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SHORT GUIDE TO INSTALL FIRESIGNAL AND SDAS SERVER IN FEDORA LINUX SYSTEM

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ABSTRACT

In this guide we present all steps to install and configure FireSignal and SDAS server/client in the Fedora Linux system. FireSignal and SDAS are tools for sharing data base of scientific experiments and diagnostics in laboratory experiments. FireSignal is a modular system designed to control and operate physic experiments, namely fusion devices. The core is based on the XML, Java and CORBA technologies. From the beginning the system was designed to be as modular as possible and to avoid dependences on any particular technology. The several components are connected through CORBA, hardware is described in XML and all the extensions exist as plug-ins. The system is fully internationalized, the current available languages are Portuguese and English.

Summary

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1-SETTING UP THE DATABASE

In order to install the FireSignal database, you first need to install a PostgreSQL server on your machine. It can be made as:

In Fedora Linux login as root and run

```
yum install postgresql-server
/etc/init.d/postgresql start
```

As user root, after starting the server, change to user postgres.

```
su postgres
```

Create the user owner of this database and the database. For example, if the user is genericdbadmin and the database is genericdb

```
createuser -A -D genericdbadmin -P
createdb -O genericdbadmin genericdb
```

Although not required, it is advisable to allow connections to the database only from the localhost, since the database controller will be installed in the same machine. This is done by editing the file /var/lib/pgsql/data/pg_hba.conf. Change the last lines in the file to:

```
# "local" is for Unix domain socket connections only
local all all ident sameuser
# IPv4 local connections:
host all all 127.0.0.1 255.255.255.255 password
# IPv6 local connections:
host all all ::1/128 ident sameuser
```

Save the file and restart the PostgreSQL server. You should now be able to connect to the database:

```
psql -h localhost genericdb -U genericdbadmin -W
```

2- CREATING THE DATABASE

The database needs eight tables: events, hardware_description, hardware_template, institution, user_informations, users, names and comments. To create them, input the following commands in the PostgreSQL prompt:

```
CREATE TABLE events (id bigint, eventid text, tevent timestamp, tevent_np
int4, CONSTRAINT events_pk PRIMARY KEY (id, eventid));
CREATE TABLE hardware_description (nodeuniqueid text, hardwareuniqueid
text, hardwarexml bytea, CONSTRAINT hw_desc_pk PRIMARY KEY (nodeuniqueid,
hardwareuniqueid));
CREATE TABLE hardware_template (parameteruniqueid text, configuration_xml
bytea, tstart timestamp, tstart_np int4, tend timestamp, tend_np int4, eventid
bigint[], eventnameid text[], data bytea, CONSTRAINT hw_template_pk PRIMARY KEY
(parameteruniqueid,tstart,tstart_np));
CREATE TABLE institution(name text, address text, phone text, fax text,
webpage text, CONSTRAINT inst_pk PRIMARY KEY (name));
CREATE TABLE user_informations(username text, name text, email text,
phone1 text, phone2 text, fax text, country text, prof int2, institute_name
text, picture bytea, CONSTRAINT users_info_pk PRIMARY KEY (username));
CREATE TABLE users(username text, password int4, operator bool,
administrator bool, ipaddresses text, hostname text, groupids text, CONSTRAINT
users_pk PRIMARY KEY (username));
CREATE TABLE names(node_unique_id text, hw_unique_id text,
parameter_unique_id text, lastchange timestamp, name text, description text,
CONSTRAINT names_pk PRIMARY KEY (hw_unique_id, parameter_unique_id,
lastchange));
CREATE TABLE comments (username text, time timestamp, comment text,
CONSTRAINT comment_pk PRIMARY KEY (username, time));
```

You should also add an “administrator” to the system:

```
INSERT INTO users VALUES('admin', 0, 'f', 't', '', '', '');
```

This user, it doesn't have to have the login “admin”, will have no password. Login to FireSignal and update the password immediately. Even better, create another administrator with a different login and remove the “admin” user.

Configure your system to start the server at boot and the database should be ready to use.

3- FIRESIGNAL INSTALLATION

The latest FireSignal source code can be downloaded using

```
svn co svn://baco.cfn.ist.utl.pt/scad/trunk
```

go to directory [source_dir] where you the folder named trunk is located

```
cd [source_dir]/trunk/java/dist/
```

run the FireSignal installer

```
./firesignal-1.0-linux-installer.bin
```

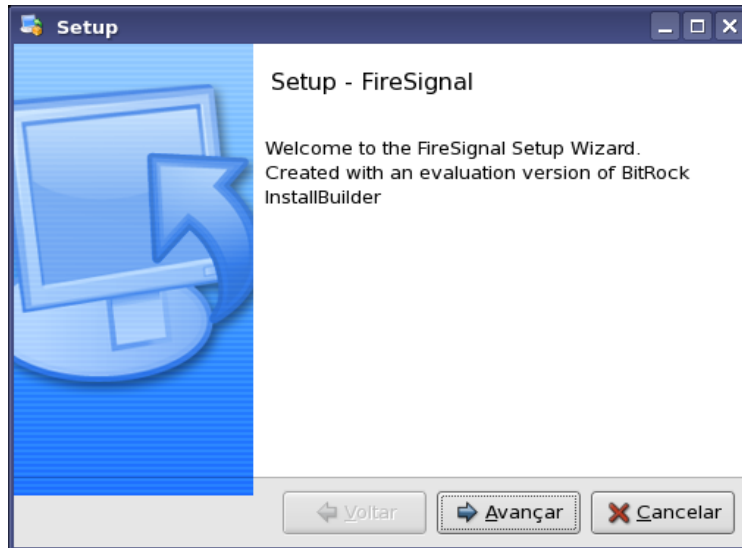


Figure 1: Setup window.

click in [Next]



Figure 2: License Agreement.

read the license and if you agree, mark [Yes] and click in [Next]

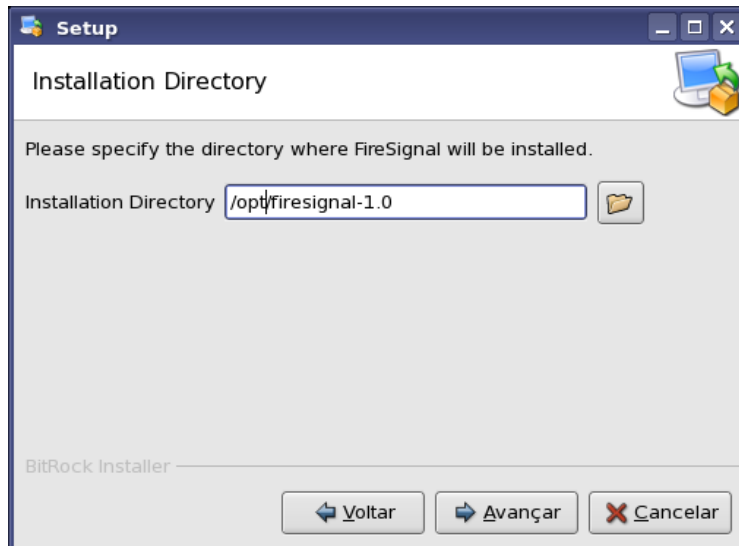


Figure 3: Installation directory.

select the installation directory and click [Next]



Figure 4: Java JRE Directory.

select the Sun java directory and click [Next]



Figure 5: Hostname.

select the server host name that will host FireSignal and click [Next]



Figure 6: Server port.

use the default port 1050 and click [Next]

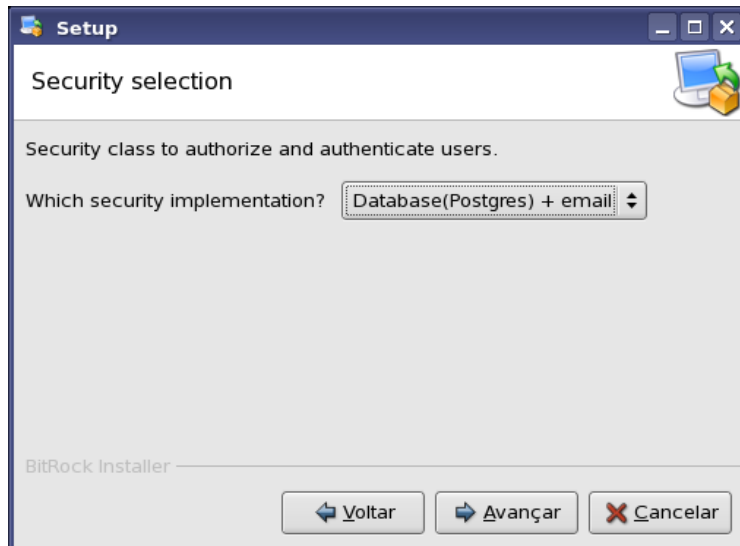


Figure 7: Security selection.

click [Next]



Figure 8: Pop server mail address, not necessary.

enter the pop server address (not necessary) and click [Next]



Figure 9: Database user name.

enter the database name that you created in step one and click [Next]

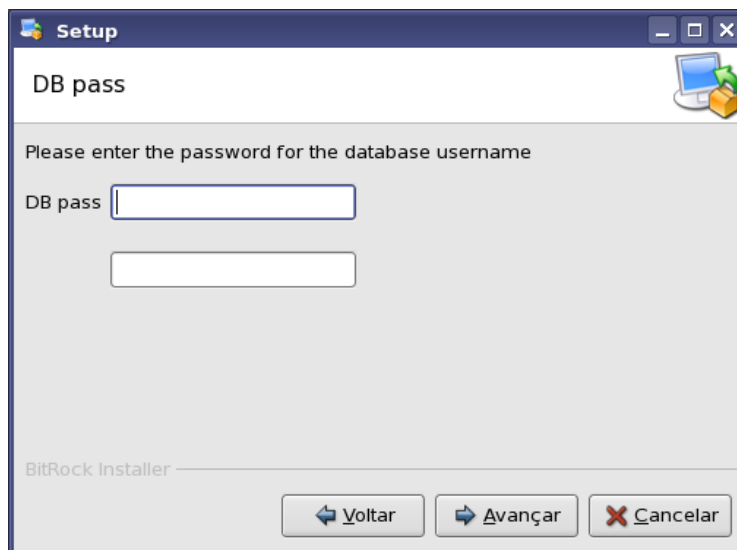


Figure 10: Database password.

enter the password for the database user and confirm the password, click [Next]



Figure 11: Database name.

enter the database name and click [Next]

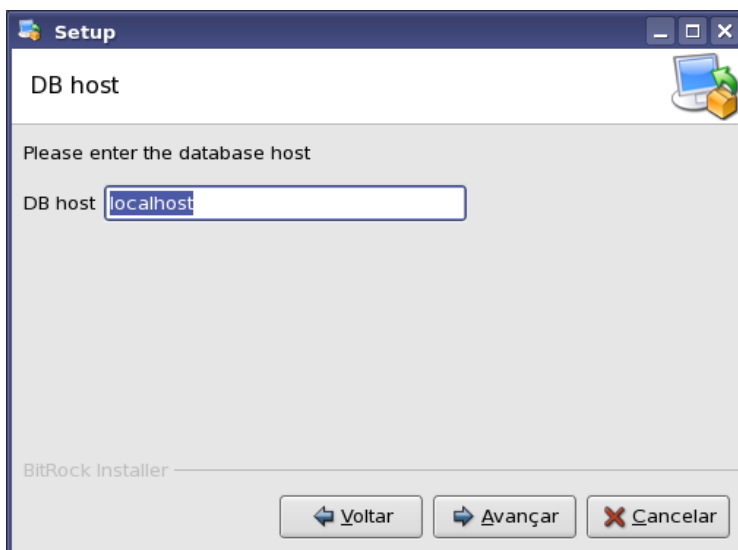


Figure 12: Database host.

enter the database host name and click [Next]

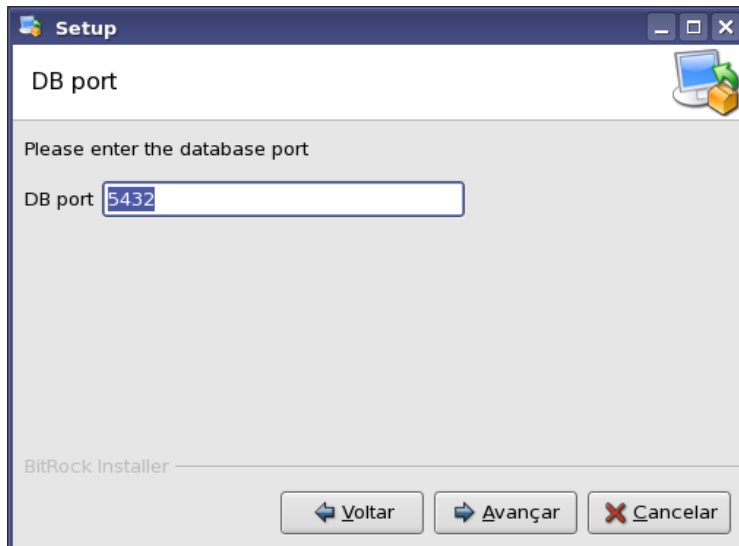


Figure 13: Database port.

select the database port, the default port is 5432 and click [Next]

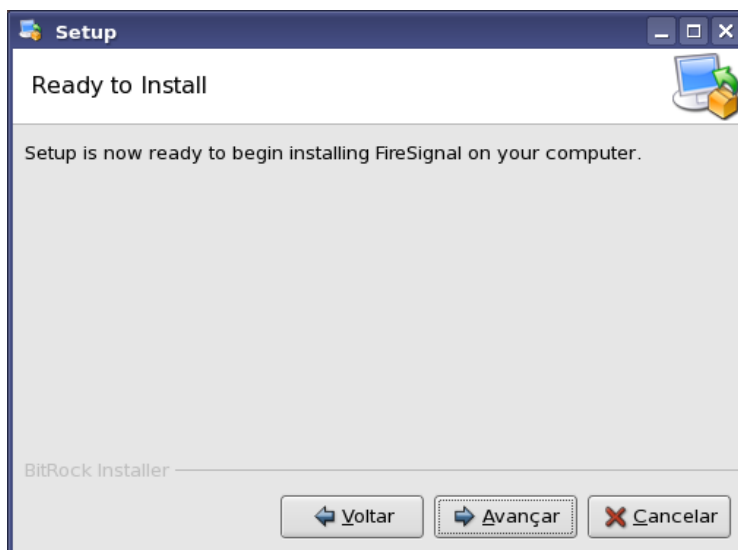


Figure 14: FireSignal will be installed.

click [Next] to install FireSignal and wait the automatic install process.

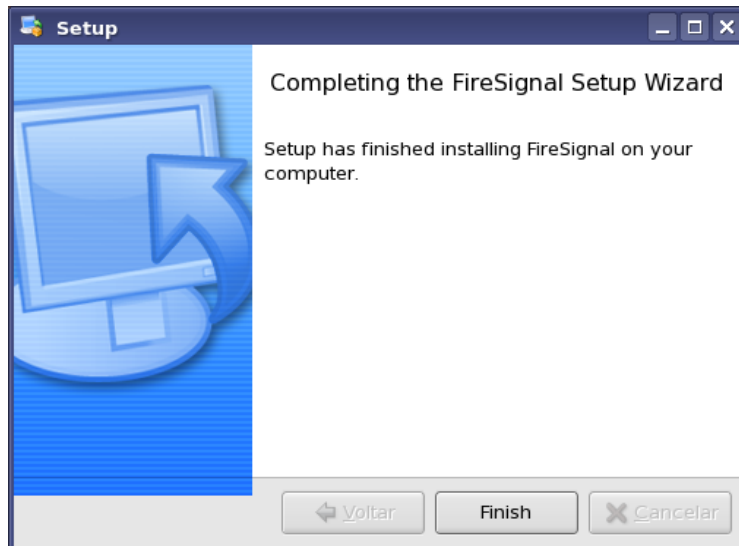


Figure 15: End of installation.

setup is complete.

As root, install firesignaljws-1.0-linux-installer.bin. Run

```
./firesignaljws-1.0-linux-installer.bin
```


4- STARTING FIRESIGNAL

Check if the web server is installed and running

```
/etc/init.d/httpd stat
```

if it is not installed, you will need to install it: as root type

```
yum install httpd
```

and start the web server.

```
/etc/init.d/httpd start
```

Go to FireSignal install dir [install_dir]/firesignal-1.0/dbcontroller/ and edit the file SQLConf.props (this is a small bug that should be solved in the next release)

change the line 19

```
firesignal.db.events.table.col.tevent.np=firesignal.db.events.table.col.tevent_n  
P  
to
```

```
firesignal.db.events.table.col.tevent.np=tevent_np
```

Go to install dir

```
cd [install_dir]/firesignal-1.0/init/
```

run

```
./fsignal start
```

Check the log files in [install_dir]/firesignal-1.0/server/logs/

```
check the file FSignal_Server_0.log
```

if you see something like (FINE: Central Server ready and waiting ...) FireSignal works, if not, check if the database and web server are running.

Go to [install_dir]/firesignal-1.0/jtestnod/ and change the file NodeScript at line

```
java -cp $CLASSPATH $SYS_PROPS org.cfn.scad.impl.node.test.TestNode  
$NODE_ARGS &
```

to

```
[local_instalation_Sun_java]/bin/java -cp $CLASSPATH $SYS_PROPS  
org.cfn.scad.impl.node.test.TestNode $NODE_ARGS &
```

Start the java test node; run

```
./StartTestNode
```

Check the mime.types file, go to /etc/ and edit the mime.types file as root, include the lines below in the end of file

```
type=application/x-java-jnlp-file desc="Java Web Start" exts="jnlp"  
application/x-java-jnlp-file      jnlp
```

Go to the Web browser and open the web location,

```
http://[hostname.server]/jws/FireSignalClient.jnlp
```

make login in FireSignal as admin and check if you can see (Java test node)

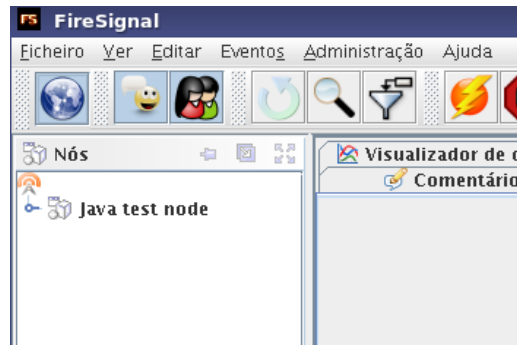


Figure 16: FireSignal, java test node.

Make a test shot: click in



and check if you get some data, like

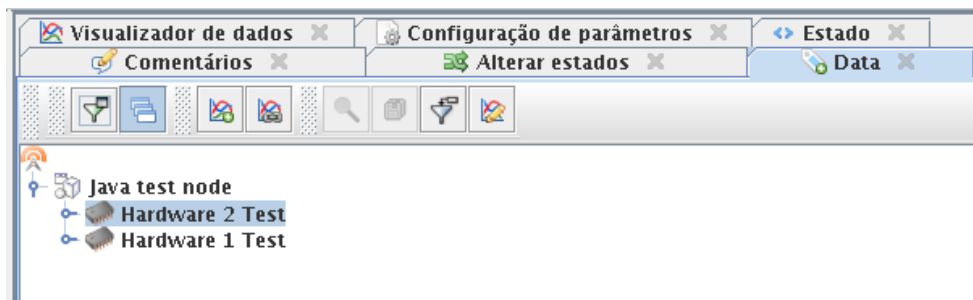


Figure 17: Data check.

If yes, the FireSignal and database works well.

5- SDAS INSTALLATION

Get SDAS binary files in <http://baco.cfn.ist.utl.pt/fsignal/dist/>

get the file `sdas_bin.tar.gz` and save in some directory

Extract the file `sdas_bin.tar.gz` typing

```
tar xzvf sdas_bin.tar.gz
```

copy the `sdas` directory to the local where the SDAS server will be installed

```
cp -r sdas [sdas_install_dir]/
```

Go to `[sdas_install_dir]/sdas/server/` and edit the file `SDASScript`. Change

```
SDAS_DIR=[sdas_install_dir]/sdas/server
DB_SERVER="server_host_name"
DB_NAME="genericdb"
DB_USER="genericdbadmin"
DB_PASS="teste123"
XML_EVENTS_LOC="[install_dir]/firesignal-1.0/server/xml/EventsTable.xml"
```

change the line

```
java -cp $CLASSPATH $SYS_PROPS $CFN_SDAS_PROPS
org.sdas.impl.cfn.CFNSDASServer $SDAS_ARGS &
```

to

```
[local_instalation_Sun_java]/bin/java -cp $CLASSPATH $SYS_PROPS
$CFN_SDAS_PROPS org.sdas.impl.cfn.CFNSDASServer $SDAS_ARGS &
```

As root, go to `/var/www/html/jws/` and check the files `DataViewer.jnlp` and `SDASGuiC.jnlp`, for `DataViewer.jnlp` file change the line

```
<jnlp spec="1.0+" codebase="http://baco.cfn.ist.utl.pt/jws"
href="DataViewer.jnlp">
```

to

```
<jnlp spec="1.0+" codebase="http://server_host_name/jws"
href="DataViewer.jnlp">
```

and in `SDASGuiC.jnlp` file change the line

```
<jnlp spec="1.0+" codebase="http://baco.cfn.ist.utl.pt/jws"
href="SDASGuiC.jnlp">
```

to

```
<jnlp spec="1.0+" codebase="http://server_host_name/jws"
href="SDASGuiC.jnlp">
```

Run `SDASScript`

```
./SDASScript
```

To check if SDAS works, go to the Web browser and open the web location

`http://[hostname.server]/jws/DataViewer.jnlp`

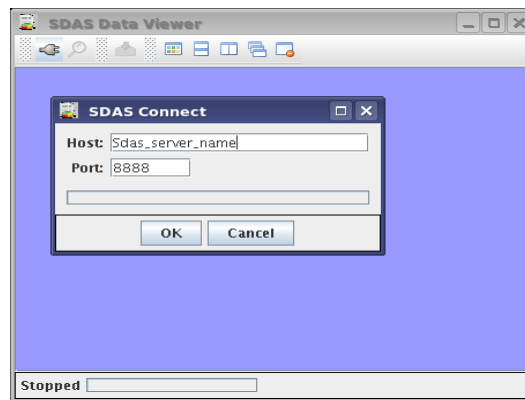


Figure 18: SDAS window.

if you can see the window above, SDAS server works well.

More information can be obtained in <http://baco.cfn.ist.utl.pt/dokuwiki/doku.php> and with André Neto (andre.neto@cfn.ist.utl.pt)

REFERENCES

Welcome to the SDAS and FireSignal Wiki - <http://baco.cfn.ist.utl.pt/dokuwiki/doku.php> – access in Oct/2007.

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