

# Configuration parameter additions and changes

The following changes or additions to `firebird.conf` should be noted:

## AuditTraceConfigFile

V. Khorsun

This parameter points to the name and location of the file that the Firebird engine is to read to determine the list of events required for the next system audit trace. By default, the value of this parameter is empty, indicating that no system audit tracing is configured.

*Note:* The template file `fbtrace.conf`, found in Firebird's root directory, contains the full list of available events, with format, rules and syntax for composing an audit trace configuration file.

For more information, see the topic [System audit session](#) in section [Trace and audit services](#) in the chapter about the new administrative features.

## Parameters affecting file system cache usage

There are now two parameters for configuring how Firebird interacts with the file system cache.

### FileSystemCacheSize

N. Samofatov

New in Firebird 2.5, `FileSystemCacheSize` controls the maximum amount of RAM used by a Windows file system cache on 64-bit Windows XP or a Microsoft Server 2003 host with Service Pack 1 or higher.

At the v.2.5 initial release, it has no effect on POSIX host systems.

The setting for this parameter is an integer expressing the percentage of the total physical RAM that is available to the OS. To be valid, settings must be within the range 10 (per cent) to 95 (per cent), or explicitly set to 0 to enforce the host caching settings. Numbers outside that range will assume the default, which is 30 (per cent).

As with any `firebird.conf` setting, changes will not take effect until the server process is restarted.

### Windows security privileges

The OS user needs the `SeIncreaseQuotaPrivilege` in order to adjust the file system cache settings. This right is built in for users with Administrator privileges and for service accounts and it is also granted to the Firebird service account explicitly by the Windows installer.

Under other conditions, e.g., embedded, or where the Firebird server is run as an application, or in a custom service installation, the user may not have that privilege. The process startup does not fail as a result of this misconfiguration: it will write a warning to the [firebird.log](#) and startup will simply proceed with the host OS settings.

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## FileSystemCacheThreshold

V. Khorsun

This parameter was introduced in v.2.1 as `MaxFileSystemCache`. Because its name has been changed, its description is repeated here to alert upgraders.

`FileSystemCacheThreshold` sets a threshold determining whether Firebird will allow the page cache to be duplicated to the file system cache or not. If this parameter is set to any (integer) value greater than zero, its effect depends on the current default size of the page cache: if the default page cache (in pages) is less than the value of `MaxFileSystemCache` (in pages) then file system caching is enabled, otherwise it is disabled.

*Note:* This applies both when the page cache buffer size is set implicitly by the [DefaultDBCachePages](#) setting or explicitly as a database header attribute. It applies to all platforms.

Thus,

- To disable file system caching always, set `FileSystemCacheThreshold` to zero.
- To enable file system caching always, set `FileSystemCacheThreshold` an integer value that is sufficiently large to exceed the size of the database page cache. Remember that the effect of this value will be affected by subsequent changes to the page cache size.

*Important:*

- The default setting for `FileSystemCacheThreshold` is 65536 pages, i.e. file system caching is enabled.
- Observe that, if the configured cache size affecting a particular database is greater than the `FileSystemCacheThreshold` then the setting for `FileSystemCacheSize` (see above) will have no effect on that database.

## MaxFileSystemCache

`MaxFileSystemCache`, introduced in Firebird 2.1, is no longer a valid parameter.

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## ConnectionTimeout

D. Yemanov

On heavily loaded Windows systems, local connect (XNET) could fail due to the client timing out while waiting for the server to set the `xnet_response_event`. To help with this problem, the `ConnectionTimeout` parameter has been enhanced to affect XNET connections, in addition to TCP/IP.

*Note:* The caveat documented for this parameter, although still applicable to network transports, does not apply to XNET's protocol.

## Authentication

A. Peshkov

On Windows server platforms, since v.2.1, Authentication has been used for configuring the server authentication mode if you need it to be other than the default.

The mode settings for v.2.5 are the same, viz.

- **trusted** makes use of Windows [trusted authentication](#). Under the right conditions, this may be the most secure way to authenticate on Windows.
- **native** sets the traditional Firebird server authentication mode, requiring users to log in using a user name and password defined in the security database.
- **mixed** allows both.

## Changes in v.2.5

- Under v.2.5, although the modes are unchanged, configuring 'mixed' or 'trusted' mode no longer confers SYSDBA privileges on Windows domain administrators automatically by default. Please read the notes in the [Administrative Features](#) chapter regarding the new `RDB$ADMIN` role in [ODS 11.2](#) databases and automapping SYSDBA privileges to domain administrators.
- The default configuration has been changed from mixed to native. To enable trusted user authentication (whether `mixed` or `trusted`, it is now necessary to configure this parameter specifically.

Tracker reference [CORE-2376](#)

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## MaxUserTraceLogSize

V. Khorsun

Stores the maximum total size of the temporary files to be created by a user trace session using the new *Trace* functions in the Services API. The default limit is 10 MB. Use this parameter to raise or lower the maximum total size of the temporary files storing the output.

## OldSetClauseSemantics

D. Yemanov

Before Firebird 2.5, the **SET** clause of the **UPDATE** statement assigned columns in the user-defined order, with the **NEW** column values being immediately accessible to the subsequent assignments. This did not conform to the SQL standard, which requires the starting value of the column to persist during execution of the statement.

Now, only the **OLD** column values are accessible to any assignment in the SET clause.

The `OldSetClauseSemantics` enables you to revert to the legacy behavior via the `OldSetClauseSemantics`, if required. Values are **1** for the legacy behaviour, **0** (the default) for the corrected behaviour.

*Warning:*

- Changing this parameter affects all databases on your server.
- This parameter is provided as a temporary solution to resolve backward compatibility issues. It will be deprecated in future Firebird versions.

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## RemoteAuxPort for Classic and Superclassic

Dmitry Yemanov

Tracker entry: [CORE-2263](#)

**Classic** and **Superclassic** servers can now be configured to listen for events on a single, designated `RemoteAuxPort` port, as **SuperServer** has been able to do since v.1.5.

This long-awaited improvement now enables applications that connect to databases over the internet through a firewall or a secure tunnel to use events, regardless of the server model in use.

## Use host name for RemoteBindAddress

Alex Peshkov

Tracker entry: [CORE-2094](#)

It is now possible to use the host name of the host where the Firebird server is running to configure `RemoteBindAddress`, where previously, only an IP address was allowed.

*Important:* `RemoteBindAddress` can be used to “pin” user connections to a specific NIC card on the host server. Take care that the host name specified is not associated concurrently with more than one IP address, anywhere! In particular, check the `etc/hosts` file on all stations, including the host station itself.

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## RemoteFileOpenAbility

Nickolay Samofatov

Tracker entry: [CORE-2263](#)

Code from Red Soft was incorporated, to make this extreme option available to Windows and allow a database to be opened on a network share, in line with the long-time ability to allow access to a database on a NFS device on POSIX.

It is offered in the interests of maintaining feature consistency across platforms. There is no associated architectural change or any implication that its use in practice is considered safer now than in the past. However, it makes it possible to shadow databases to mapped locations and to connect to a database on an external file system for a specific, well-tested, safe purpose. An example given was a database kept under lock-and-key on a USB device that could be plugged in to a diskless workstation for performing an occasional, isolated security task.

**Warning:** READ THE NOTES IN `FIREBIRD.CONF` BEFORE YOU CONSIDER ACTIVATING THIS!

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