FBScanner 2.0 and Quick Start Guide

Contents

Overview

Warning! This document is for FBScanner 2.0 only. Future version can have significally more features. Visit http://ib-aid.com/products/firebird_interbase/monitoring/FBScanner for the latest version of this document.

FBScanner (Firebird Scanner) is a tool that can monitor and view all traffic between Firebird and InterBase servers and their client applications. It shows the real-time activity of connected clients:

Connections (IP/Name, duration, CPU load),
queries (query text, status, parameters)
and transactions (with parameters).

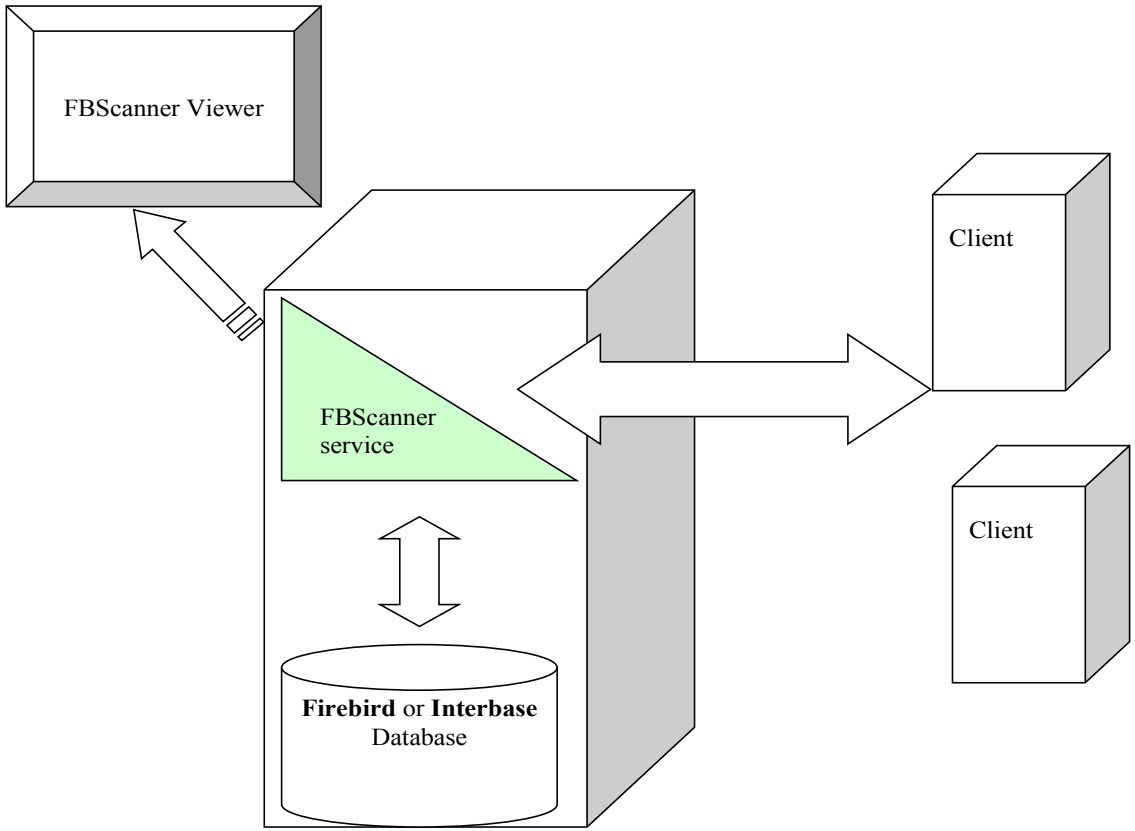
FBScanner can be used to profile database applications, monitor user activity, manage database connections (including client disconnection on both Classic and SuperServer architecture). It's also ideal for troubleshooting INET errors, as well as auditing existing applications and performance tuning.

FBScanner supports Firebird (V1.x and V.2x), InterBase (V4.0 to 2007). It is a useful tool for analyzing production Firebird and InterBase databases, especially if the application has been developed by third-party's and there is no source code available.

FBScanner is transparent as far as the database application is concerned and does not require any changes in application or database source code, logic or configuration.

FBScanner consists of two main parts: the service and the viewer. The FBScanner service works as a proxy of and examines all the traffic that takes place between the server instance and the client applications. The FBScanner service can work on the same computer as the database engine or on an alternative dedicated server. It analyzes all traffic between the application and the database and allows you to view and manage real-time database activity.

FBScanner V2.0 works on Windows only and requires the .NET 2.0 (or higher) Framework to be installed.



Issues that FBScanner can help to Resolve

- Real-time monitoring of connections. FBScanner shows all connections to the selected database server: the IP/DNS name of connected client, database and connection time.

- Real-time monitoring of SQL queries. For each connection FBScanner shows all the currently running SQL queries along with their transaction parameters.
- Detection of the oldest connection and the oldest active transaction to allow you to analyze that may have non-optimal transaction behaviour, or incrorrect transaction design or show users who might be using the application in a manner that may be affecting performance.
- Client disconnects. Check that disconnections are taking place correctly and you can also use this software to disconnect users in order to perform maintenance or database upgrades.
- FBScanner allows the routing of specific applications or particular users to allow you to zoom in on specific applications or users.
- You can log the SQL queries. For debugging or for security FBScanner can log all the selected traffic to a special database for further analysis.

How it Works

The FBScanner Service

The FBScanner service normally has to be installed on the same computer where the Firebird or InterBase server is running (as an option, you can install it on other computer and then redirect traffic to the actual Firebird or InterBase server). During installation the FBScanner configuration utility will ask you to choose: install FBScanner to the default port of InterBaseor Firebird (3050) and change the configuration of Firebird service to 3052 (this can be adjusted), or install FBScanner to listen on another TCP port.

Important Note: FBScanner works only with TCP connections, so clients using either local (XNET) and NetBeui (WNET) connection strings will bypass FBScanner.

If you choose the first installation option, all of the applications requests will pass through FBScanner Service.

Clients request port 3050 -> (FBScanner Service routes traffic) -> 3052 -> Firebird

Performance Impact

FBScanner does not change anything in transferred traffic and works simply like a transparent proxy, so all applications will continue as normal. FBScanner consume approximately 25-50Mb of momeory (monitoring 100-200 active clients) and will decrease database performance by 5 to 10% when in use.

During testing we have checked FBScanner at work in several real-world environments and applications where the database has 30-200 active connections and noticed that the performance degradation wa minimal In most cases users were unaware of the monitoring.

Segmentation of Traffic

The use of FBScanner on a non-standard port allows it to segment different traffic from different applications.

For example, there are applications A and B. A is old and stable application which does not require any tuning or monitoring, and B is a new application. It's easy to setup connection string for the new B application to use a non-standard port (e.g server/3052:Disk:\Path\database.gdb) and route all requests from the B application via FBScanner in order to monitor SQL queries and the application behaviour.

Application A at port 3050 -> Firebird
Application B at port 3052 -> FBScanner -> Firebird

Using this approach you can easily recognize and solve issues within a production environment, whether the issue comes from the new application, or even if it comes from particular segment of your local network.

Licensing

FBScanner is licensed on per server basis, i.e., each server requires a license to monitor it. FBScanner Viewer usage unrestricted and can be used by any number of users to work with the FBScanner service. FBScanner Server License price is 199EUR

Download

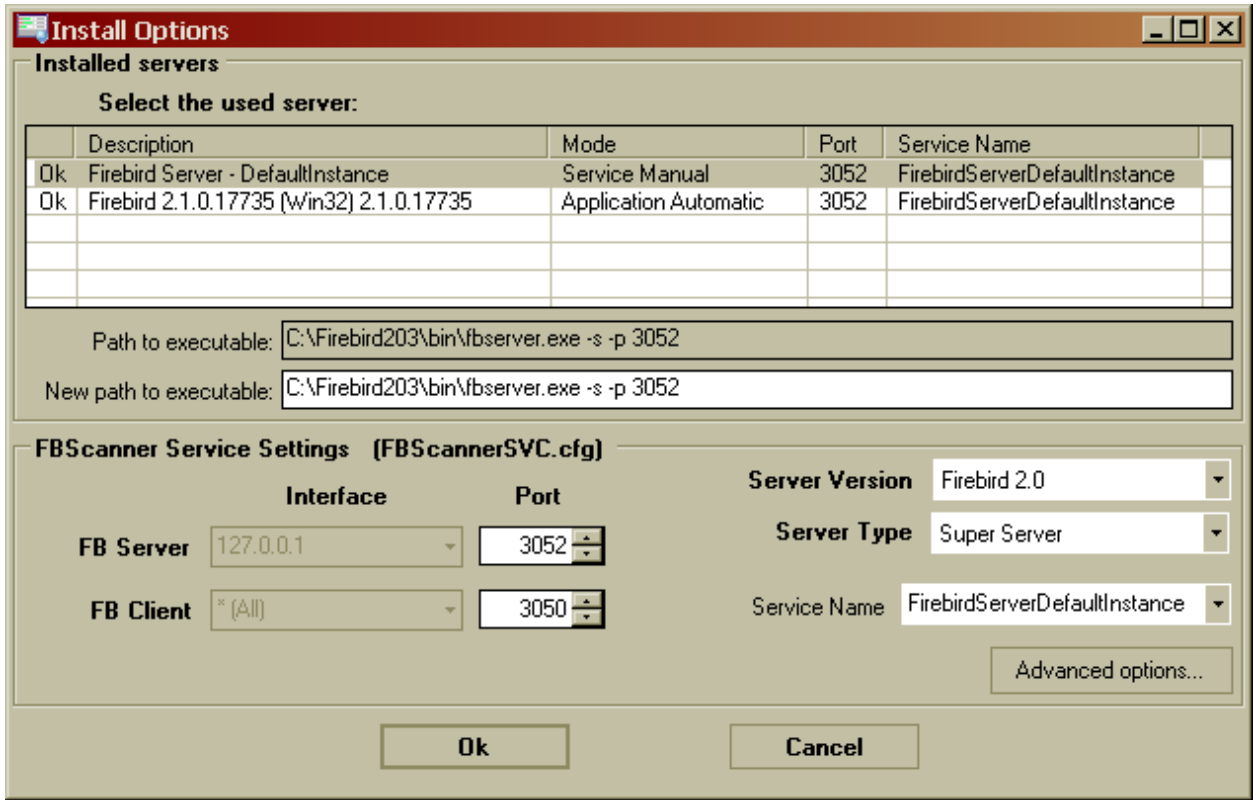
You can download a trial version of FBSCanner V2.0 for evaluation purposes.

FBScanner quick start guide

Now let's quickly introduce FBScanner and describe its main features.

Installation and configuration

After completion of setup wizard you need to run FBScanner Configuration:

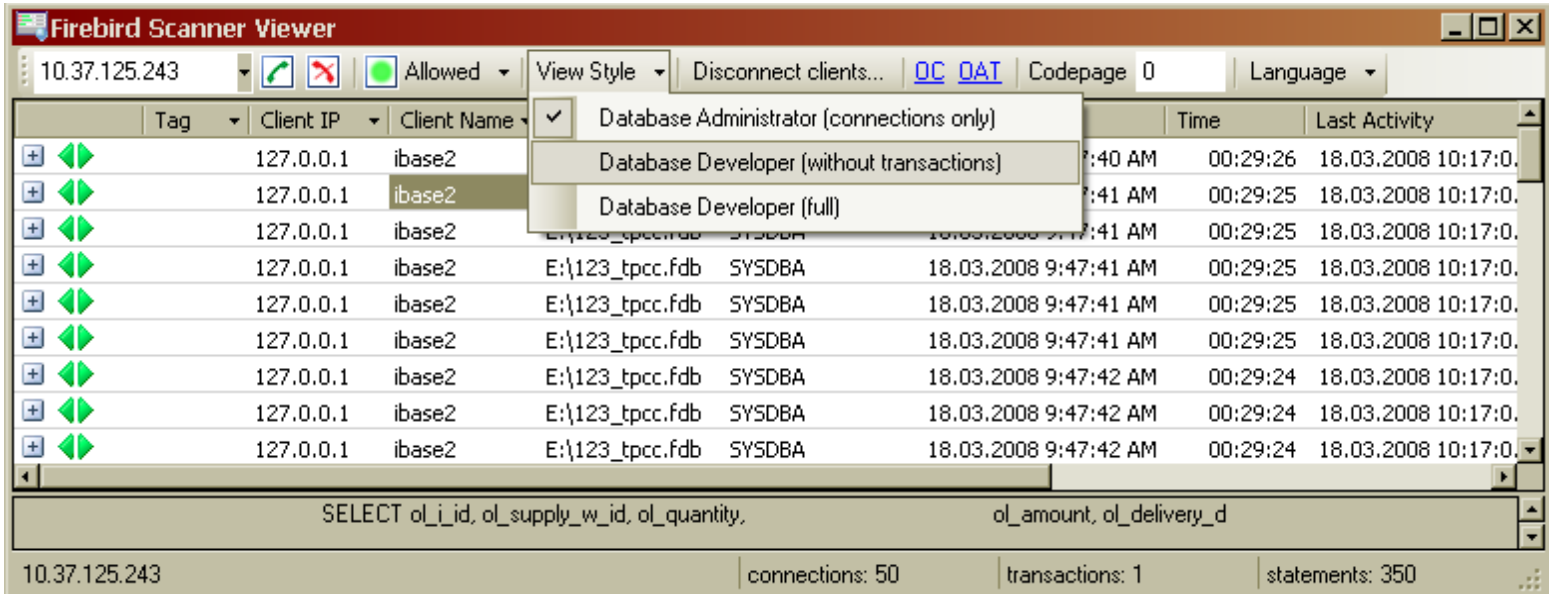


FBScanner configuration checks registry for any installed versions of Firebird or InterBase and offer you to install FBScanner Service as proxy for any of these instances. We recommend to accept settings, offered by default.
***Important**: If you wish to install FBScanner as a proxy for another computer you need to change the line in FBScannerSVC.cfg from*
IB_SERVER 127.0.0.1
to
IB_SERVER <new_IP_address_or_computer_name>
After setting necessary values Firebird (or InterBase) service will be restarted automatically and you can use FBScanner to monitor, investigate and administer your database traffic.

Using FBScanner Viewer

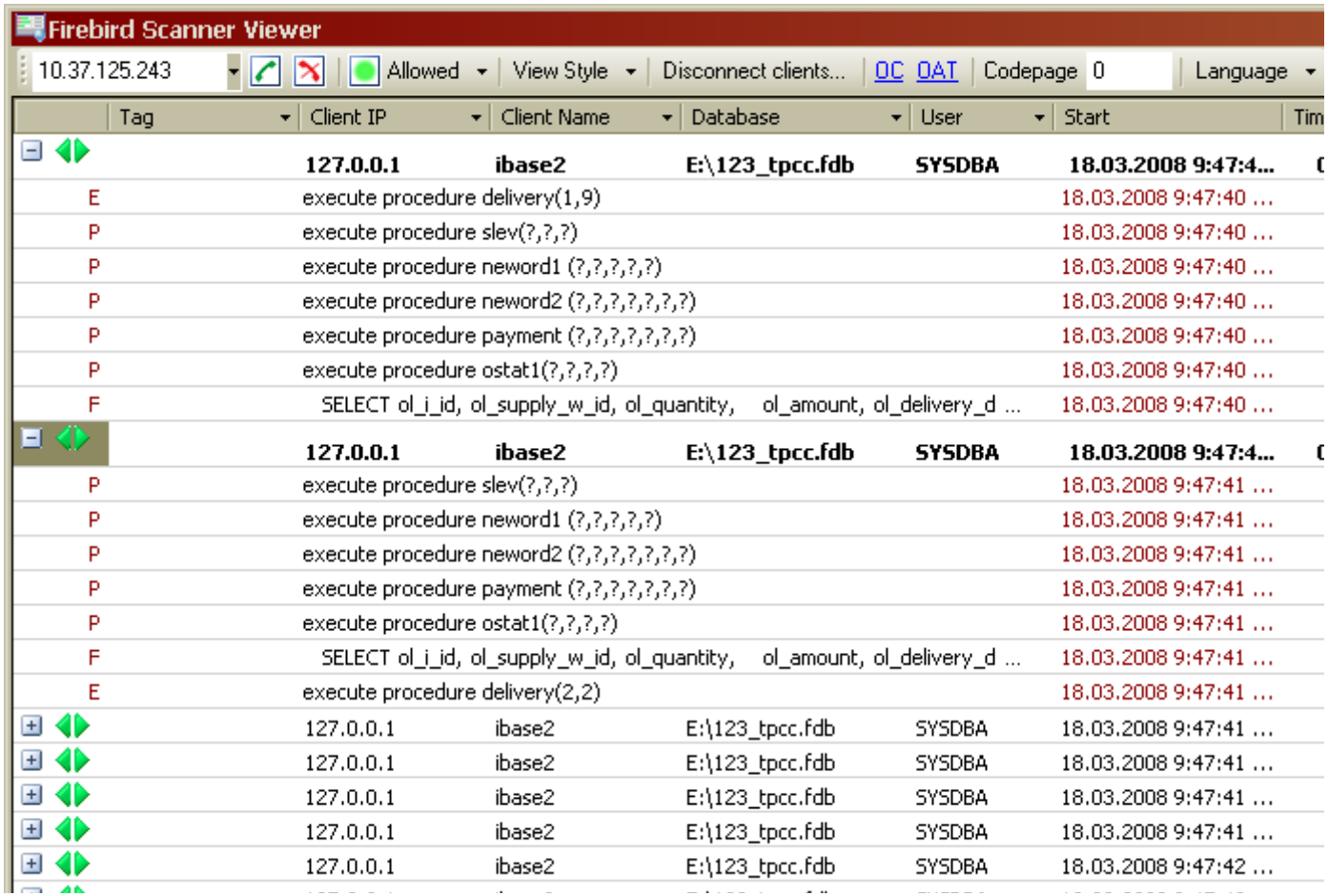
Run FBScanner Viewer and connect to computer with installer FBScanner Service (IP address or computer name):

After connecting you'll see what is happening at your server at this moment. You can choose a suitable view style:



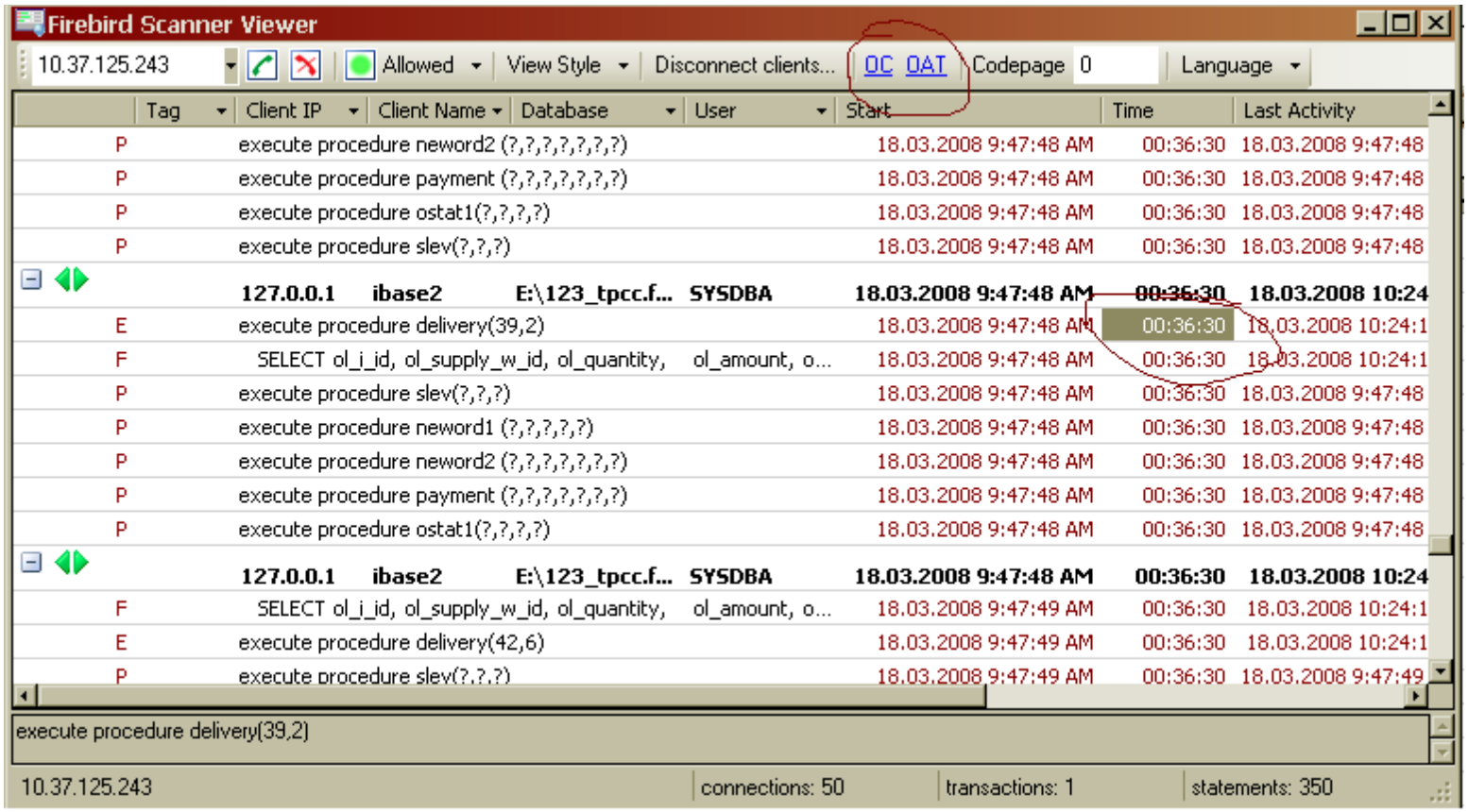
It can be “Database administrator” style where you can see only connections, or 2 styles for “Database Developer” – with or without transactions' information.

FBScanner Viewer in Developer style shows connection and queries:



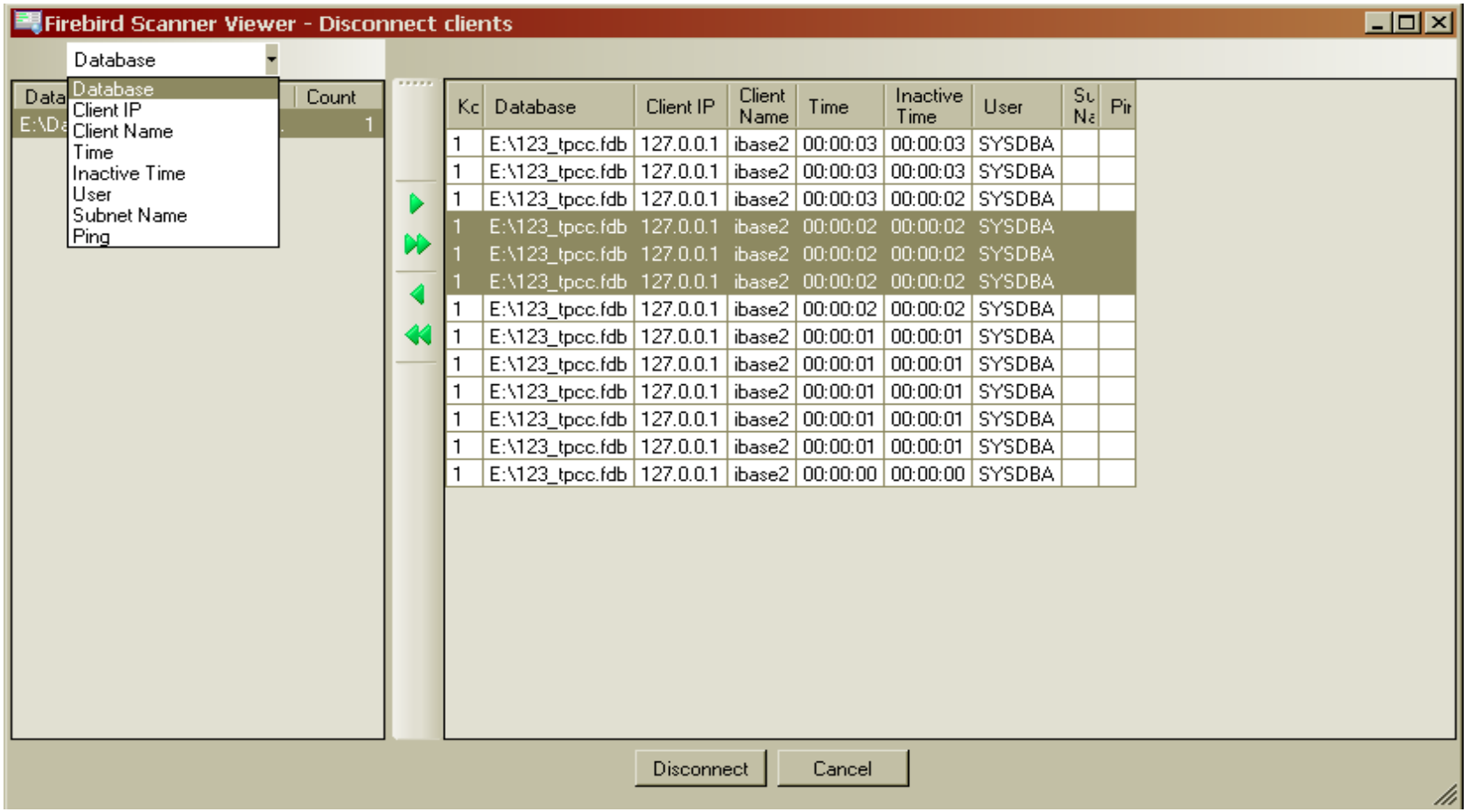
Oldest connection and Oldest Active Transaction

You can click OC or OAT links to turn on watching for oldest connection or oldest active transaction. It's very useful to find who is running application with long-running transaction or hold connection for days:



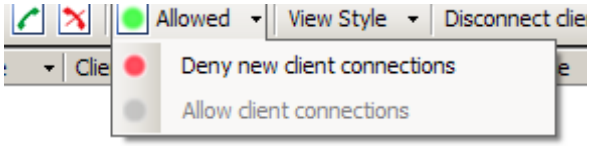
Disconnecting clients

Disconnecting clients, especially in Classic architecture, is very often administrative task. Usually database administrators use «kill» or Task Manager to force client's disconnect, and this is dangerous and erroneous approach which can easily cause a database corruption.
Using FBScanner Viewer «Disconnect clients» dialog you can gently and 100% correctly disconnect all or only specific clients. It's useful to perform some maintenance operations like metadata schema altering, or force people to close applications.



Deny New Connections

There is a special mode to deny new connections. It can be useful for perform maintenance, adminsitrative or debugging tasks.



Backup/restore and mass load operations

To perform operations which do not require monitoring or debugging, like backup and restore or mass load of records (in billing systems) we recommend to bypass FBScanner service.
If FBScanner is installed in default recommended configuration, i.e., on port 3050 and Firebird is on port 3052, connection strings should be like this

```
server_name/3052:Disk:\Path\database.fdb
```

example of connection string

```
connect "localhost/3052:C:\TEMP\database.fdb" user "SYSDBA" password "masterkey";
```

Example of using backup command

```
gbak.exe -b -g -v -user SYSDBA -pass masterkey  localhost/3052:C:\TEMP\database.fdb
C:\temp\backup.gbk
```

and, of course, using local connection string will bypass FBScanner:

```
gbak.exe -b -g -v -user SYSDBA -pass masterkey  C:\TEMP\database.fdb  C:\temp\backup.gbk
```