`, and `_SESSIONID` values for that session. Reconnecting to a session enables the requested program to access macro variables and SAS library contents that were created by previous requests during that session.

socket service

a type of Application Server service that routes requests to one or more previously started Application Servers.

SOURCE entry

a type of catalog entry that contains text from SAS Text Editor windows.

SQL

See Structured Query Language (SQL).

static query

in htmSQL, a query that consists of expressions and clauses that contain constant values and no references to variables.

Structured Query Language (SQL)

a standardized, high-level query language that is used in relational database management systems to create and manipulate database management system objects. SAS implements SQL through the SQL procedure.

system repository manager

the default repository manager for your site. See also repository manager.

TCP/IP

an abbreviation for a pair of networking protocols. Transmission Control Protocol (TCP) is a standard protocol for transferring information on local area networks such as Ethernets. TCP ensures that process-to-process information is delivered in the correct order. Internet Protocol (IP) is a protocol for managing connections between hosts. IP routes information through the network to a particular host. It also fragments and reassembles information in host-to-host transfers.

TELNET (Teletypewriter Network Protocol)

a program that provides virtual terminal services that enable you to log on to a server from a terminal that is connected to a client. The client performs as if it were physically connected to the server. In SAS/CONNECT software, TELNET is always executed via an automatic log-on script, not directly by a user.

thin client

an application that is deployed across a network, thereby reducing the need for disk space on client machines. Thin-client development tools reduce the cost of deploying and maintaining applications. Costs are lower because thin-client applications need to be updated only on the server. Otherwise, multiple user machines that perhaps run multiple operating systems would have to be updated.

timeout

an error condition produced when a required response from a device is not received. Some SAS script statements control what happens when a timeout occurs.

trantab

a table that is used for translating character codes from one encoding to another. See also encoding.

tunnel feature

an optional feature of SAS/IntrNet that implements HTTP tunneling for Java applets, using the SAS/SHARE driver for JDBC or the SAS/CONNECT driver for Java. HTTP tunneling enables you to move your SAS server software to a machine other than your Web server. The tunnel feature consists of the Message Router and Session Agent programs that are installed on your Web server.

tunneling

See HTTP tunneling.

unsafe character

any character in an input value that could be misinterpreted as part of the syntax of the SAS macro language. Single quotation marks, double quotation marks, ampersands, percent signs, and semicolons are all unsafe characters.

variable query

in htmSQL, a query that enables Web page users to customize the query by specifying their own values for search parameters. The query is written using variable references that are given values when users access the Web page.

view engine

an engine that enables SAS to process SAS data views. A view engine performs in a transparent manner.

Web browser

a software application that is used to present Web content. To accomplish this task, the browser submits URL (Universal Resource Locator) requests to a Web server and handles any results that the request generates.

Web server

a computer program that provides Web access to other programs (usually on other machines), called clients, that request those services. The Web server executes the Application Broker.

Your Turn

If you have comments or suggestions about *SAS/IntrNet 9.1: Overview*, please send them to us on a photocopy of this page, or send us electronic mail.

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