FOR:

Headstrong

CONTENT:

iceFish Installation Guide

December 5, 2009

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Strong opinions. Strong results.

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Document History

Version	Release Date	Author	Description of Change
0.1	06-Aug-2009	Headstrong	First draft
0.2	14-Oct-2009	Headstrong	Added command line installation instructions.

Reference Documents

Document Name
None

TABLE OF CONTENTS

1 Introduction

iceFish provides a single gateway for financial institutions to connect to different entities – clearing houses, industry utilities and counterparties – across asset classes using diverse formats and communication protocols. Following diagram presents various components of iceFish.

1. UI Layer – This is a Rich Internet Application that runs on Flash player inside a web browser. This requires Flash Player 9 or above.
2. Services and Persistence Layer – This is the backend web component for our UI Layer and it runs within a Java Servlet container (web server).
3. iceFish Fusion Framework – Also called as iceFish Server. This is the backend server having all the required components for message flow and processing.
4. iceFish DB – Any JDBC compliant database shared by both iceFish Web application and iceFish server (Fusion Framework)

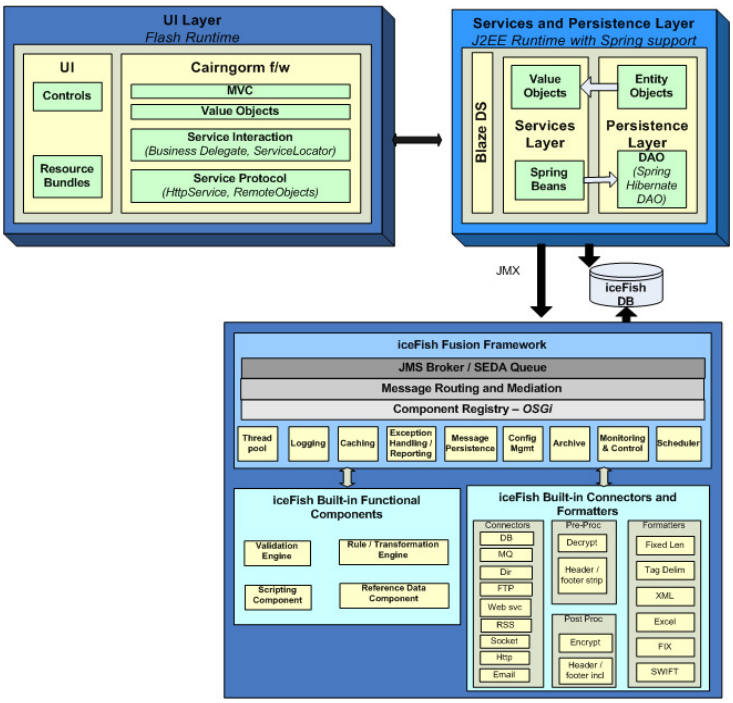

Figure 1: Block Diagram

IceFish.jar is the installation package / setup file for iceFish. This installer can be used to install both iceFish Server and iceFish UI applications. This guide will take you through all the steps for completing the installation of iceFish applications.

2 System Requirements

OS – Windows XP / Windows 2003 Server / Solaris 10 on SPARC

Tomcat – 5.5 or above.

Java – JDK 1.6

Database – Oracle 10g or above / Postgres8 or above

3 Installation through Wizard-based installer

3.1 Installation Overview

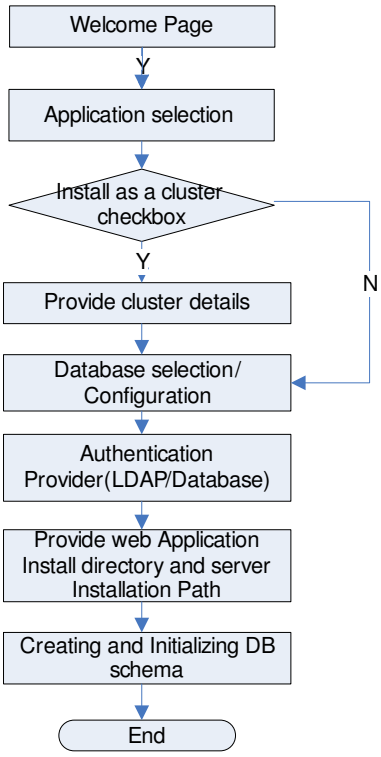

Figure 2 Installation Overview

3.2 Starting iceFish Installation

iceFish.jar is the installation package / setup file for iceFish. It allows user to pick the various components that user needs to install. Either double Click on iceFish.jar or type **java –jar iceFish.jar** in the command prompt to start iceFish installation. This opens up the welcome page which contains the iceFish Version Number, Organization Name and other details as shown below.

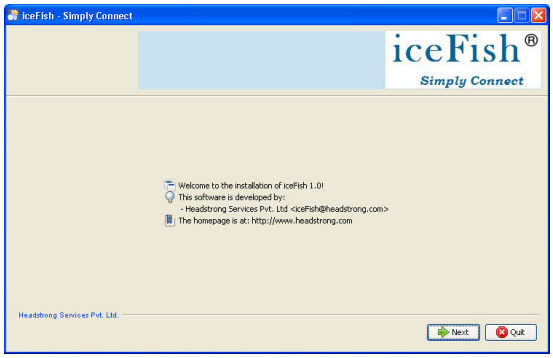

Figure 3:Welcome Page

3.3 Selecting the Application

This screen will provide the option to select which component user want to install - either iceFish Web Application i.e. UI or iceFish Server Application or both.

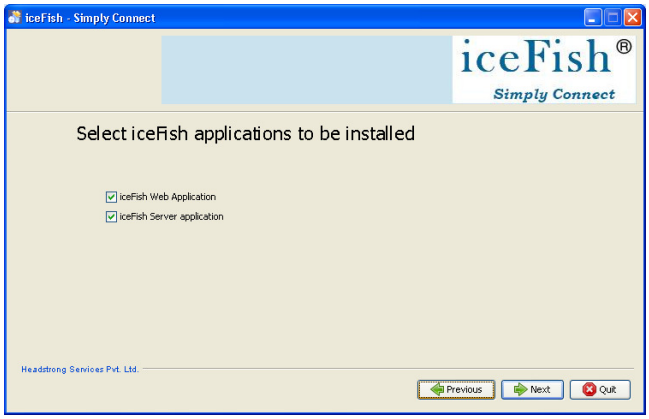

Figure 4: iceFish Application

Suppose user only wants to install iceFish Web Application, he can select iceFish Web Application checkbox and click on Next. Option to install database scripts will be available only when icefish server application checkbox will be selected. Option to install database scripts will not be available if only icefish Web Application will be selected.

After selecting required set of applications which needs to be installed, click on Next.

3.4 Specifying iceFish Application Home

Specify the complete path for the Application Home directory. Application Home directory is used to store the Log files, Process Cache (has all the deployed processes), Process runtime cache (has which processes are in running and stopped state) and also the application cache used by iceFish.

Ensure that forward slash "/" is used as the file (or directory) separator character.

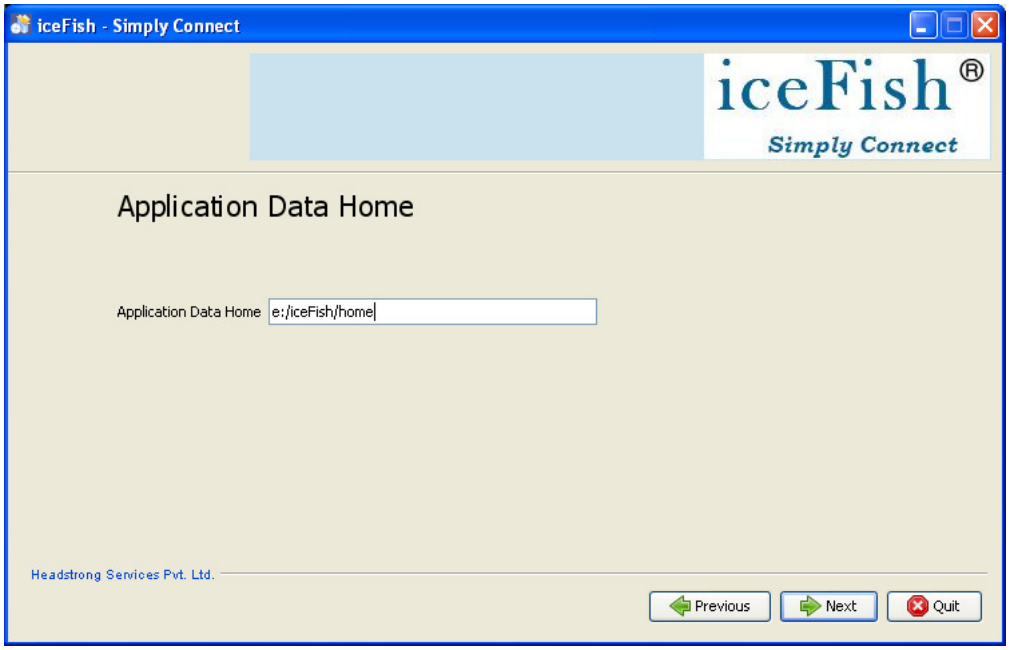

Figure 4 Specifying Application Home Directory

3.5 Specifying iceFish Cluster details

This screen will ask user, how he wants to install iceFish. iceFish as a cluster mode or as a non cluster mode.

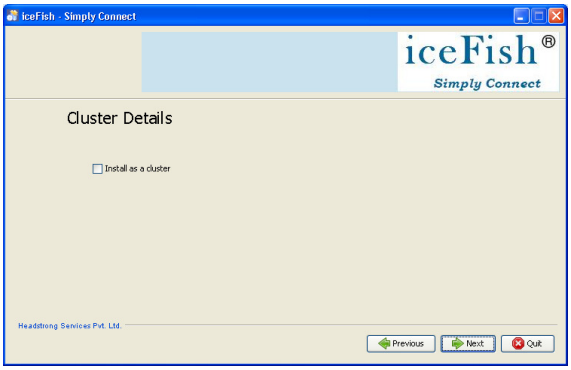

Figure 5: Cluster Details

If user selects the checkbox i.e. he wants to install as a cluster then user needs to provide the details of cluster as shown below.

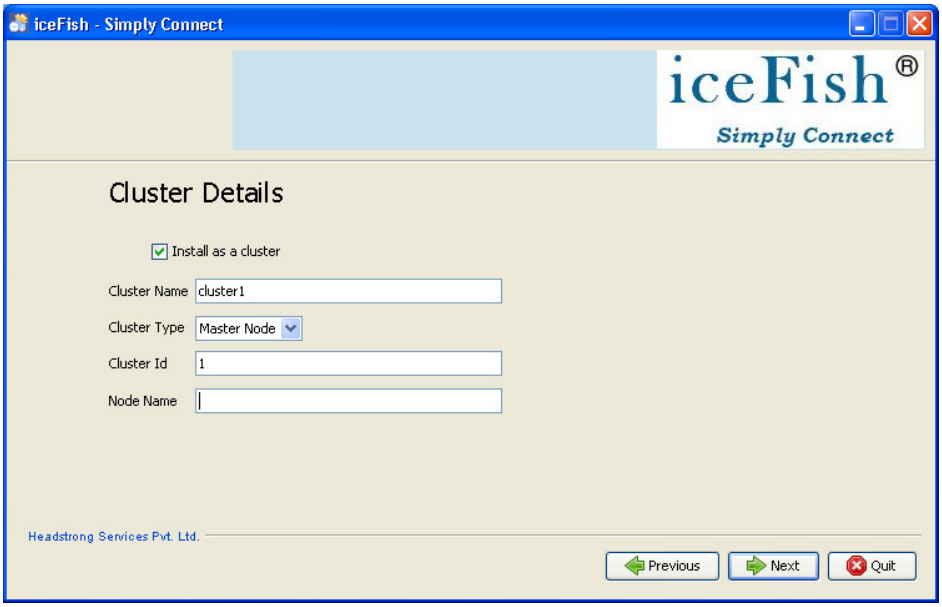

Figure 6: Cluster Details

User can configure as many iceFish servers in a cluster mode. One server will act as a master and others will be slave. Master and slave configuration is only used to give control when every node in the cluster starts. Once started, every node in the cluster is homogeneous. After providing all the details of cluster, click on Next.

1. Cluster Name – Name of the cluster. It can be anything. Cluster Name should be same for all nodes in the same cluster.

2. Cluster Type – It can be either Master Node or Cluster Node depending upon, how user wants to install the icefish. If user wants to install icefish as a master then user needs to select Master Node option else Cluster Node option if user wants to install icefish as a cluster mode.
3. Cluster Id – Id of the Cluster.
4. Node Name – Name of the Node. It can be anything

3.6 Selecting database provider

This screen has the information about the database. User has the option to select the database from the list of database Name.

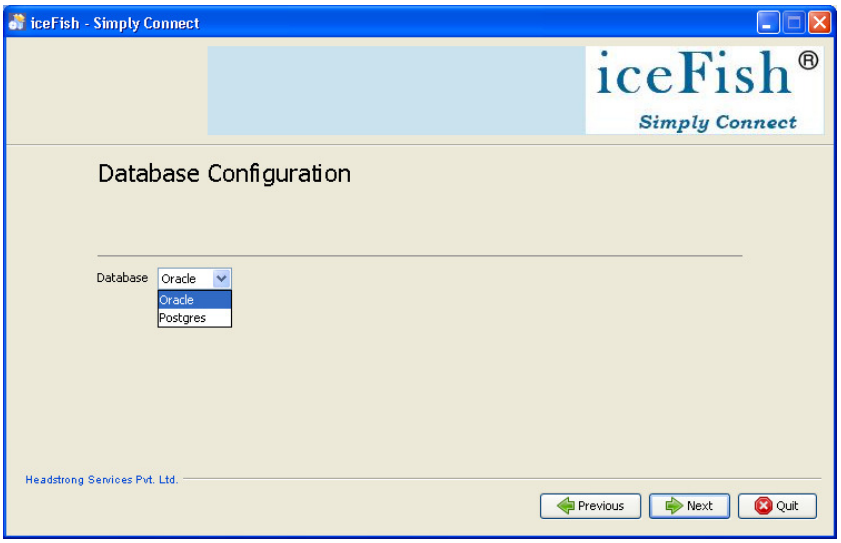

Figure 7: Database Configuration

Select the appropriate database Name click on Next.

3.7 Specifying database server configuration

In this screen user needs to provide the database configuration such as Database URL, User Name, password etc as shown below.

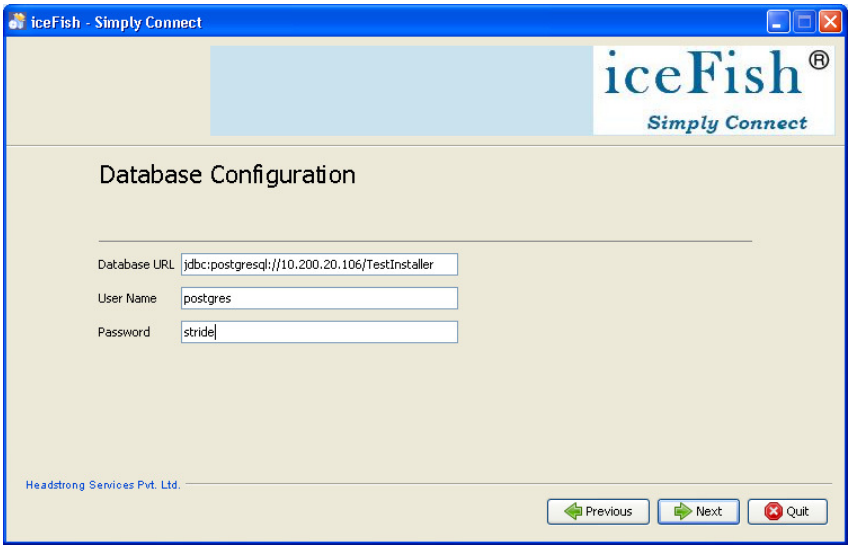

Figure 8: Database configuration Details

After providing all the details of Database such as Database URL, user Name, and password click on Next.

1. Database URL – URL of the database server
2. User Name – User name of the database
3. Password – password of that database user

3.8 Selecting Authentication provider

This screen has the option to select Authentication Provider.

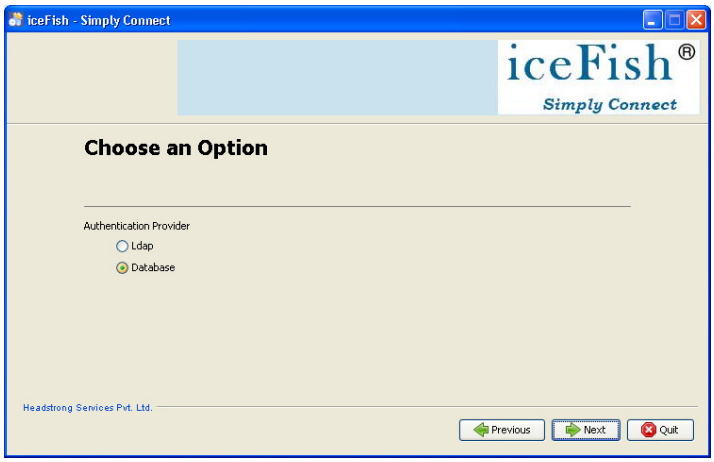

Figure 9: Authentication Provider

User has the option to select Authentication mechanism for authenticating users logging in iceFish UI Application - through LDAP or from Database.

So, if user wants to authenticate the user name through LDAP, select the radio button LDAP and click on Next. If you want to authenticate from Database select the radio button Database and click on Next. This database would be same as the one configured in the previous step.

3.9 Specifying iceFish UI Application install directory

In this screen user needs to provide the complete path, where user want to deploy the iceFish Web Application. This path should point to the root directory of Tomcat web server (parent folder of webapps).

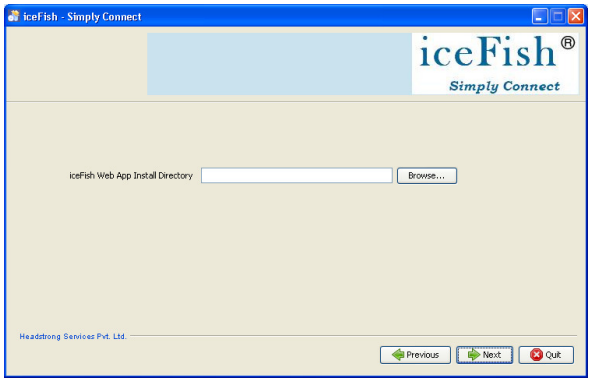

Figure 10: Web Application Install directory

After giving complete path, click on Next.

3.10 Specifying iceFish Server install directory

In this screen user needs to provide the complete path where iceFish Server Application has to be installed.

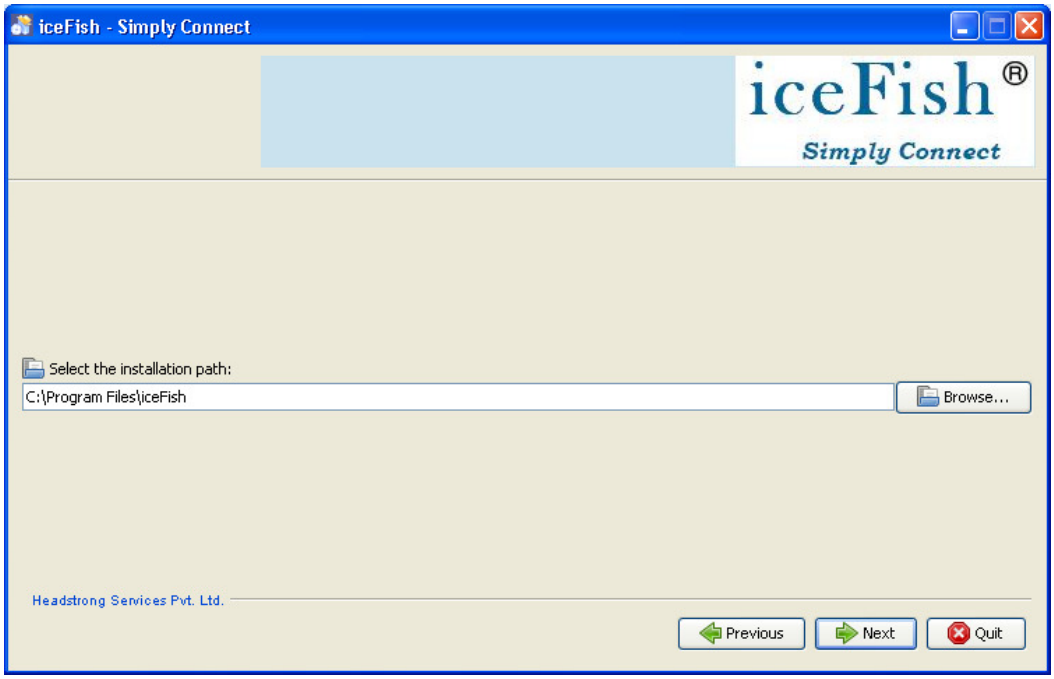

Figure 11: Server Installation Path

After giving complete path, click on Next.

3.11 Selecting Database Scripts for execution

If user wants Database script to be executed, select the check box Database Scripts and click on Next. If the database already exists and user doesn't want it to be overwritten, don't select the Database Scripts option.

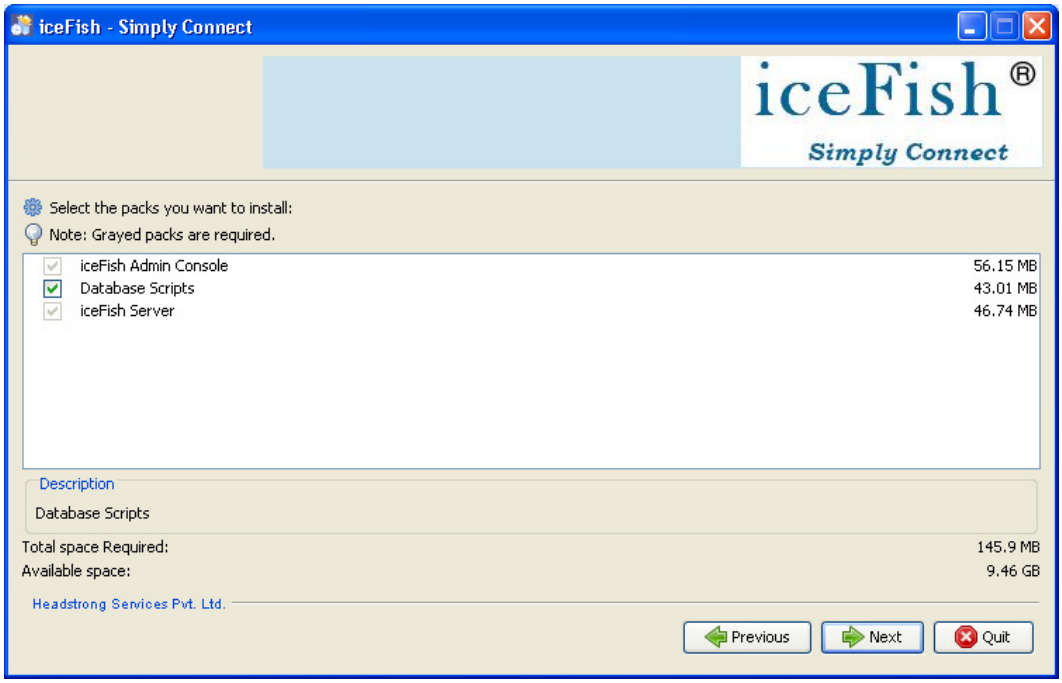

Figure 12: Package Selection

3.12 Installation progress

Following step shows the progress of iceFish components installation.

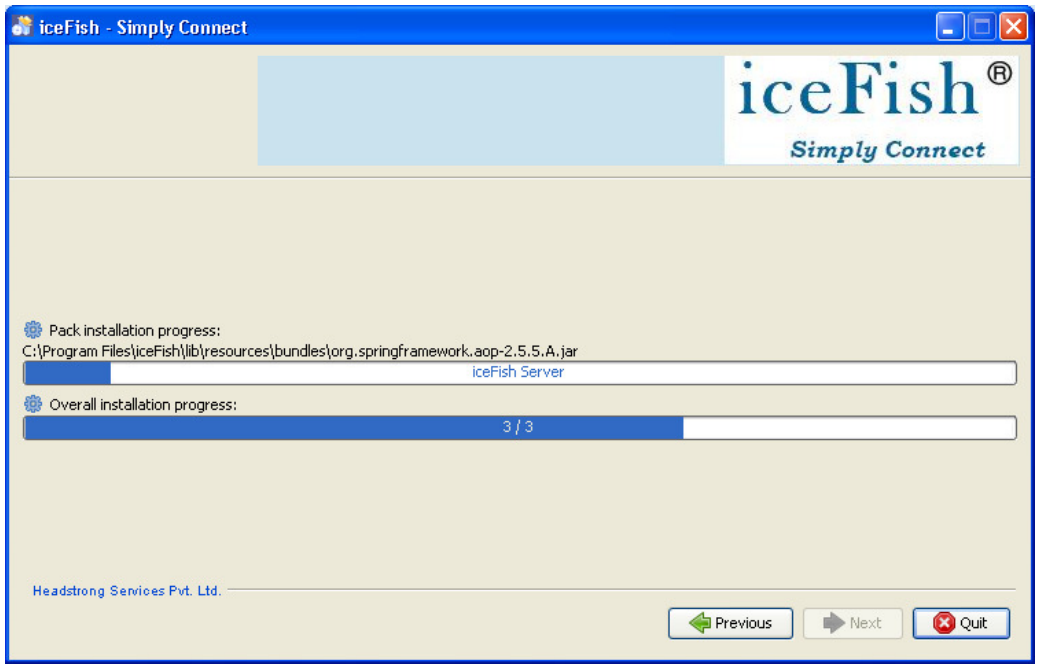

Figure 15: Installation Progress Bar

3.13 Creating and Initializing DB Schema

This step is exclusively for database scripts execution

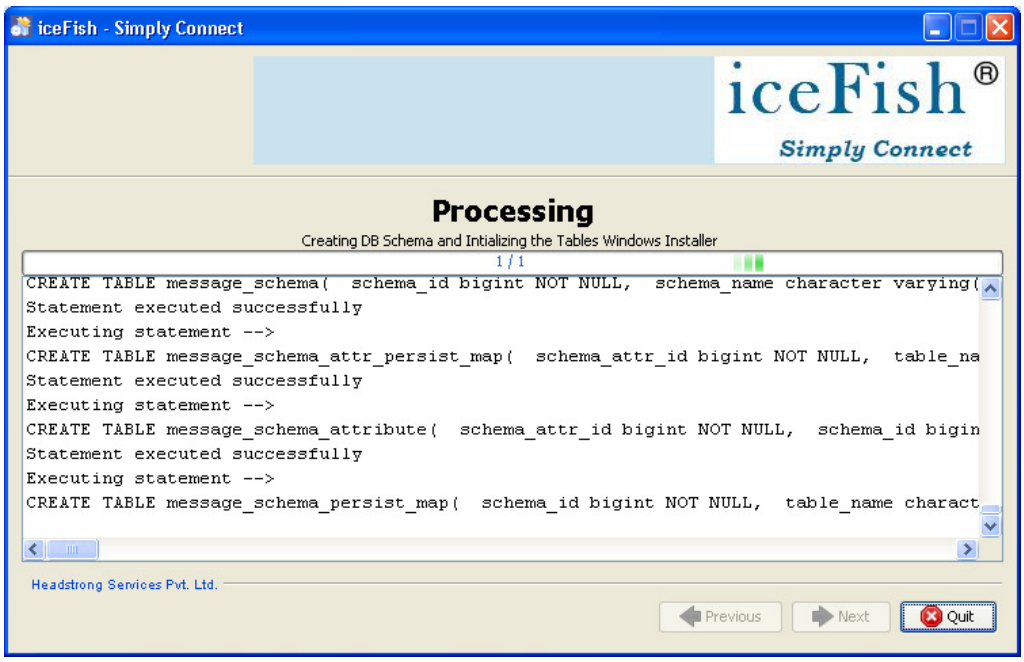

Figure 16: Execution of Database Scripts

Figure 7 Installation Successful

Congratulations. You have successfully installed IceFish.

4 Installation through Command Line Installer

4.1 Starting iceFish installation

To start the installation type "***java –jar iceFish.jar –console"*** in the command prompt. A welcome notice listing the details like Version Number of the product, Organization Name and other details will be displayed. Along with that, a message like below will be displayed with the options to continue, quit or redisplay of the previous step. .

"press 1 to continue, 2 to quit, 3 to redisplay".

This option will be displayed at the end of every step followed during installation. To proceed with the installation, press 1 to continue the installation or 2 to quit the installation or 3 to redisplay the previous step (which will be useful to reselect the option selected in previous step).

4.2 Selecting the Application

In this step, the list of applications will be listed like below:.

0 [ ] iceFish Web Application

1 [ ] iceFish Server

2 [ ] Both Web Application and Server

Enter "0" to install only the iceFish Web application or "1" to install the server application or "2" for installing both Web and Server applications. On selecting the applications to be installed, the confirmation message will be displayed with options to continue, quit or redisplay. On continuing the installation, follow the steps based on option selected

1. If selected option is 0 - skip the following steps and go to Section 4.6
2. If selected option is either 1 or 2 – continue with section 4.3

4.3 Setting iceFish Home directory

On selecting the option 1 or 2 in the previous step, the below message will be displayed asking for Application data home

Enter Application Data Home []

The folder mentioned will be used to store log file and graph of the processes assigned to the server instance. It will be the iceFish Server home directory. Ensure that forward slash ("/") is used as the directory separator. After entering the Application Data Home enter 1 to proceed to the next step.

Note: In case of multiple server instance running (ex. cluster mode), separate folders need to be created in home directory for each instance and the Application Data Home path should be pointing to the respective folders created for the instance.

4.4 Selecting Cluster or Stand alone mode

On continuing the installation, the options to select the mode in which iceFish server need to be installed will be displayed like

0 [ ] Install as Stand Alone Server

1 [ ] Install As Cluster

Enter "0" will install the server in Standalone mode and "1" will install it in clustered mode. On selecting Stand alone mode, step 4.5 is not required and can go to step 4.6 directly else continue from step 4.5 for installing in Clustered mode.

4.5 Specifying iceFish Cluster details

In this step, the user will be asked to enter cluster details like Cluster Name

Cluster Name []

Once the name of the cluster is entered, the following options will be displayed to choose installing the node as master or slave. Following the selection of node type, the details like Cluster Id & Node Name will be asked to enter.

Cluster Id []

Node Name []

press 1 to continue, 2 to quit, 3 to redisplay

4.6 Selecting database provider

The database type needs to be selected from the options listed as below

0 [ ] Oracle

1 [ ] PostGre SQL

input selection:

Enter "0" for Oracle and "1" for Postgres. Then enter 1 to continue configuring selected database properties.

4.7 Specifying database server configuration

For the selected database, enter the configuration details like Database URL, user name and password on display of below messages

Database URL []

User Name []

Password []

press 1 to continue, 2 to quit, 3 to redisplay.

For oracle database, enter the complete URL in the format below

jdbc:oracle:thin:@databaseip:port:databasename.

Ex: ***jdbc:oracle:thin:@10.200.20.36:1521:Testinstaller.***

4.8 Selecting Authentication provider

Select the user authentication provider from the list of options provided as below.

0 [ ] Ldap

1 [ ] Database

input selection:

For LDAP authentication(0) continue step 9 and for Database authentication(1) go to step 10.

4.9 Providing LDAP configuration

On authentication through LDAP, configure the below details like LDAP URL, Root Directory, User DSN and password.

For Ex: LDAP URL: ldap://10.200.41.16:10389
Root Director: o=iceFish
User DSN: uid=admin, ou=system .

4.10 Specifying iceFish UI Application install directory

This step will be displayed to enter the Web App install Directory on selecting the option 0 or 2 (install iceFish Web application or Both web application and server) in **step 4.2**. Specify the path of Tomcat Home folder where the installer will copy the iceFish.war file to Tomcat webapps folder.

4.11 Specifying iceFish Server install directory

The step will be displayed to enter the iceFish Server install directory on selecting the option 1 or 2(install iceFish Server or Both web application and server) in **step 4.2.** Specify the path of the folder where the iceFish Server related files should be copied.

Installer will start unpacking all files and finally the status as "Install was successful" will be displayed on successful installation.

4.12 Setting up iceFish Database

After completing the installation of iceFish Server and UI applications, run the script "Launchsql.sh' file located in ***$iceFishServer/scripts/db*** folder where the iceFish Server has been installed. On successfully running the script, all required database objects will be placed in the iceFish database specified during installation along with iceFish system data required for running the server.

Note: When the above script is run, it will create all database tables related to iceFish. Incase if these tables already exist they will be dropped and recreated. Please make sure that if you want to start fresh and recreate the DB schema then run this file. All nodes in cluster point to the same database.

5 Environment settings

5.1 Setting up the workstation for iceFish EUREX component

GATE service has to be installed in the system where iceFish containing the EUREX component is deployed. It needs to be installed as a standalone mode and should have the configuration file from the MISS server. Access to EUREXSIM – EUREX simulator has to be accessible from MISS server. As EUREX libraries are available only on Windows and Linux platform we have to install iceFish with EUREX components only on those environments.

5.2 Library path for LCH.Clearnet SA Connectivity

In Solaris environment, iceFish Server's library directory has to be part of LD_LIBRARY_PATH. Following is the command to set the same in Solaris environment where <install_dir> is iceFish Server's installation directory.

export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:.:/usr/local/lib/:/usr/lib/:<install_dir>/lib

5.3 Database error reporting configuration

In case iceFish has to be configured for logging all the error reports in database, following database table should exist in the database specified in the error reporting configuration. Following is the SQL script for PostgresSQL database.

```
CREATE TABLE errorreport (
  error_type             character varying(256),
  service_id             character varying(256),
  component_type         character varying(256),
  time_stamp             timestamp with time zone ,
  error_stacktrace       text,
  resorce                character varying(256),
  additional_information text
)
```

5.4 Registration of iceFish server

iceFish server has to be registered with iceFish UI Application so that message flow processes modeled through iceFish UI can be deployed and executed on it. Use "Administration -> Server Admin -> Register" in iceFish UI to register the iceFish server instance. Following details of the server has to be specified

1. Server Name: Logical name to identify the server to deploy and monitor
2. JMX URL: It should be "*service:jmx:rmi:///jndi/rmi://<iceFish_server_ip>:8004/jmxrmi*" where <iceFish_server_ip> is the IP address of the iceFish server system. To change the port number in which iceFish server is listening, change the same in *"<install_dir>/conf/wrapper.conf"* file for the property *"-Dcom.sun.management.jmxremote.port"* where "<install_dir>" is the path to iceFish server's installation directory.

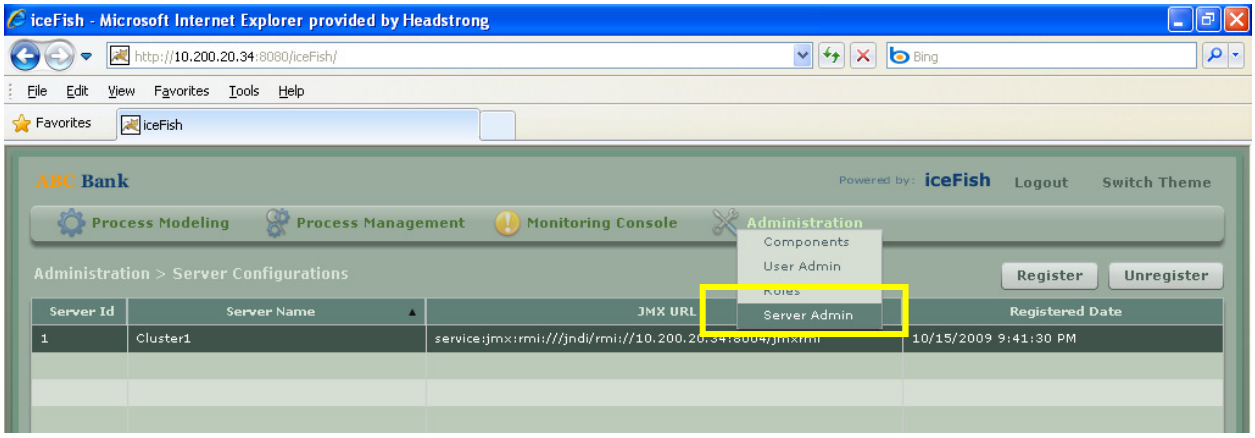

Figure 8 iceFish Server Registration

5.5 Configuration of pre-built orchestrations / processes

iceFish installation might contain pre-built orchestrations / process flows that need to be configured as per the deployment environment. Especially configurations of the end point and error reporting components in the message flows that are responsible for connecting to the external systems have to be changed ex. JMS endpoint (for message provider URL, etc), database endpoint (like connection string, driver, etc). This can be achieved by opening the respective process from *"Process Modeling -> Processes"*.

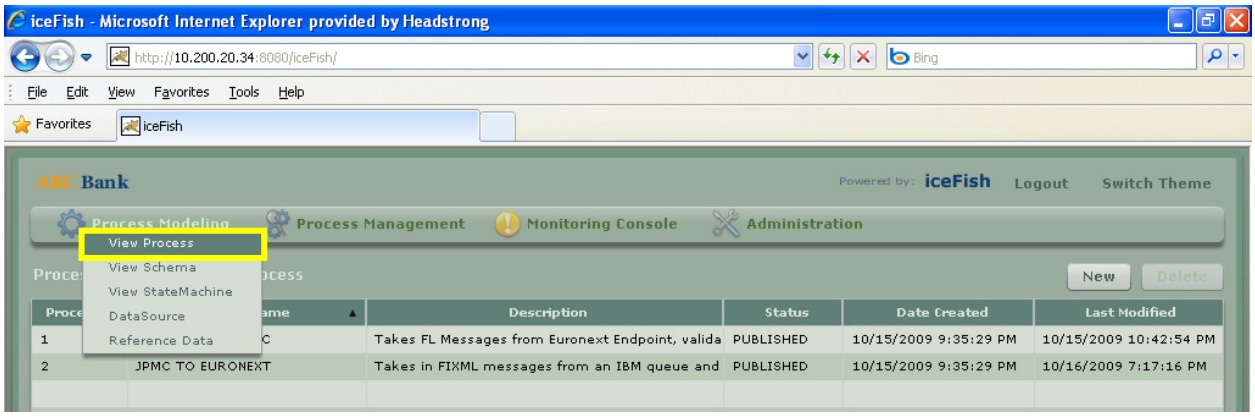

Figure 9 Viewing pre-built Orchestrations

Once configuration details of individual components in orchestrations are changed and reviewed, user needs to "Publish" the process to generate the required orchestration model for the process that can be

deployed on to a server. This can be achieved by selecting “Publish” button on the Process Model Graph screen.

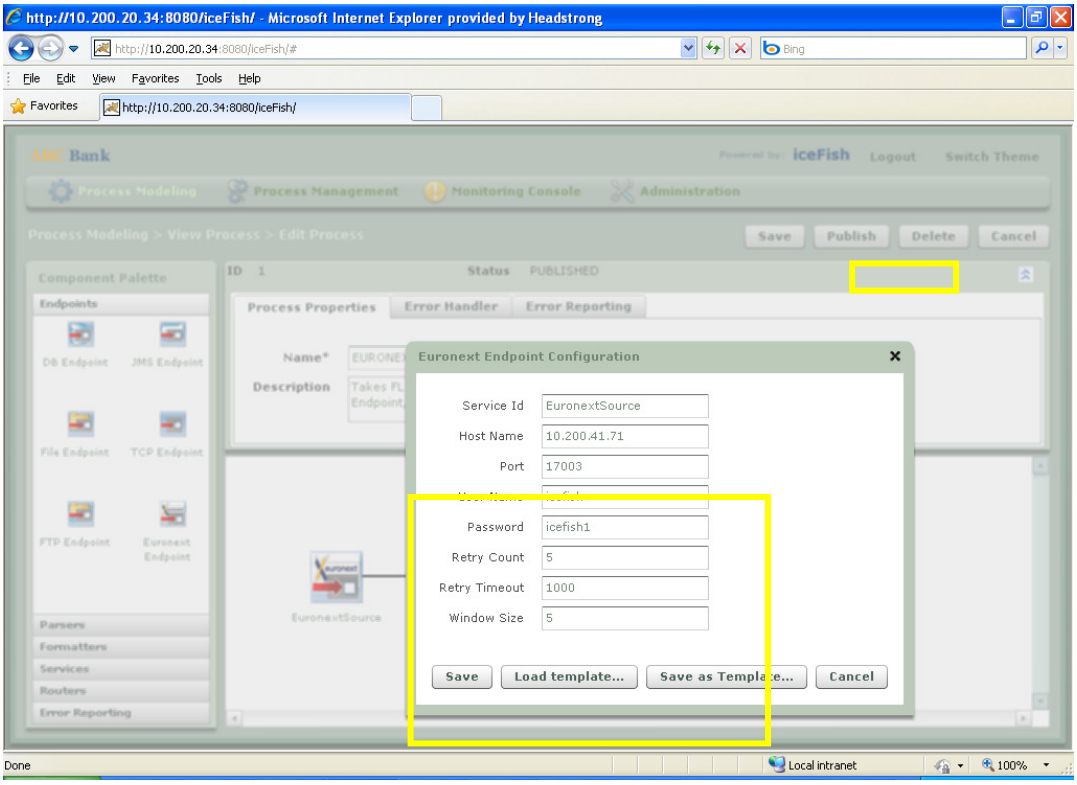

Figure 10 Configure and Publish Process

Successfully published processes can now be deployed on to the iceFish server from the “Process Management -> Process Status” screen. Follow the steps mentioned below to deploy and start the process:

1. Select the process to be deployed from the table
2. Select the registered server from the dropdown on top of the table
3. Select the button “Assign”
4. After the screen refreshes, status of the process should read “STOPPED”
5. Now select the process to be started and select “Start” button.

iceFish Server is now ready to receive / send messages from / to its endpoints.