SAS® Forecast Server 1.4

System Requirements

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The correct bibliographic citation for this manual is as follows: SAS Institute Inc. 2006. *SAS® Forecast Server 1.4: System Requirements*. Cary, NC: SAS Institute Inc.

SAS® Forecast Server 1.4: System Requirements

SAS Institute Inc., SAS Campus Drive, Cary, North Carolina 27513.

1st printing, December 2006

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System Requirements for SAS Forecast Server

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Hardware Requirements

Memory Requirements

- SAS Forecast Studio client installation requires 500 megabytes of memory.
- SAS Forecast Server Mid-Tier and SAS Analytics Platform, SAS servers (SAS Metadata Server and SAS Workspace Server), and client installation require 2 gigabytes of memory.

Operating System Requirements

The SAS Forecast Server Mid-Tier is a Java-based, middle-tier component that enables automatic forecasting of time series data. The SAS Forecast Server Mid-Tier is installed as an application within the SAS Analytics Platform, and can be installed on the following operating systems:

- Windows XP (32-bit)
- Windows Server 2003 (Standard Edition)
- Windows Server 2003 (Enterprise Edition)
- UNIX AIX (64-bit), Release 5.1 or later
- Solaris (64-bit)
- HP-UX (64-bit)
- HP-Itanium

SAS Forecast Studio is a Java-based, client-tier application that is based on SAS High-Performance Forecasting procedures. The SAS Forecast Studio client can be installed only on the Windows XP operating system.

Software Requirements for SAS Forecast Server

SAS Software Requirements

Required SAS Software

Your software bundle includes the following required SAS products and software:

- SAS/OR (unless SAS/OR is explicitly licensed, use of SAS/OR is limited to licensed users of SAS Forecast Server)
- SAS Forecast Server bundle

CAUTION: SAS Forecast Server 1.4 must be used with SAS High-Performance Forecasting 2.2 that is available in your software bundle. If you use SAS Forecast Server 1.4 with any earlier versions of SAS High-Performance Forecasting, then you might get unexpected results.

Optional SAS Software

The following SAS products and components are often used with SAS Forecast Server, but are not required to operate SAS Forecast Server:

- SAS Data Integration Studio
- SAS BI Server
- SAS Enterprise Miner

Third-Party-Vendor Software Requirements

In addition to the licensed SAS products required to support SAS Forecast Server, some third-party software is required. For information about the third-party software and to access downloads of the software, see the following Web site:
http://support.sas.com/documentation/configuration/thirdpartysupport/

Note: For full functionality, installation of the Java Runtime Environment 1.4.2_09 is required on both the client tier and the middle tier.

Web Browser

Internet Explorer 5.5 (or later) is required.

Data Requirements

Overview of SAS Forecast Server Data Flow

Figure 1 shows the general flow of data in SAS Forecast Server.

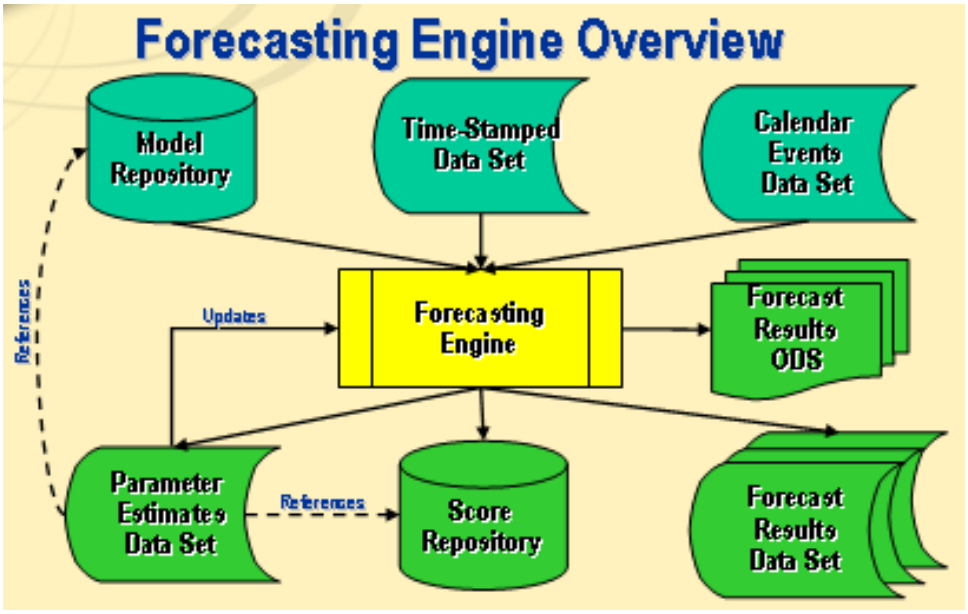

Figure 1. Data Flow in SAS Forecast Server

When using SAS Forecast Server, you create or update forecasts by using the following general data flow:

1. Create or generate an input SAS data set, which you store in a pre-assigned SAS library. For information about pre-assigning a SAS library, see the post-installation tasks document.
2. Open SAS Forecast Studio (client), and perform the following steps:
   (a) Create a project.
   (b) Select your input library and SAS data set.
   (c) Specify how to forecast your data.
   (d) Assign variables to roles.
   (e) Configure the hierarchy.
   (f) Enter project properties.
   (g) Perform additional steps.
3. Create the forecasting model database.
4. Select the default model selection list.
5. Create events.
6. Generate forecasting results.

7. Modify estimates and forecast data again, if necessary, and repeat steps 3-6 (iterative process).
8. Store forecasting results and parameter estimates.

For a more information about using SAS Forecast Studio, see the SAS Forecast Studio Help System.

Input Data Set Requirements

Overview

In order for SAS Forecast Server to generate a forecast, the input SAS data set must contain one variable for each time series. SAS Forecast Server requires a date or datetime variable in the data set in order to generate forecasts. SAS Forecast Server generates forecasts from timestamped data that consists of unique and equally spaced data over time. If the data are not equally spaced with regard to time, then SAS Forecast Server uses the date or datetime variable to accumulate the data into a time series before forecasting. The input data set must be a single SAS data set that is pre-assigned. For information about pre-assigning libraries, see the post-installation tasks document.

You can use transactional data to generate a forecast. You can use the accumulation options in SAS Forecast Studio to prepare the time series data.

Data Set Variables

You can have the following variables in the input data set:

- The time ID variable must contain the date or datetime value of each observation.
- BY variables enable you to group observations into a hierarchy.
- Dependent variables are the variables used to model and forecast.
- Independent variables are the explanatory or input variables that are used to model and forecast the dependent variable.
- Reporting variables are not used for analysis but for reports only.
- Indicator variables are used to signify any unusual event in the model, such as holidays and promotions.

The names of the variables cannot match any of the reserved variable names that are used in the output data set. The variable names in your input data set cannot start with an underscore and cannot match any of the variable names in the output data sets that SAS Forecast Server creates. The following table lists the variables that are created by the output data sets. For more information about the output data sets that are created, see the *SAS High-Performance Forecasting User's Guide*.

If your input data set contains one of the variables listed in Table 1 and you try to assign this variable to a role in SAS Forecast Studio then an error message appears.

Table 1. Reserved Variable Names

Variable Name	Description
_*VariableName*	Any variable name that begins with an underscore
ACTUAL	Dependent series value
COMP	Name of the component
COMPONENT	Model component
CROSS	Cross variable name
DSVAR	Data set variable mapping
EST	Parameter estimate
FACTOR	Model factor
LABEL	Parameter or statistic label
LAG	Lag of input
LOWER	Lower confidence limit
MODE	Mode of decomposition
MODEL	Name of model
MODELVAR	Model variable mapping
NAME	Variable name
PARM	Parameter name
PREDICT	Component forecast
PVALUE	Parameter estimate *p*-value
SEASON	Seasonal index
SELECT	Name of selection list
SHIFT	Shift
STAT	Statistic name
STATUS	Indicates success/failure in estimating parameter
STD	Prediction standard error
STDERR	Parameter estimate standard error
TIME	Time ID
TIMEID	Time ID values
TVALUE	Parameter estimate *t*-value
TRANSFORM	Transformation applied
UPPER	Upper confidence limit
AADJRSE	Amemiya's adjusted R-Square
ACF	Autocorrelations
ACF2STD	Indicates ACF beyond two standard errors
ACFLPROB	Autocorrelation log probabilities
ACFNORM	Normalized autocorrelations
ACFPROB	Autocorrelation probabilities
ACFSTD	Autocorrelation standard errors
ACOV	Autocovariances
ADJRSQ	Adjusted R-Square
AIC	Akaike information criterion
APC	Amemiya's prediction criterion
AVG	Average value
CC	Cycle component
CCF	Cross-correlations
CCF2STD	Indicates cross-correlations beyond two standard errors

Table 1. (continued)

Variable Name	Description
CCFNORM	Normalized cross-correlations
CCFLPROB	Cross-correlation log probabilities
CCFPROB	Cross-correlation probablities
CCFSTD	Cross-correlation standard errors
CCOV	Cross-covariances
CSS	Corrected sum of squares
ERROR	Prediction errors
IACF	Inverse autocorrelations
IACF2STD	Indicates inverse autocorrelations beyond two standard errors
IACFNORM	Normalized inverse autocorrelations
IACFLPROB	Inverse autocorrelation log probabilities
IACFPROB	Inverse autocorrelation probabilities
IACFSTD	Inverse autocorrelation standard errors
IC	Irregular component
LAG	Time lag
LAG*h*	Correlation or cross-correlation statistics for lag *h*
LOWER	Lower confidence limits
MAE	Mean absolute error
MAPE	Mean absolute percent error
MAXERR	Maximum error
MAXIMUM	Maximum value
MAXPE	Maximum percent error
ME	Mean error
MEAN	Mean value
MEDIAN	Median value
MINERR	Minimum error
MINIMUM	Minimum value
MINPE	Minimum percent error
MPE	Mean percent error
MSE	Mean square error
N	Number of non-missing observations or Number of variance products
NAME	Variable name
NMISS	Number of missing observations
NOBS	Number of observations
ORIGINAL	Original series index
PACF	Partial autocorrelations
PACF2STD	Indicates PACF beyond two standard errors
PACFLPROB	Partial autocorrelation log probabilities
PACFNORM	Partial normalized autocorrelations
PACFPROB	Partial autocorrelation probabilities
PACFSTD	Partial autocorrelations standard errors
PCSA	Percent change seasonal adjusted component
PERIOD*t*	Decomposition component value or trend statistic for time period *t*
PREDICT	Predicted values
RANGE	Maxinum value

Table 1. (continued)

Variable Name	Description
RMSE	Root mean square error
RSQUARE	R-Square
RWRSQ	Random walk R-Square
SA	Seasonal adjusted component
SBC	Schwarz Bayesian information criterion
SC	Seasonal component
SCSTD	Seasonal component standard errors
SIC	Seasonal-irregular component
SEASON*s*	Season statistic value for season *s*
SSE	Sum of squares error
STD	Prediction standard errors
STDDEV	Standard deviation
SUM	Summation value
TC	Trend component
TCC	Trend-cycle component
TCS	Trend-cycle-seasonal component
UMSE	Unbiased mean square error
URMSE	Unbiased root mean square error
UPPER	Upper confidence limits
USS	Uncorrected sum of squares
WN	White noise test statistics
WNLPROB	White noise test log probabilities
WNPROB	White noise test probabilities

Additional Information

Often your data are not in the appropriate format for SAS Forecast Server. To avoid misleading or incorrect analyses from your time series data, you should preprocess your data.

- For general information about working with time series data, see the *SAS/ETS User's Guide*.
- For more information about creating time series data from transactional data, see "The TIMESERIES Procedure" and "The EXPAND Procedure" documentation in the *SAS/ETS User's Guide*.
- For more information about creating SAS data sets from Excel files, see the IMPORT Procedure documentation in the *Base SAS Procedures Guide*.
- For more information about transposing data for statistical analysis, see "The TRANSPOSE Procedure" documentation in the *Base SAS Procedures Guide*.

National Language Support

SAS Forecast Server is available in the following languages:

- Chinese (Simplified)
- English
- French
- Italian
- Japanese
- Korean

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Your Turn

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