TIBCO Statistica™

Statistica Server Administrator's Guide

Software Release 13.3

June 2017

Two-Second Advantage®

Important Information

Contents

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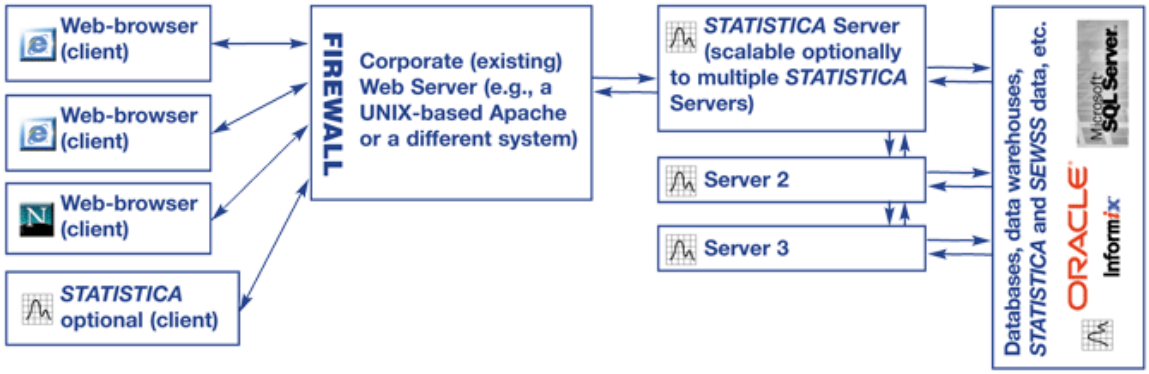
Introduction

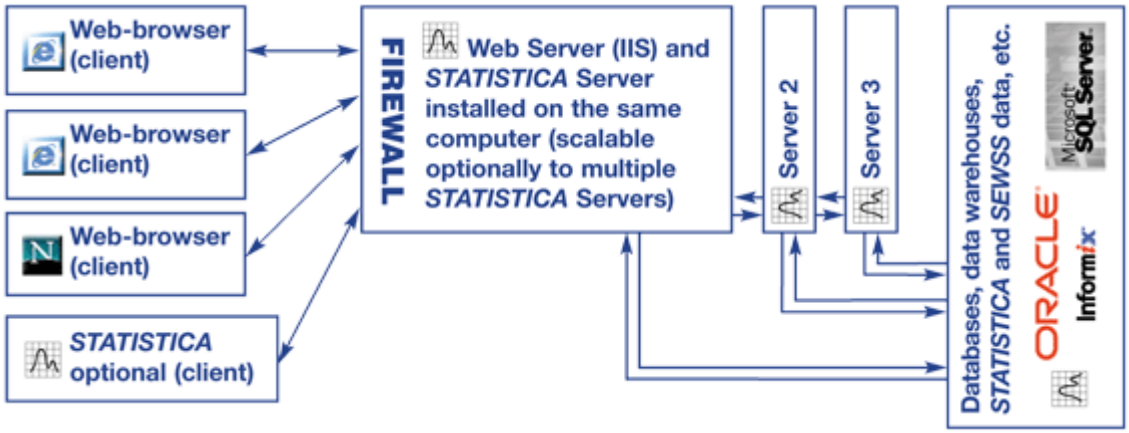
Statistica Server was previously named WebSTATISTICA. Your current version may still have that name, but when you upgrade, the name will change to Statistica Sever.

Statistica Server (Server side) is a highly scalable, enterprise-level, Web-based data analysis and database gateway application system built on distributed processing technology. It fully supports multi-tier **Client-Server** architecture configurations. Statistica Server (Server side) exposes the analytic, query, reporting, and graphics functionality of Statistica through easy-to-use, interactive, standard Web interfaces. It is offered as a complete, ready to install application with an Internet browser-based user interface, enabling users in remote locations to interactively create data sets, run analyses, and review output.

Although the general design uses - in a typical configuration - two machines, the Web Server (for example., a UNIX-based Apache system) and at least one Statistica Server (optionally scalable to multiple Statistica Servers):



In many cases, the Statistica Server could be installed on the same machine as the Web Server, if desired:



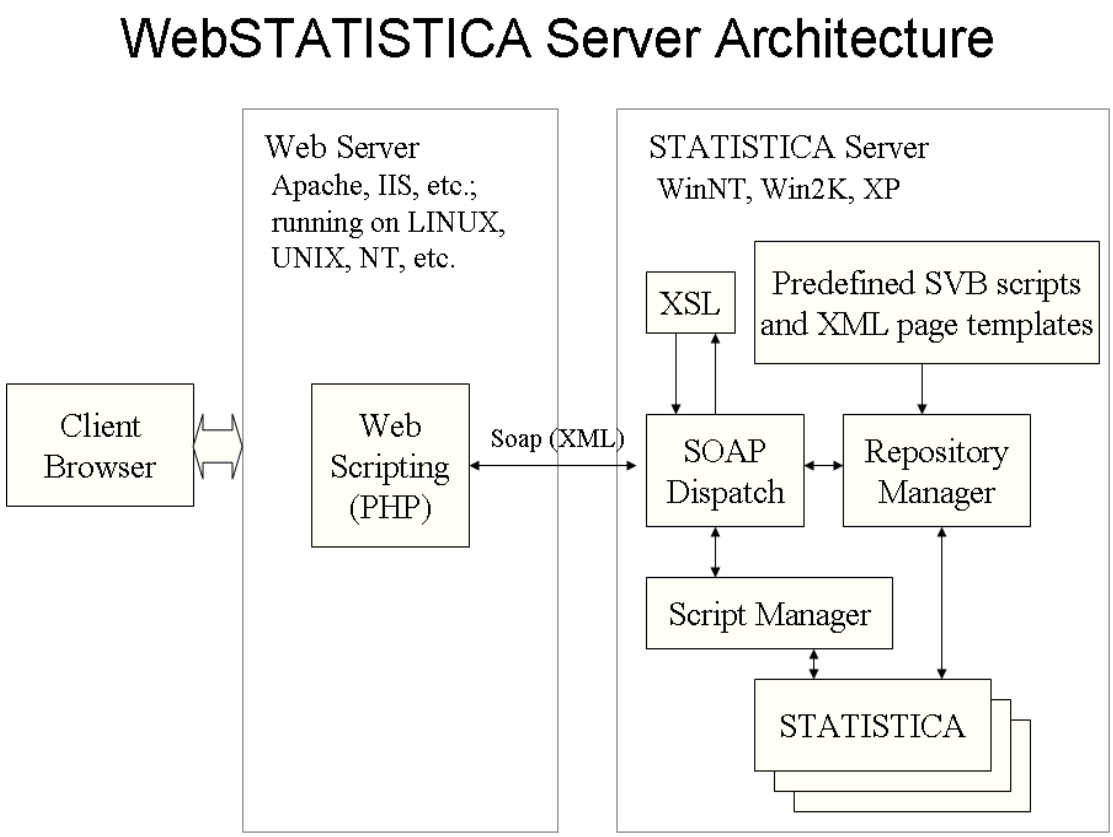
Architecture

Overview

The Statistica Server system is composed of two primary components – the Statistica Server (Server side) and the Web Server Support.

- The Statistica Server (Server side):
  - performs the analytical processing to run statistical analyses
  - manages and returns results to the user
- The Web Server Support component
  - works with the Web Server
  - connects the Web Server to the Statistica Server (Server side).

This can be diagrammed as follows:



Web Server Support

The Web Server Support component uses the PHP scripting language to execute scripts on the Web Server. These scripts communicate to the Statistica Server (Server side) via **TCP/IP** using the XML-based **Simple Object Access Protocol** (SOAP). Every request that comes in from a client browser is processed by the **main.php** script. This script pre-processes the request, and then sends the information to the Statistica Server (Server side) via the SOAP protocol.

PHP is widely supported on the most popular Web servers and operating systems. Since this Web Server Support component is script based, Statistica Server (Client side) can be used with UNIX-based Web servers such as Apache and Windows-based Web servers such as IIS.

Statistica Server (Client side)

The Statistica Server (Server side) component receives requests from the Web Server Support, processes them, and returns results to the user.

This component must run on a Windows-based server machine such as Windows 2000 or XP. If you are using a Windows-based Web server such as Microsoft's Internet Information Server (IIS), then these two components can be located on the same machine.

The main subcomponents of the system are as follows:

User Management

The User Management subcomponent authenticates users, validates incoming requests, manages user permissions, and tracks licensing and session lifetimes.

Repository

The Repository manages access to the central store of information used by the Statistica Server (Client side) system. This information includes:

- User configuration information
- Supporting scripts
- User data to analyze
- Stored analytical results
- Other kinds of information

The Repository data is kept within a directory hierarchy on the Statistica Server (Server side), and Statistica Server (Client side) leverages the NTFS security model to control access to system files.

Statistica Script Manager

The **Statistica Script Manager** is the heart of the Statistica Server system. This subcomponent executes Statistica Visual Basic (SVB) scripts to either:

- generate Web user interfaces
- validate parameter settings and variable selections for requested Statistica analytic or data management procedures

Note: SVB is not used for any calculations or statistical analyses, which are always performed via the highly optimized compiled Statistica procedures.

These SVB scripts are executed by specialized instances of Statistica, optimized to work in the Web environment. The Statistica Script Manager:

- can start as many different instances of Statistica as necessary to service incoming requests
- takes care of prioritizing and queuing incoming requests as necessary
- handles running batch jobs

Transformation Manager

Statistica Server (Client side) communicates via XML. Before it returns results to the user, it uses XLS (a standard XML-based language for defining XML data transformations) to convert them into HTML so they display as a Webpage.

Types of Configurations

Single Machine

If you are using a Windows-based Web server, such as Microsoft's Internet Information Server (IIS), then we recommend that you install both the Web Server Support component and the Statistica Server (Server side) component on the same machine.

This configuration is more secure because the communication between the Web Server Support component and the Statistica Server (Server side) component is all done locally on the one machine, and none of it shows up on the network.

Dual Machine

Running the Web Server Component and the Statistica Server (Server side) component on different machines is required if the Web Server is not running on a Windows-based server, but could also be used in a Windows environment as needed. An example of this might be integrating into an existing Web site.

Distributed Statistica Server

If your site has heavy computing requirements or a very large number of concurrent users, then the Statistica Server system can scale using the Distributed Statistica Server. This version of Statistica Server enables the Statistica Script Manager to run instances of Statistica across the network to multiple machines.

Configuration

Web Server Component

The Web Server Component consists of these commonly used elements:

- images
- PHP scripts
- static HTML files

Location of Web Files

These files need to be placed on your Web Server subdirectory of the Web root directory. Where they are located will affect the Web address that users use to access the server.

For instance, if your Web server responds to the **www.mycompany.com domain**, then placing these files in subdirectory **WebSTATISTICA** in the Web root directory means that users will need to enter **www.mycompany.com/WebSTATISTICA** to access the Statistica Server system.

Under Microsoft's Internet Information Server (IIS), this will be **c:\inetpub\wwwroot\WebSTATISTICA** by default, so that Statistica Server can be accessed as **www.mycompany.com/WebSTATISTICA**.

Configuring IIS for PHP

This product includes PHP, freely available from **http://www.php.net/**.

In the common case where Microsoft's IIS will be acting as the Web Server, the Statistica Server installer will optionally install PHP for you. Simply choose the necessary options during install. PHP is typically installed to the **C:\PHP** directory.

Once the PHP files are installed, IIS must be manually configured to enable PHP scripts to run by adding **.php** to the list of acceptable file extensions, and associating those files with the **php.exe** executable file. Refer to the **Statistica Server Installation Instructions** for details.

Configuring Apache

If the web files aren't installed to the machine that Apache is being placed on, you can copy them from the directory **\English\www** on the installation media. The file **config.php** will need to be modified to point to the correct SOAP host after the files are copied.

Configuring Apache for PHP as a CGI executable

1. Insert these three lines to your Apache httpd.conf configuration file to set up the CGI binary version of PHP:

```
ScriptAlias /php/ "c:/php/"
AddType application/x-httpd-php .php
Action application/x-httpd-php "/php/php.exe"
```

2. Modify **c:/php/** so it points to the correct path.

Other Apache Settings

Listed below are the minimum settings that should be changed to configure a new Apache installation to work with Statistica Server.

- This setting "ServerName" should specify the correct server name and port number.
  ServerName 192.168.0.12:80
- The setting "DirectoryIndex" should be modified so default.html is the default document.
  DirectoryIndex default.html
- The line containing "DocumentRoot" needs to be set to your Statistica Server web files path.
  DocumentRoot "D:/wwwroot"
- Serveral lines below "DocumentRoot" you will find this "<Directory "...."/>" option that needs to match the DocumentRoot value.
  <Directory "D:/wwwroot">

PHP Settings

Version

Statistica Server requires at least PHP version 4.1.2. The latest version of PHP can be obtained from **http://www.php.net**.

PHP.INI file

PHP is currently configured by the **php.ini** file, located in the system directory. This text file contains several parameter settings that PHP uses when it runs.

If Statistica Server is used to install PHP, then it installs a **php.ini** file with the appropriate settings that will work with Statistica Server. The following settings are of particular importance:

magic_quotes_gpc = Off

This setting should be off. It controls PHP's magic quotes for incoming **GET/POST/Cookie data**. Statistica Server*'s* user interface fills out and receives text boxes. It takes care of its own character escaping, and will not work if PHP's magic quotes are enabled for the **GET/POST** and cookie data.

file_uploads = On

If you intend to use the Statistica Server feature that uploads binary data from the client to the Statistica Server (Server side), then you must enable the **file_uploads** option.

upload_tmp_dir = xxx

If you intend to use the Statistica Server feature that uploads binary data from the client to the Statistica Server (Server side), then it is important that the upload temporary directory be accessible to PHP.

This option specifies where the temporary directory for uploading data is located. If no specific directory is specified, then the system temp directory is used.

- Ensure that PHP has the permissions to write to this directory. Under IIS, this means that the **IUSR_XXXXX** (where **XXXXX** is the machine name) has access to this directory.
- We recommend making this different from the system temp directory so you won't have to allow IIS to access the System temporary directory.
- If you use the Statistica Server installer, it automatically creates a subdirectory under the main PHP directory to use for the temporary upload files and sets this option appropriately in the **php.ini** file.

upload_max_filesize = XXXX

This option restricts the maximum size of a file that can be uploaded to the Web Server. By default, it is set to 50M to allow no more than 50 megabytes. You can change this setting to be higher or lower as required.

post_max_size = XXXX

This option sets the maximum amount of post data allowed. It also restricts the maximum size of a file that can be uploaded (by default, set to 60M). This setting should be larger than **upload_max_filesize**.

memory_limit = XXXX

This option determines the maximum amount of memory that a script is allowed to allocate. The default value is **150M**. This setting should be larger than **post_max_size** since this setting also affects file uploading. Set this value to **–1** if you do not want a memory limit.

max_execution_time = XXXX

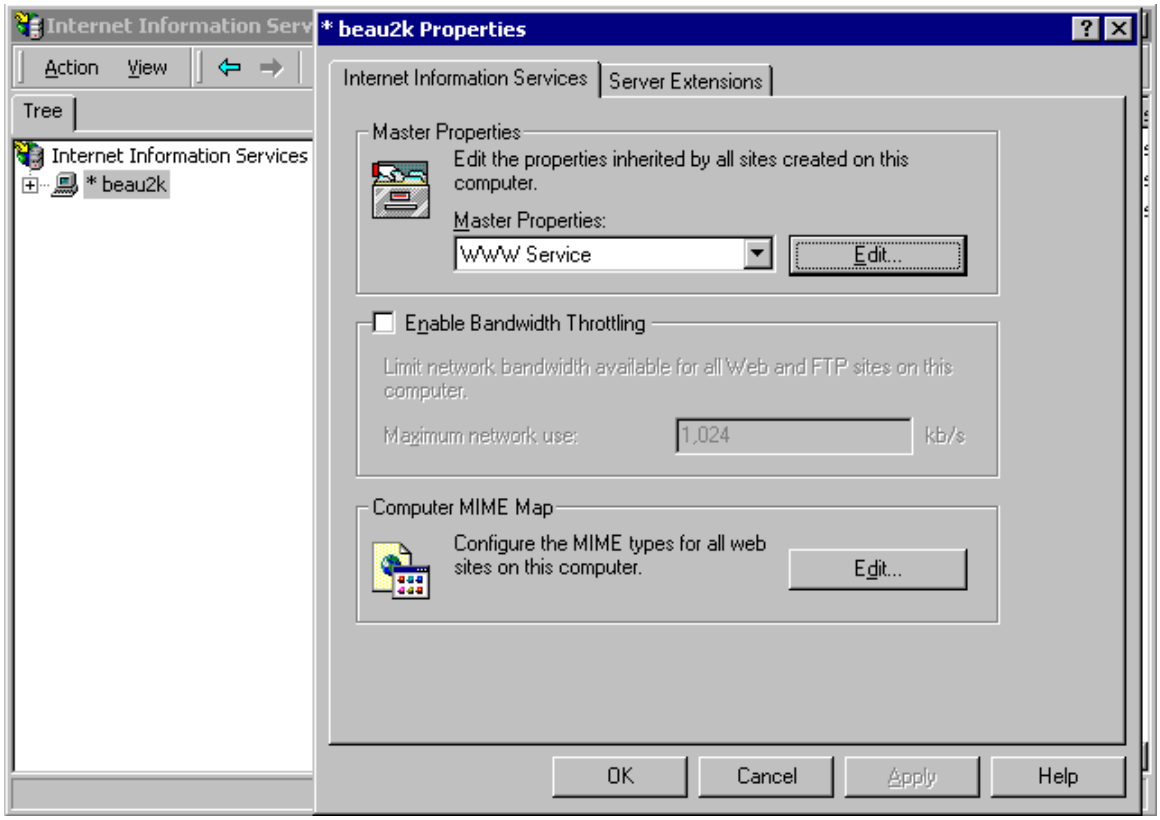
This setting determines the maximum number of seconds a PHP script can run. The default value is **1800**, which allows a script to run for 30 minutes. If a file upload takes longer than this, the upload will fail.

IIS Related Settings:

In IIS you will find a setting for the CGI script timeout. This setting is similar to the **max_execution_time** setting in the **php.ini** file. The IIS CGI script timeout should be set to at least as long as the **max_execution_time**. By default IIS sets the CGI script timeout to 300 seconds (5 minutes).

This setting is located under the **Master Properties** for the **WWW Service**.

1. Select the **Home Directory** tab.
2. Click the **Configuration** button.
3. Select the Process Options tab, where you will find the CGI script timeout setting. This same setting is configurable from the registry key: HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\W3SVC\Parameters\ScriptTimeout



CONFIG.PHP

The Web Server PHP scripts need to know where the Statistica Server (Server side) component is located. This lcoation is defined by the **config.php** file, located in the Statistica Server root directory on the Web Server. Under IIS and using the default installation settings, it will be located in **c:\inetpub\wwwroot**.

This file contains PHP variable definitions to define the host IP address of the Statistica Server (Server side), and the **TCP/IP** port that Statistica Server (Client side) is configured to accept. Note that the Statistica Server **TCPIPPort Metadata** setting must match this port number defined in the **config.php** file.

The server address can be specified either by direct IP address (as in the example below), or by machine name that the Web Server machine will recognize. If the Statistica Server (Server side) component is located on the same machine as the Web Server, then you can use the special name of **localhost**.

Note that this port number is asked for by the Statistica Server IClient side) installer, and that value is automatically added to the **config.php** file.

```
<?php
// Edit value in single quotes for a different soap host
$PostVars["SoapHost"] = '192.168.0.239';
// Edit value in single quotes for a different soap port
$PostVars["SoapPort"] = '8081';
?>
```

Statistica Server (Server side) Component

Statistica Server (Server Side) Service

The Statistica Server (Server side) Component runs as a Windows service named Statistica Server. This service is automatically registered by the installer, and is initially configured to start up automatically when the system starts. The service is implemented by the **webstat.exe** executable file found in the Statistica Server installation directory.

Statistica (Server Side) Instances

When the Statistica Server Service is running, it will start up sub-processes of Statistica to service requests to run analyses and scripting requests. These can be seen as **statcf.exe** in the task manager.

A request to run an analysis or user interface script is called a **job**.

There are two groupings of Statistica instances: the long-running and short-running job queues.

- The short-running queue is used for scripts that will take a short period of time, which includes tasks such as generating a user interface like the list of files the user sees when first logging on, or when a user is selecting parameters for an analysis.
- The long-running queue is used for jobs that might take a longer time to run; which includes most analyses.

Separating requests into the two queues ensures that user-interface operations, such as logging on or selecting analyses, will respond more quickly when a backlog of analytical jobs are running.

Note: A short-running job can use a long-running instance if the short-running queue is full.

Jobs are also classified as **interactive** or **batch**:

- An interactive job is one that the user will be waiting for the results to be returned immediately.
- A batch job is created when the user selects the **Run as Batch** check box when an analysis is started. Once the batch job is started, you can do other things until the batch job completes (the system can be configured to send an e-mail when the

batch job completes).
Note: Batch jobs will always run on the long-running job queue.

You can control the **minimum** and **maximum** number of Statistica instances in both the long running and short running queues.

- The minimum value specifies the number of Statistica instances that will always be kept running, even if there are no pending requests. This process makes the system more responsive because it does not have to load an instance of Statistica to service each request.
- The maximum value controls the maximum number of Statistica instances that can be started when many requests come in. When the maximum number of instances of Statistica is in use, new requests will be queued and serviced in the order they are received. The exception to this is a batch job, which will always be a lower priority than an interactive job. Once there are no pending requests, the number of Statistica instances will be lowered back to the minimum level after a period of time.

In most cases, we recommend that you set the minimum and maximum number to the same value. This setting ensures the fastest response, and also has the most predictable resource usage.

On the other hand, having a maximum number different than the minimum enables the system to dynamically adjust the number of Statistica instances when the load gets heavier.

A good rule of thumb is to set the long running minimum and maximum to twice the number of processors that are available, and to set the short running minimum and maximum to the number of processors.

Asynchronous Jobs

If an interactive job takes a long time, the browser and even the Web Server could time out.

To avoid timing out, jobs will become **asynchronous** after a configurable period of time. A job that goes asynchronous will get the Asynchronous Job Status page returned.

This page will automatically refresh and effectively poll for when the job completes. Additionally, the user has the choice to cancel the job or to cancel the job and resubmit it as a batch job.

Note: Polling for the job is very important. If the results of the job are not requested periodically, then it means that the user has browsed off the Asynchronous Job Status page, and the job will be deleted. This polling interval can be configured.

Batch Jobs

In addition to running an analysis and waiting for the results immediately, the Statistica Server system also supports submitting the jobs as a batch job, enabling the user to do other things (even log off) while the job runs.

To look at batch job results, the user displays the Batch Job List status page. The status (pending, running, completed) of all the batch jobs is displayed here, and the user will be able to examine results of completed jobs, cancel running or pending jobs, and delete results that are no longer needed.

E-mail Notification

Users can also choose to be notified by e-mail when their batch job completes. This e-mail message will include an HTML link that can be clicked to review the results of the batch job.

To enable this feature, you must configure a few Statistica Server metadata settings.

- smtphost

  This metadata value should be set to the URL that accepts mail messages (such as **mail.mycompany.com**).

- smtpsender

  This metadata value defines

  - who the sender of the e-mail message will be
  - the e-mail address used if any user replies to the notification message

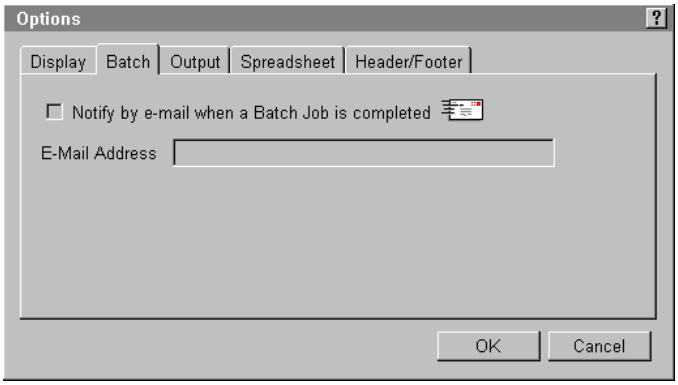
- phphost

  This metadata value contains the URL of the Web site that services Statistica Server, such as **www.mycompany.com**. Statistica Server will use this URL when constructing the e-mail notification message.

- User E-mail Addresses

  In addition to the above, each user needs to specify the settings to enable their e-mail notification.

  1. Choose Tools - Options... from the Statistica Server menu to display the Options dialog box.
  2. On the Batch tab, select the Notify by e-mail when a Batch Job is completed check box.
  3. Enter the e-mail address.



Metadata

The configurable Statistica Server system parameters are kept in the **Windows Management Interface** (WMI) database, under the **root\CIMV2\Statistica Server** namespace.

The configurable parameters are contained in class named **metadata**, and referred to as "the metadata" throughout this document. These parameters can be changed either through a WMI tool (such as Microsoft's CIM Studio or **Statistica Server Administration** tool), or through the Statistica Server Web interface from the Tools - Admin Tools menu.

The following is a list of metadata values that can be adjusted by administrators. Unless indicated otherwise, changes to these values take affect dynamically, and do not require a restart of the Statistica Server (Server side). Other metadata settings that are used internally are not documented here. We recommend that you don't change any metadata values not on this list.

Controlling Statistica Instances

The following parameters control how instances of Statistica are maintained.

- MinLL/MaxLL/MinSL/MaxSL

  These are the minimum and maximum number of Statistica instances for the long-running and short-running queue. We recommend that you set the Min and Max to the same value for each job queue. A good rule of thumb is to set the long-running minimum and maximum to twice the number of processors that are available, and to set the short-running minimum and maximum to the number of processors.
  PoolMaintPeriodLL/PoolMaintPeriodSL

  The **Pool Maintenance Period** is the time interval, in minutes, for checking to see if the pool of Statistica instances should be raised or lowered.

  Long-running and short-running job queues have different settings. It will take up to this time period before any change you make to the Metadata values is reflected in the number of Statistica instances.

Controlling Jobs

- AsynchronousTimeoutLL/AsynchronousTimeoutSL

These values control the amount of time, in seconds, before an interactive job becomes **asynchronous** and returns an Asynchronous Job Status page to the user, at which time, periodically polling for completion of the interactive job will begin.

Keep this value below the Browser time out value, usually less than 60 seconds.

- Setting the value lower will lessen the load on the Web Server by freeing up instances of PHP that are waiting for responses more quickly.
- Setting the value lower also causes the user to be presented with the Asynchronous Job Status page and be polled for their interactive job results sooner.
- PageRefreshTime

This is the time period, in seconds, that the Asynchronous Job Status page automatically polls for completion of the interactive asynchronous job. If the results are not requested for three of these time intervals, then the system determines that the user has browsed off to another page, and the interactive job is automatically canceled.

- Setting this value lower will enable users to see the asynchronous jobs more quickly.
- Setting this value lower will also place more of a load on the system.

- RefreshInterval_JobList

  This is the refresh rate, in seconds, of **Job List** and **Administrator Batch Job Status** pages. These pages will be updated periodically if the user enables the **AutoRefresh** option (the checkbox near **Refresh** button at the bottom of the page).

- JCGCPeriod

  This is the time period, in seconds, that the job completion garbage collection thread runs. This thread is responsible for deleting completed jobs, as well as starting new jobs that may be in queue.

Log On and Session Management

- defaultdomainname

  When logging on to the system, users specify their domain names before their user names.

  Example: If the domain is **MYDOMAIN**, and the user name is **MYNAME**, then the user would have to log in as **MYDOMAIN\MYNAME**. This setting provides a default domain to use so the domain name does not have to be entered.

  The system checks first to see if there is a local user whose user name and password match before applying the default domain name.

  You can override the default domain name and specify a user on the local machine by specifying.\ before the user name, such as **\MYLOCALNAME**.

- Timeout

This is the time, in minutes, before inactive users are logged off.

- Whenever users are working with Statistica Server, the Statistica Server Web pages periodically send requests to let the system know that this user is still active.
- If the user browses to another Web page, or closes the browser without logging off, then these messages stop.
- The hanging session will be logged off after this amount of time.
- Users who are no longer using Statistica Server but have not logged off will continue to take up licenses until this timeout period expires.

- Period

  This is the time period, in minutes, between checks to see if any inactive users need to be logged off.

E-mail Notifications

- phphost

  This setting contains the Web address (URL) of the Web Server servicing Statistica Server, such as **www.mycompany.com**. It is used by Statistica Server when creating the link inside the batch job notification e-mail.

- smtphost

  This setting contains the machine name or IP address of an SMTP server on the local network that can receive e-mail requests, such as **mail.mycompany.com**.

- smtpsender

  This setting is the name that will be used for the **From:** header in the e-mail that is sent out.

General System Parameters

- MaxRequestThreads

  This parameter defines the maximum number of threads that will be started to handle simultaneous incoming requests.

  - Any requests coming in after this level will queue at the socket level and timeout if a thread does not free up before this time.
  - These threads are used for all incoming requests, which include running jobs and getting graphs and other results from the repository.
  - A good rule of thumb is to set this to at least twice the maximum number of Statistica instances.

- STCFGarbageCollectionInterval

  This parameter is the amount of time, in minutes, between garbage collection cycles of the Statistica instances.

- During garbage collection, the instance of Statistica is shut down and another started.
- This value is not dynamic, so the Statistica Server Service must be restarted for it to take effect.

- RootDir

  This parameter defines where the **Repository Root** is located on the local file system.

  - This value is not dynamic, and will take affect the next time the Statistica Server service is started.
  - The value is set automatically to the directory path you specified when Statistica Server was installed.
  - Be very careful if changing this value, because if the Repository Root directory is incorrect, Statistica Server will not be able to find the scripts to run, including the script that enables you to change the Repository Root. If that happens, the only recourse is to use a tool outside of Statistica Server to change the setting (like Microsoft's CIM Studio) or to reinstall Statistica Server.

- TCPIPPort

  This parameter defines the TCP/IP port that the Web Server Component uses to communicate with Statistica Server.

  - This value must match the setting specified in the Web Server's **CONFIG.PGP** file.
  - This value is not dynamic, and will take affect the next time the Statistica Server service is started.

- RestrictSOAPClientIP

  This parameter restricts which machines the Statistica Server (Server side) will accept requests from.

  - By default, this parameter is empty, and allows any machine to be make requests of the Statistica Server (Server side).
  - The value can be a comma-delimited list of IP addresses and/or IP and mask values.

  For example:

192.168.3.129	Only allow SOAP client requests from e.g. web server at 192.168.3.129
192.168.3.0/24	Allow from 192.168.3.* (24 bits of significance)
192.168.3.0:255.255.255.0	Same as above
192.168.3.127,192.168.3.131	Allow from both IP addresses

User Parameters

Settings are kept for each individual user who accesses the system.

They contain specific information for that user, including:

- E-mail address
- List of recently used files
- Any customized menus

These settings are controlled at the global level by the Master configuration file, which defines default settings for users and determines whether the users can see or write to a specific setting.

Master Configuration File

The Master configuration file is **_SWSGlobalOptions.xml**, located in the **Settings** subdirectory of the **Repository** root directory. This file contains the XML that defines all the global settings used by the system.

The easiest way to edit these options is from within Statistica Server:

1. When logged on with Statistica Server administrator permissions, access the Tools – Administrator Tools menu.
2. Select Global Options. You will see the complete set of options, along with what the default is for all users:
   - The Min/Max value is allowed if the parameter value is numeric.
   - The Read Only flag controls whether the user can see the option.
   - The Hidden flag controls whether the user can see this option in his/her Settings page.
3. Click the ? button to display the **Help** page that describes these options.

User Configuration File

Individual users will each have their own configuration files located in the **Settings** subdirectory of the **Repository Root** directory.

- Each will be named with the same name as the user.
- If the user logs in through a domain account, then the domain name will be prepended within parenthesis before the user name.

Defining Statistica Server Users

Statistica Server uses integrated NT security. This means that the user accessing Statistica Server will be authenticated against the machine on which Statistica Server (Client side) is running. Therefore, this user must be either locally defined on that machine or be a member of the same domain the Statistica Server (Server side) belongs to or has a trust relationship with.

In addition to requiring a valid network user, Statistica Server (Client side) users must belong to one or more local groups that are created when Statistica Server (Server side) is installed. These groups are used to grant Statistica Server functionality to specific users. These local groups are created during installation, and are defined below.

SWS_USER

The user must belong to this group in order to log on to the Statistica Server system.

SWS_ADMIN

This group enables the user to access the Administrator features of Statistica Server. These features include the ability to access the Administrator Tools from the Web user interface, as well as the ability to see and manage all user directories.

SWS_BATCHABLE

The user must belong to this group in order to submit batch jobs.

SWS_DOWNLOAD

The user must belong to this group in order to download Statistica data files and graphs from the Web Server via the Get Object links.

SWS_UPLOADDATA

The user must belong to this group in order to upload data from his/her client machine to the Statistica Server (Server side).

SWS_UPLOADSCRIPT

The user must belong to this group in order to upload Statistica Visual Basic (SVB) script files.

Note: This is an extremely powerful option to assign, and should only be given to trusted users. It essentially enables the user to upload any SVB script and then execute the script from the server.

SWS_PORTAL

If a user is a member of this group they will be licensed as a **Knowledge Portal** user. Upon accessing the Statistica Server (Server side), these users will be directed to a simplified interface where they can view output pages published to the **Portal** directory in the **Repository Root**.

If a user is a member of **SWS_PORTAL** and **SWS_ADMIN**, the **SWS_ADMIN** permission has priority, and they will always have access to the entire Statistica Server interface and will not be treated as a **Knowledge Portal** user.

SWS_PORTALINTERACTIVE

If a user is a member of this group they will be licensed as an **Interactive Knowledge Portal** user.

If a user is a member of both **SWS_PORTALINTERACTIVE** and **SWS_ADMIN**, the **SWS_ADMIN** permission has priority, and they will always have access to the entire Statistica Server interface and will not be treated as a **Knowledge Portal** user.

This permission used to be called **SWS_OUTPUTPORTAL**. When installing a Statistica Server upgrade, this group will be renamed to **SWS_PORTALINTERACTIVE**.

Repository

Physical File System

The **Repository** is the main data store used in Statistica Server (Client side). It houses all of the following:

- User data
- Configuration files
- Results pages
- Analysis
- User interface script files
- Other kinds of information

The Repository sits on top of the **NTFS** file system. Because Statistica Server (Client side) uses an integrated security model, it uses NTFS to enforce access to files stored within the repository.

To restrict users from accessing specific files, change the NTFS permissions. The **Statistica Server Repository Manager** goes beyond the NTFS permissions and ensures that users cannot modify system files they are not supposed to, even if the NTFS permission allows it.

The start of the file structure is specified by the **Repository Root** directory. This directory is defined when the system is installed, and is stored in the Metadata. By default, the installer creates this in the **C:\WebSTATISTICAPub\RepositoryRoot**. Underneath the root directory, the file system is as follows:

```
RepositoryRoot\
        FILES\
                DATASETS\
                SHARED\
        JOBS\
        SETTINGS\
        SYSTEM\
                SCRIPTS\
        TEMPORARY\
        USERS\
```

Only system configuration files are kept at the root level of the Repository. All other files reside in the subdirectories. These directories are described below

FILES

- **FILES/DATASETS** is where all user data files are stored.

  By default, all users have read only access to these files. There can be other subdirectories below this level. You can restrict users from access to the files/directories by using the **NTFS** permissions.
- **FILES/SHARED** is where all users can share data among each other.

  By default, all users have read/write access to these files. You can restrict users from accessing, or allow read-only access to some and write-only access to others by use of the NTFS file permissions.

  The **SHARED** directory is special in that no scripts are ever allowed to run from it, and that makes it ideal for creating it as a network share for use with the concurrent network version of Statistica.

JOBS

The **JOBS** directory is where batch results are kept. Each user has a directory name derived from their domain and user name. Statistica Server ensures that non-administrator users can only get to their own results files.

- SETTINGS

  This directory contains the global settings, as well as specific settings for each user. The Statistica Server user has access only to his/her own settings.
- SYSTEM

  Files in the **SYSTEM** directory are special in that all users have read-only access (unless an administrator specifically denies access through **NTFS** permissions). Thus, this is where all the Statistica Visual Basic (SVB) scripting files are kept. These are the files that drive the user interface as well as the analyses that can be run. These are files with extensions of .**svb** and .**svx**.

  The user-interface files are kept at the root level of the **SYSTEM** directory; script files that drive the analyses are kept in the **SCRIPTS** subdirectory.

  New directories can be added as needed for logical organization of files; because this is a subdirectory of **SYSTEM**, these files will always be read-only to all users unless **NTFS** permissions are used to deny access to specific users.
- TEMPORARY

  The **TEMPORARY** directory is where all interactive results are stored and kept for display in the results browser. There are a series of subdirectories here based on domain and user names. The system ensures that only the correct user can get to his/her results.

The user's specific temporary directory contents are deleted when he/she logs off. Additionally, the temporary directory is completely cleaned out when the Statistica Server service starts.

- USERS

  The **USERS** directory contains a set of subdirectories based on domain and user name. This is where users put the data they can update and modify. Users are free to create subdirectories as needed under their user directory.

Logical File System

Statistica Server abstracts the physical file structure, and presents the user with a logical directory structure. This directory structure can be thought of as a mapping of logical paths to physical directories. A path in the logical directory is referred to as a Universal **Resource Identifier**, or **URI**.

If the path starts with a forward slash, which represents files in the **SYSTEM** directory. For example, the **URI /A.SVB** refers to the file **SYSTEM\A.SVB**. If the path does not start with a forward slash, then it refers to the user directory. Thus the file **X.STA** will map to **USERS\(Domain)UserName\X.STA**. Subdirectories are allowed within a URI, and simply map to physical directories underneath.

Several special directories are specified with a leading slash and a special name. These include:

URI (Logical path)	Physical path
/Datasets	\FILES\DATASETS
/Temporary	\TEMPORARY
/Jobs	\JOBS
/Shared	\FILES\SHARED

System XSL Files

Statistica Server uses **XML** internally for transferring data. This **XML** must be converted, or transformed, into **HTML** before it can be sent back to the user's browser. This transformation is controlled by an **XSL** transform (or **XSLT**). **XSL** is a rules-based transformation language that is specified in **XML**. There are four **XSL** files used with Statistica Server:

- Statistica Server.**xsl** (general transformation)
- **swsSpreadsheet.xsl** (s-specific transformations)
- **swsShared.xsl** (some common transformations)
- **swsMainMenu.xsl** (transforms dealing with the Statistica Server menus).

All of these files are stored in the base **Repository Root** directory.

Advanced users familiar with **XSL** can customize these files to change the appearance of certain Statistica Server (Client side) user interfaces.

Executable files

Statistica Server (Client side) consists of two sets of executable files. The first is for Statistica Server, and the second is for the special version of Statistica that Statistica Server uses.

Statistica Server

You are asked for the location of the Statistica Server executable files during installation. By default, this is

Program Files\Statistica\WebSTATISTICA\Application.

This is the location of the **webstat.exe** executable, which is the service that runs Statistica Server.

Statistica

The Statistica executable files are stored into a different directory than the Statistica Server executable files. By default, they are in

Program Files\Statistica\Statistica *x*.

These files are the analytical core of the Statistica system. The Statistica Server installation also includes the Statistica executable file, ***STATIST.EXE*.** You can launch this file to run Statistica interactively on the server.

Note: Statistica Server always installs the concurrently licensed version of Statistica, so running Statistica interactively will take up a concurrent license of the program.

Running the Statistica Concurrent Network

In addition to accessing Statistica functionality over the Web via Statistica Server, you can also enable interactive access to Statistica on the individual user desktops.

1. First set up a network file share on the server to the Statistica installation directory. By default, this is **C:\Program Files\Statistica\Statistica *x*.**
2. Restrict the permissions on this share to those users who will be using the Interactive Concurrent version.
3. Set this file share to allow read/write access
4. Set the Statistica installation directory to read-only permissions.
5. Set, the **SDATA** subdirectory, which contains the concurrent license file, to **read/write** permissions.

Once this share is created, the network clients can run the concurrent client install program, located in the **SETUPWRK** subdirectory of the Statistica installation directory. This will register needed components and set up the necessary configuration information to where the license file is stored.

Sharing Files between Statistica Server and the Concurrent Network version

The **RepositoryRoot\FILES\SHARED** directory is ideal for exchanging information between Statistica Server (Client side) and the desktop version of Statistica.

You can create another network file share on this directory, restricting the permissions to those users who need to exchange information with Statistica Server. Now interactive users of Statistica can save data sources and **Data Miner** project files into this network share, and it can be seen from the Statistica Server users. Also, Statistica Server users can save files in this directory using the **/Shared URI**, and Interactive users can see their changes.

Note: Only enable sharing on the **SHARED** directory, and no other directory within the **Repository Root** file structure.

- Access to SVB Script files needs to be carefully controlled to ensure that malicious users to not create detrimental script files that can be run within Statistica Server.
- The Statistica Server Script Manager ensures that Script files are never run from the **SHARED** directory. However, if access to other Repository Root directories is allowed, then this safeguard can be bypassed.

Integrated Login

If the web server is running IIS, you can optionally enable integrated login. When integrated login is configured, an attempt will be made to use the credentials of currently logged-in Windows user to access the Statistica Server (Server side) without the need to manually enter this information. If that user is not found to be a valid Statistica Server user, the usual login dialog will be shown.

In order to enable integrated login you will need to modify **config.php**, which is located in your Statistica Server web directory (**c:\inetpub\wwwroot\webstatistica** by default). Modify the line that defines the variable $IntegratedLogin: its value has to be changed from **no** to **yes**.

```
$IntegratedLogin = 'yes';   // edit value in single quotes (either 'yes' or 'no')
```

You can easily bypass integrated login by explicitly using the login page at:

http://[URL to Statistica Server (Server side)]/login.html.

If you are experiencing problems with integrated login, please make sure that the following settings of your IIS server are in effect:

- verify that your Statistica Server virtual folder has an **ISAPI** virtual subfolder;
- Statistica Server virtual folder should have both Anonymous and Integrated authentication methods enabled;
- **ISAPI** virtual subfolder should have only Integrated authentication enabled;

- **ISAPI** virtual subfolder's Application settings: Execute permissions should be set to **Scripts and Executables**, and the application mapping for this folder should map DLL extension to [Statistica Server web files]**/ISAPI/StaISAPI.dll**, (this file should have been placed here by the installer).

Logging and Testing

Statistica Server will log significant system events and serious errors to **Windows Event Log**. It also has tracing capabilities that could be employed for auditing, diagnostics and troubleshooting.

Logs of User Activity

All access to Statistica Server can be logged (you can control this by changing the **LogUserActivity** metadata setting). The log files contain all logon/logoff events, as well as the records of script execution.

These log files are kept in the Windows system directory, under the path **System32\Logfiles\WebStatistica**. Here you will see log files kept on a daily basis, named **swYYMMDD.log**, where **YY, MM**, and DD are the current two digit year, month, and day.

Windows Event Log and Trace File

You can use additional logging to obtain detailed information about low level functioning of Statistica Server, or even trace every function call. Such data can be valuable for troubleshooting problems with Statistica Server/WebSEWSS. In such situations Statistica technical support representative might ask you to enable logging and reproduce the behavior/use case that is causing the problem, and then send the log file to Statistica.

This functionality is controlled by the following metadata settings.

ReportingLevel. This value is an array of bit flags that specify how detailed the logging should be:

0 = None; +1 = Errors; +2 = Debug; +4 = Informational; +8 = Trace every function call; higher order bits limit tracing to certain Statistica Server modules; set reporting level to 15 in order to get all available information.

LogToEventLog. Specifies if the information filtered by reporting level will be output to Windows Event Log (event log named 'StatSoft').

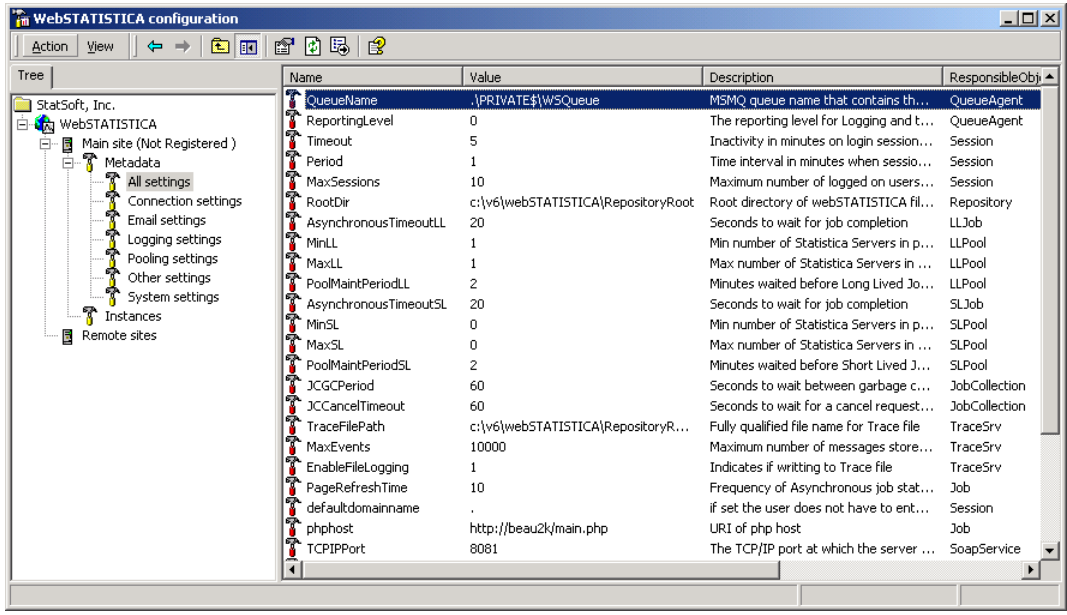
LogToFile. Specifies if the information filtered by reporting level will be output to the file (in XML format). Name of the file is taken from the metadata setting

TraceFilePath. It is also possible to feed the tracing output into Microsoft Message Queue. To do this, enable ***LogToMSMQ*** and specify the name of MSMQ queue by setting ***MSMQ_Name***. ***MSMQ_Capacity*** will limit the amount of messages that the queue can hold to the specified value.

Changes to ***ReportingLevel*** take effect immediately, but the rest of these metadata settings requires Statistica Server restart.

Tools

- Statistica Server MMC Snap-In



The Statistica Server MMC Snap-In is a general purpose tool for administrating your server. In the Start Menu you will find the entry Programs->WebStatistica ->Administration. This utility allows you to Start and Stop the Statistica Server service. All of the Metadata settings may be edited from this interface as well. There is also an Instances node where you can view detailed information pertaining to the Statistica instances and the job requests they have serviced.

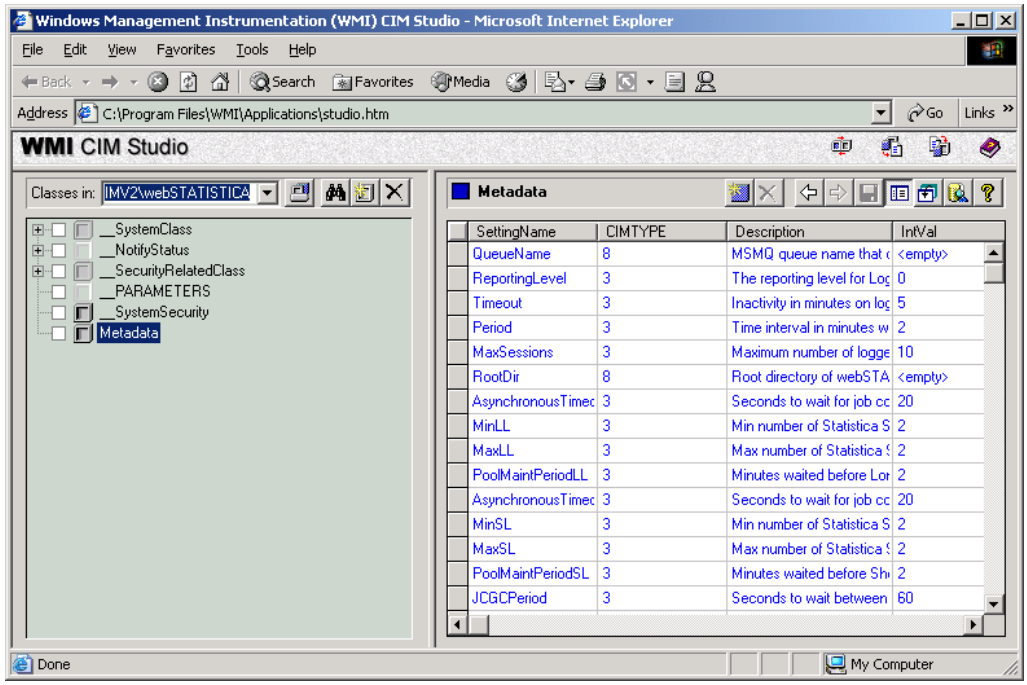
- Net Admin

  The NetAdmin tools are located on the server in the **SDATA** subdirectory of the Statistica installation directory. This tool is used to review who has logged on, both interactively and from Statistica Server. This tool can also be used to review who is using which licenses of the software, and to delete sessions as needed.

  If a Statistica Server or interactive user is using a session that is deleted, then that session will be logged off during the next polling interval.

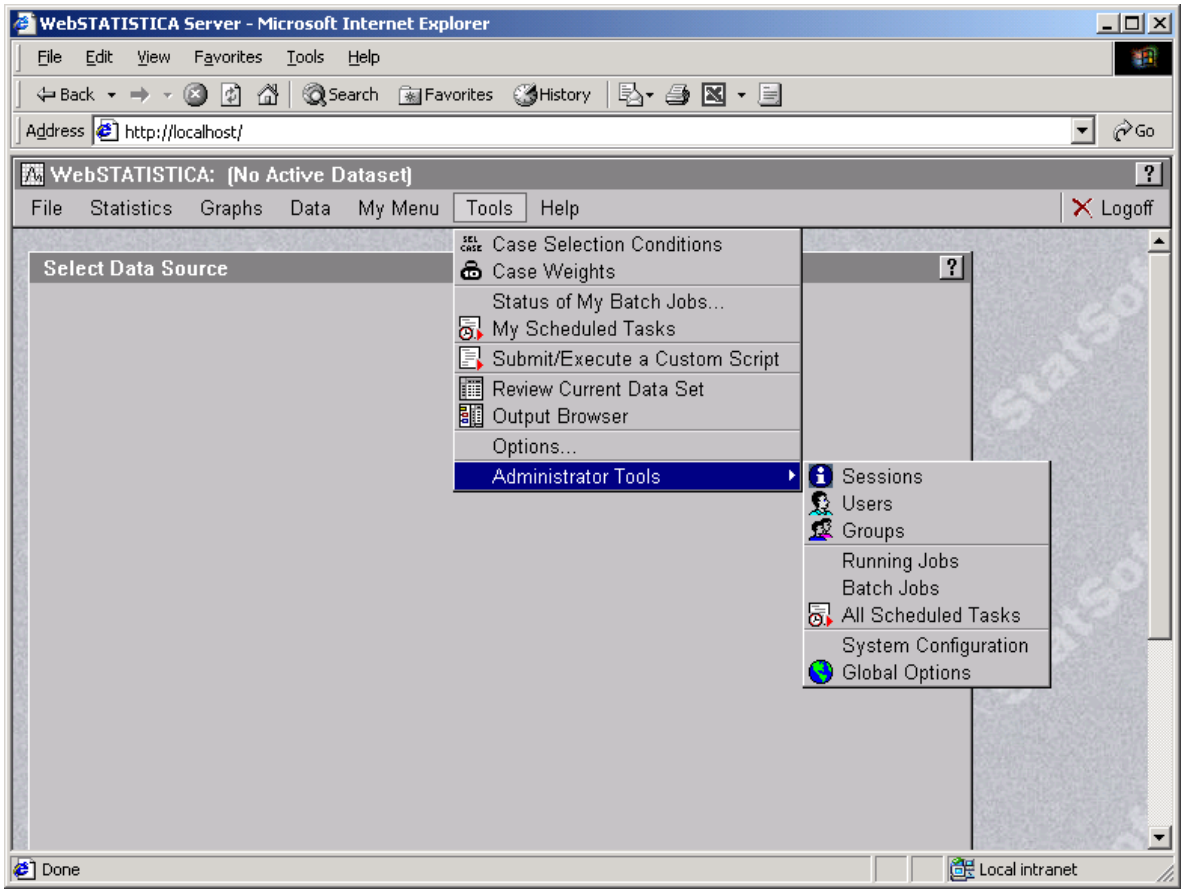
- WMI CIM Studio

  This Microsoft tool enables you to access the Metadata. This package is part of the **WMI SDK** available from Microsoft, and allows you to access all data within the **WMI**. The Statistica Server metadata is located in the root\CIMV2\WebStatistica namespace, under the class name **Metadata**.



Web Based Tools

Statistica Server has several Web-based tools for Administration. If the user is a Statistica Server administrator (for example, if they are members of the **SWS_ADMIN** group), then these tools are available from the Tools - Administrator Tools menu:



The options include Sessions, Users, Groups, Running Jobs, Batch Jobs, All Scheduled Tasks, System Configuration, and Global Options.

Sessions

This page lists all the currently logged on Statistica Server users, and includes what their current permission set is. Sessions can also be logged off from this page.

- Users

  This page lists all the Statistica Server users, defined as all users on the Statistica Server (Server side) machine who belong to the **SWS_USERS** group. This page allows an administrator to create and delete users and change a password for an existing user. Additionally, this page allows you to enable/disable the permissions for various users, and is identical to adding and removing users from the local **SWS_*** groups.

- Groups

  This page lists all of the Statistica Server user defined groups. These groups are local groups beginning with the prefix **SWSU_**. Here you can set group membership, rename groups and delete groups.

- Running Jobs
- This page lists all currently pending, running, and completed jobs for all users. The display is organized by logged on user, delete the running jobs, as well as log off the entire session.
- Batch Jobs

  This page gives a system wide view of batch jobs, sorted by username. Here you may view existing batch jobs and delete jobs.

- All Scheduled Tasks

  This page gives a system wide view of scheduled tasks, sorted by user name. This page gives you the ability to review and modify scheduling parameters as well as delete scheduled jobs.

- System Configuration

  This page is used to display/set the Metadata values. The options are categorized onto tabs, and the **WMI** field names and descriptions are displayed. See the section describing the Metadata values for more information

- Global Options

  This page lists all the global options that are applied as defaults to the users. You can enter these default values, and also control if the user can change these values, or if they are completely hidden from the user. Any hidden values will now show up on the user's Options page.

Accessing Network Resources

When the Statistica Server service is first registered by the installer it is configured to run in the context of Local System. For most installations this is appropriate, but if you have resources on the network that require integrated authentication, such as database connections, you can reconfigure the user that the Statistica Server service runs as.

Keep in mind that all scripts run on the server run in the context of the account the Statistica Server service is configured to run as. If a user has script access to the server they have the ability to write code that runs in the same context you have configured Statistica Server to run as.

- Setup

  The user that you run Statistica Server as must have local Administrator access. This user also must have **Act as part of the operating system rights**, which can be configured in the **Local Security Policy** shortcut under **Control Panel->Administrator Tools**. Once these conditions are met you can change the user assigned to the Statistica Server service from the **Log On** tab in the properties dialog for this service.

  You will also need to configure the user that the Statistica instances run as to match the user that the Statistica Server service has been changed to. The first step is to run **dcomcnfg.exe**. This program should be in your path and can be started from the **Run** dialog box.

  If you receive any **DCOM** Configuration Warning prompts on startup you may answer **No**. In the **Applications** tab you will want to locate the entry Statistica **ServerCF**. Once this item is selected click the **Properties** button and select the **Identity** tab. This is where you will select the option **This user** and enter the appropriate login information to match what was configure for the Statistica Server service.

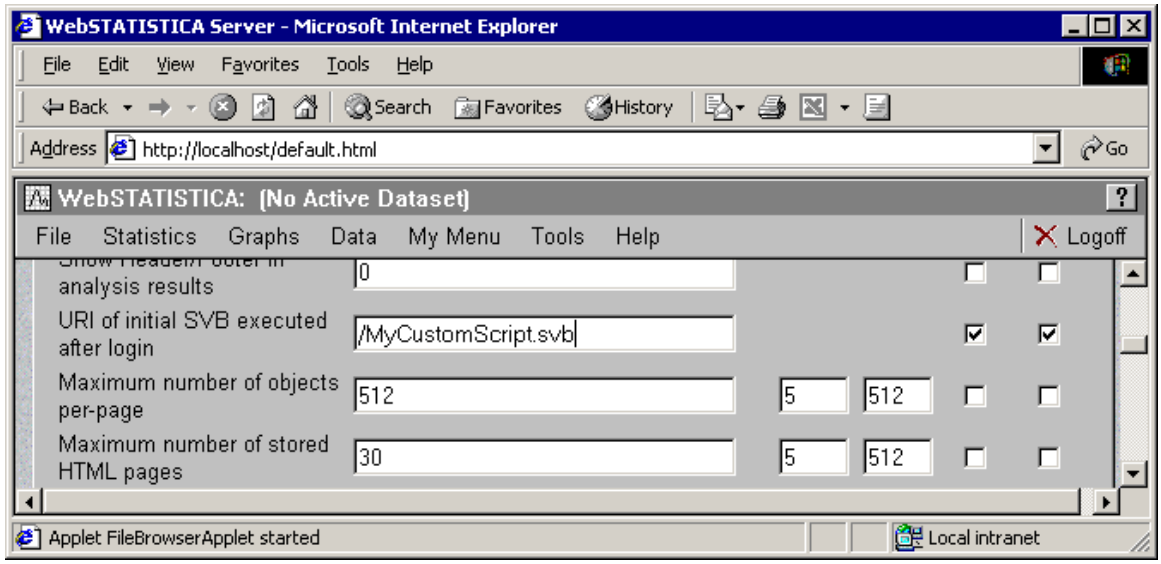
  Once these steps are completed you should restart the Statistica Server service.

Statistica Server Customization

- Initial Script

  Statistica Server can be configured to execute a different script than the **/OpenData.svb** script that is loaded by default. This could be modified to point to a custom script, allowing you to completely replace the **out of the box** interface.

  To change the initial script executed by Statistica Server access login to the system with a user that has **SWS_ADMIN** rights. Open the **Global Options** dialog box, which is located in the menu under **Tools -> Administrator Tools -> Global Options**. There you will find a setting listed as **URI of initial SVB executed after login**. This can be modified to point to the **URI** of a custom script that you have created.



- CSS Files

  Statistica Server makes use of Cascading Style Sheets (CSS) to control the appearance of the returned Web pages. End users can modify these files to control the font, type size, and other features of the user interface. The current CSS files are defined below:

swsButton.css	styles used for Buttons
swsList.css	styles used for List controls
swsMenu.css	styles used for Menus
swsSpreadsheet.css	styles used for Spreadsheets
swsTab.css	styles used for the Tab controls
SWS.css	general appearance parameters

Changing the Background Image

Changing the background is a common reason for modifying the CSS files. In your web root, open the file **SWS.css**. You will find a line similar to:

.SWSBackground {background-image : url(images/statsoftbg.jpg);background-attachment : fixed;}

The background-image path referenced in this example, **images/statsoftbg.jpg**, could be replaced with the url to your company logo, or removed completely.

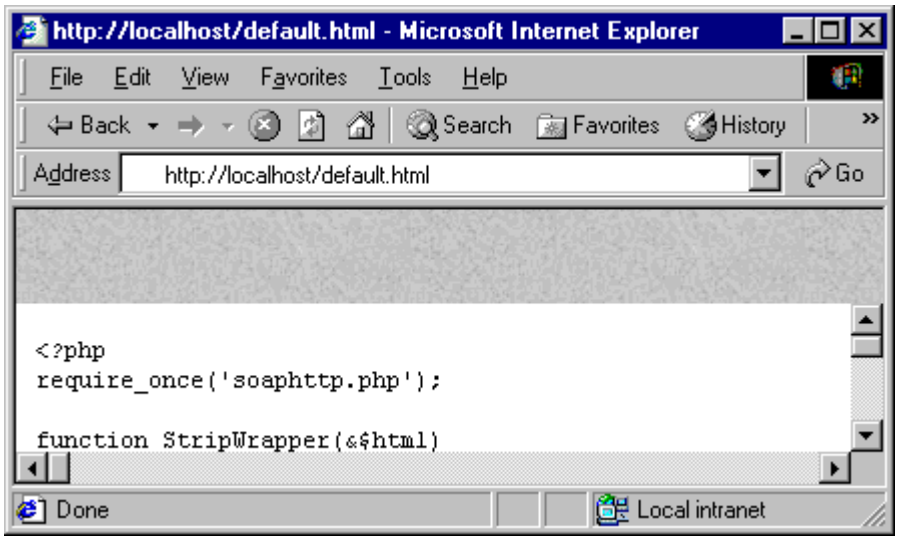
The definitive reference for CSS2 is available at http://www.w3.org/TR/REC-CSS2.

Troubleshooting

No Login Dialog When Browsing To Server

Receiving text: <?php require_once('soaphttp.php');

When accessing a Statistica Server (Server side) with your browser, if you receive a page similar to the picture below then your web server has not been properly configured to run PHP scripts. See the Web Server Component Configuration section for information on configuring PHP.



Receiving message "A connection to the Statistica Server (Server side) could not be established."

If your browser displays the message A connection to the Statistica Server (Server side) could not be established. check these items:

1. Verify that **SoapHost** and **SoapPort** settings in the **config.php** file are correctly configured. See the PHP Settings section for more information.
2. Verify that Statistica Server service is running.

Problems after Submitting Login Information

Only a gray bar is displayed

Statistica Server's default interface makes use of JavaScript to drive a large part of the user interface. Disabling **Active Scripting** in Internet Explorer will cause a blank page with a gray bar to be displayed after the login button is clicked. Check your browser settings and make sure that JavaScript is enabled.

Below is a list of security settings that we recommend are enabled in Internet Explorer when accessing a default Statistica Server installation. Not all of these settings might be necessary, depending on how you have configured your server.

- Run ActiveX controls and plug-ins.
- Script ActiveX controls marked safe for scripting.
- Allow cookies that are stored on your computer.

- Allow per-session cookies.
- Submit nonencrypted form data.
- Active Scripting.
- Scripting of Java Applets.

Receiving message The username or password was invalid when trying to access a newly created account.

A common problem is to create a user account and leave the option **User must change password at next login** checked. This will cause problems when accessing Statistica Server because the system will not prompt the user for a new password and instead will consider the login information invalid.

Also, if the user account used to access the Statistica Server (Server side) is only used for Statistica Server logins (and is not used to login to your network), we recommend that you check the option **Password never expires**. Otherwise, the user will not be able to access the Statistica Server (Server side) when the password does expire.

Asynchronous Job Status page continuously displays

Receiving the **Asynchronous Job Status** page for jobs the run past a configurable timeout period is a feature of Statistica Server that prevents browser timeouts. On a new installation of Statistica Server if you receive this page after logging in and it never goes away this indicates a problem with the ability to communicate with the Statistica instances that process job requests. To diagnose this problem, first temporarily disable any firewall and antivirus software on the server and restart the Statistica Server service as these products can cause conflicts. If this makes Statistica Server work, then please contact Statistica technical support who can work with you to configure the firewall and/or antivirus software to work with Statistica Server. If the problem still occurs, run the interactive version of Statistica on the server and create a new macro. Run the blank macro to verify the script runtime engine is working properly on the server.

Initial Open File dialog is shown, but instead of a list of files only a gray box is displayed

This indicates that the **Java Virtual Machine (JVM**) is not installed on the client computer. Starting with Windows XP Microsoft is no longer providing a **JVM** with the operating system. The Sun JVM can be downloaded free of charge from http://java.sun.com.

The upload function of the Spreadsheet Editor does not work/Data Miner displays "An error occurred executing the project"

This behavior can occur when the **PHP** temporary directory is set incorrectly. See the **PHP Settings** section for more information.

The Statistica Server Spreadsheet Editor will not open

This behavior may be due to a popup window killing utility.