SMR

ACD Statistics Monitoring and Reporting

Statistics

Monitoring

Reporting

Manual:

User's Guide

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Overview of ACD SMR

The SMR system is a monitoring tool used along with the Quadro Automatic Call Distribution (ACD) feature to monitor the current statuses of the Agents on one or many QuadroM32x. The status values are stored in the database and are used for generating the statistical reports for Agents and Agent Groups.

The SMR system includes the following components (Figure 1).

- The **Database** is a MySQL database used for storing the status data.

- The **ACD service** is a "Windows service" application that continuously monitors Quadro units, retrieves the status and statistics data, and stores them into the MySQL database. The default TCP port of the ACD Service is 4660.

- The **SMR client** application is a Windows application that retrieves data from the database for display. The default TCP port for communication with the database server is 3306. One or more SMR clients can connect to the database.

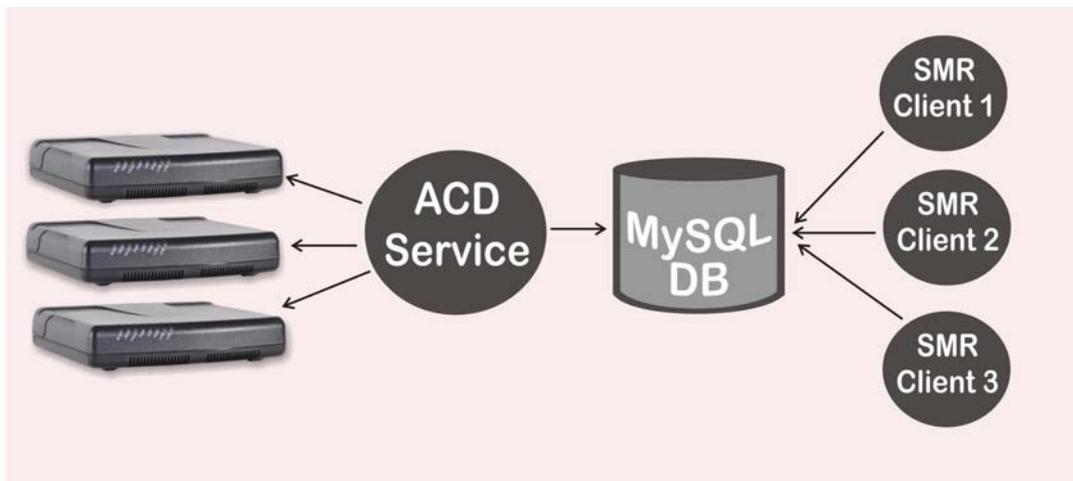- **Quadros** are QuadroM32x units with the properly configured ACD feature.

Figure 1 SMR components

All components may be installed and run on the same PC. Alternatively, any or all of them can be installed on a separate PC. The installation of each component is described below.

Setup and Configuration

MySQL Server

MySQL server is used for storing the status and statistical data obtained from Quadros. The following are the requirements on MySQL server:

- MySQL server version 5.0.45 or higher.

- Basic configuration with the default port of 3306 for TCP connection.

- A database user that is privileged to execute Create, Insert, Update, Select, Drop, and Delete commands. If the "root" user is to be used, ensure that the remote access for the root is enabled in MySQL configuration.

Installing MySQL Server

The following step-by-step instructions describe how to install the MySQL Server:

Please Note: The instructions below are not meant to be used as a comprehensive guide for the MySQL server. They describe the minimum installation required for the operation of SMR. For more information on the MySQL server setup, please refer to MySQL documentation.

1. Run the *setup.exe* for MySQL server. The Setup Wizard will start. Click **Next**.

Figure 2 Startup Page.

2. Choose **Typical** when prompted for the setup type. Click **Next**, then **Install**. The installation process starts.

Figure 3 Choosing the Setup Type.

3. Once the installation is completed, the page similar to the one shown in Figure 4 is displayed. Click the **Next** button twice.
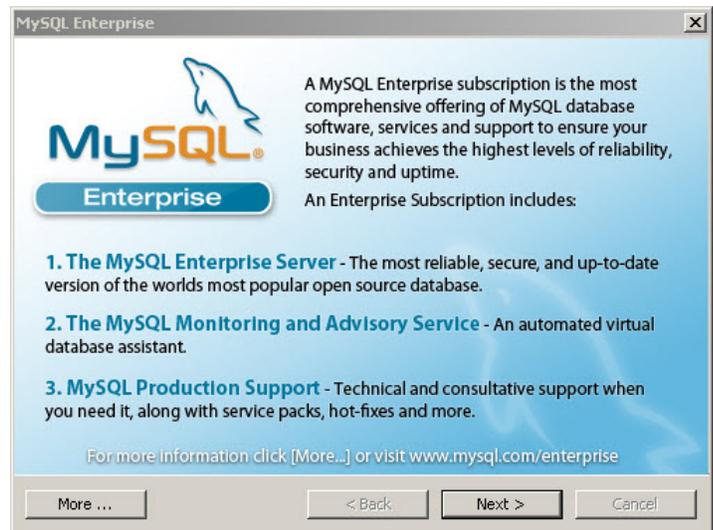

Figure 4 MySQL Setup Wizard - After Installation.

4. On the next page of the wizard, select the **Configure the MySQL Server now** checkbox to start the Configuration Wizard after the Setup Wizard. Click the **Finish** button.

   Note: If you skip the configuration, you can later launch the wizard by selecting MySQL→MySQL Server 5.0→MySQL Server Instance Configuration Wizard from the Start menu.

Figure 5 Last Page of the Setup Wizard

Configuring MySQL Server

The following step-by-step instructions describe how to configure the MySQL Server:

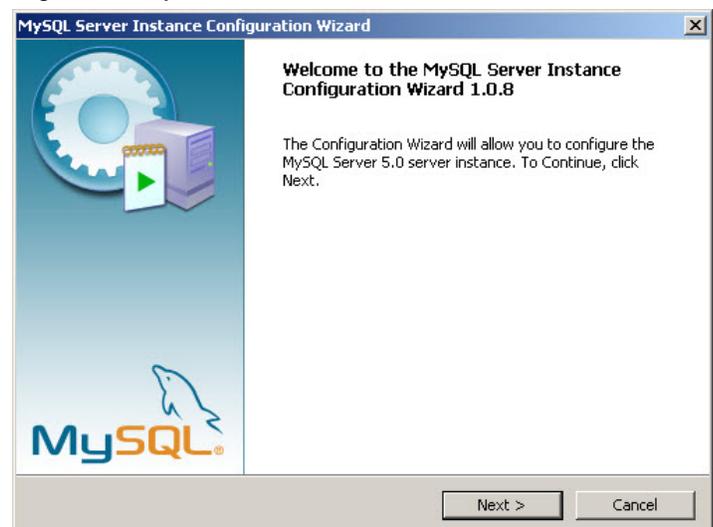1. On the startup page of the Configuration Wizard, click **Next**.

Figure 6 Startup Page.

2. Choose **Detailed Configuration** when prompted for the configuration type. Click **Next**.
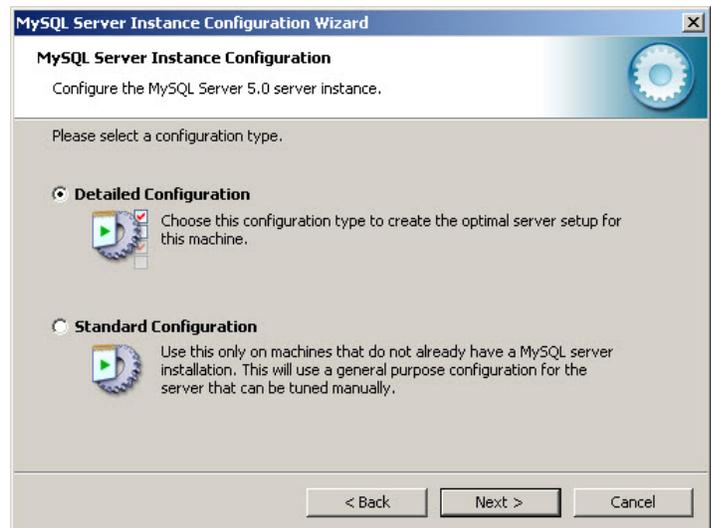

Figure 7 Choosing the Configuration Type.

3. Choose **Developer Machine** when prompted for the server type. Click **Next**.

Figure 8 Choosing the Server Type

4. Choose **Multifunctional Database** when prompted for the database usage type. Click **Next**.
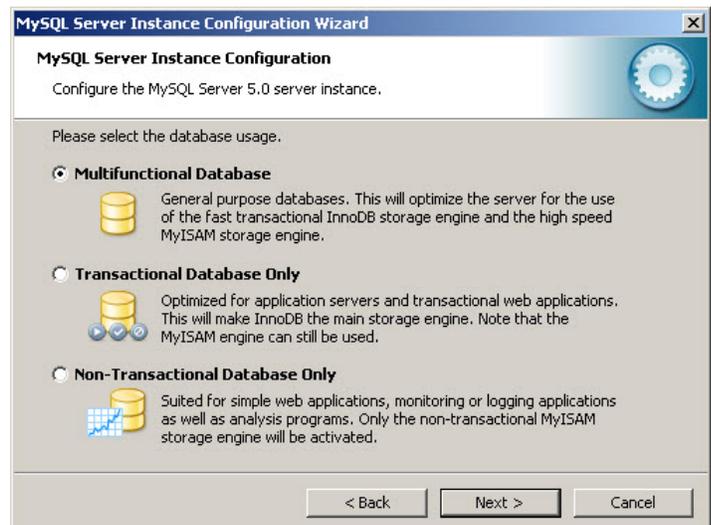
Figure 9 Choosing the Database Usage

5. Choose the drive and installation path for table space. Click **Next**.
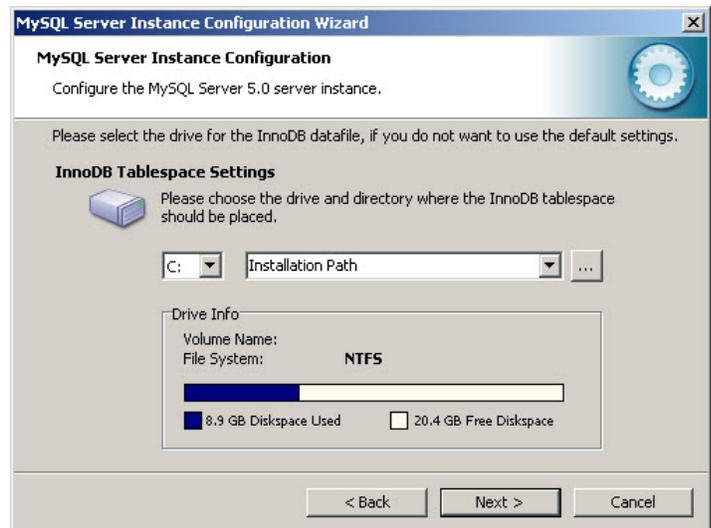
Figure 10 Choosing the Drive and Installation Path

6. Choose **Decision Support (DSS) / OLAP** when prompted for the number of concurrent connections to the server. Click **Next**.

Figure 11 Choosing the Number of Concurrent Users

7. Ensure that both **Enable TCP/IP Networking** and **Enable Strict Mode** checkboxes are selected. Leave the **Port Number** setting to its default values (3306). Click **Next**.
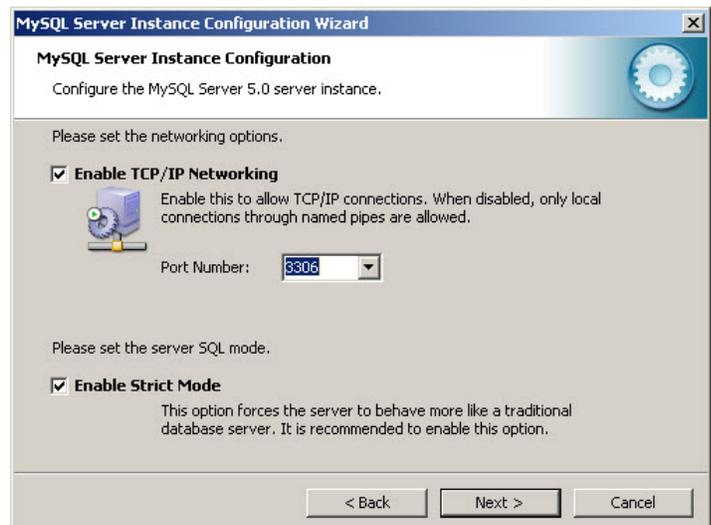
Figure 12 Choosing the Network Options

8. Choose the **Standard Character Set** option when prompted for the default character set. Click **Next**.
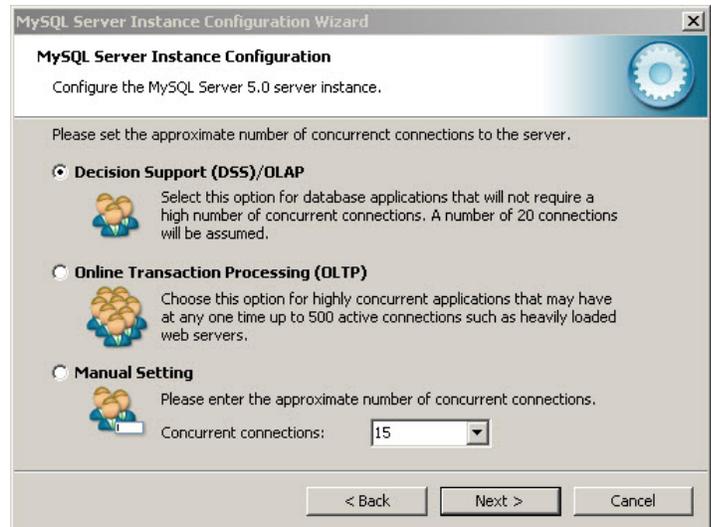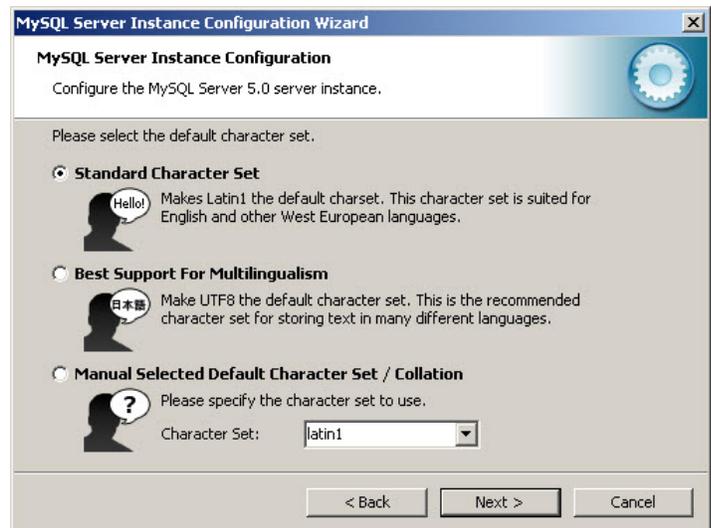

Figure 13 Choosing the Default Character Set

9. Ensure that both the **Install As Windows Service** and **Launch the MySQL Server automatically** checkboxes are selected and the **Service Name** is set to MySQL. Click **Next**.

Figure 14 Choosing the Windows Options

10. On this page of the wizard, enter the password for the "root" user.

    Please Note: Write down the specified password on a piece of paper and have it handy when configuring the ACD service and the SMR client applications.

11. Select the **Enable root access from remote machines** if the ACD service is to be installed on a separate machine.

12. Click **Next**, then **Execute**. Once the specified configuration is created, click **Finish**. The MySQL server is now ready for use.

Figure 15 Specifying the Password

ACD Service

The ACD service retrieves the status and statistics data from the Quadro and stores them into the MySQL database. The successful configuration of the service, should allow it to connect to the database and Quadro units.

Installing ACD Service

To install the ACD Service, run the *acdservicesetup.exe* executable file and follow the instructions of the ACD Service Setup Wizard until the last page is reached.

On this page, ensure that the **Configure ACD Service** checkbox is selected and click the **Finish** button. Selecting the checkbox will launch the ACD Service Manager, which is used for configuring the ACD service. The Manager can later be launched by selecting Epygi Technologies→ACD Service→ACD Service Manager from the Start menu.

Click the **Finish** button to launch the ACD Service Manager.

Figure 16 Completing the Setup Wizard

Configuring ACD Service

Once the ACD Service Manager (Epygi Technologies→ACD Service→ACD Service Manager) is run, it opens the dialog box shown is Figure 17.
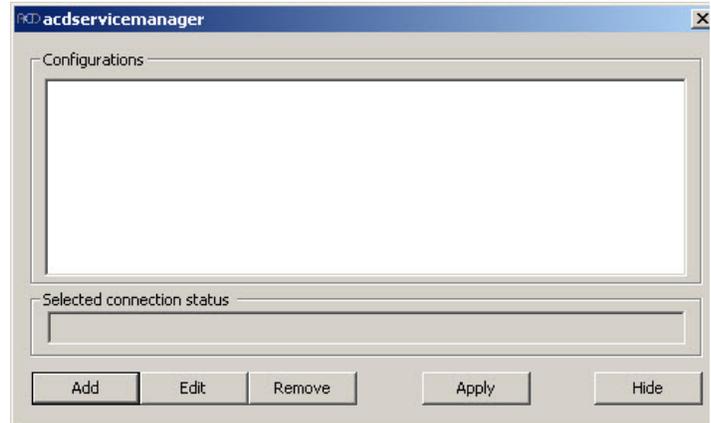

Figure 17 The ACD Service Manager

To configure the service, click the **Add** button and specify the following settings:

Figure 18 Specifying the Connection Settings

- **Quadro IP** and **port:** The IP address of the Quadro whose Agents should be monitored and the communication port. You may leave the default value of 4660.

- **Server:** The IP address or hostname of the MySQL server. If the ACD service is running on the same PC as the MySQL server, leave the **Server** setting to *localhost*.

- **User** and **Password**: The "root" user on the MySQL server with appropriate privileges and the password specified in step 10 of the section on Configuring MySQL Server.

The **Reset DB** button on this dialog box removes all entries for the select Quadro from the database.

Once the required settings are entered, click OK. The specified Quadro will appear in the **Configurations** box (Figure 19).

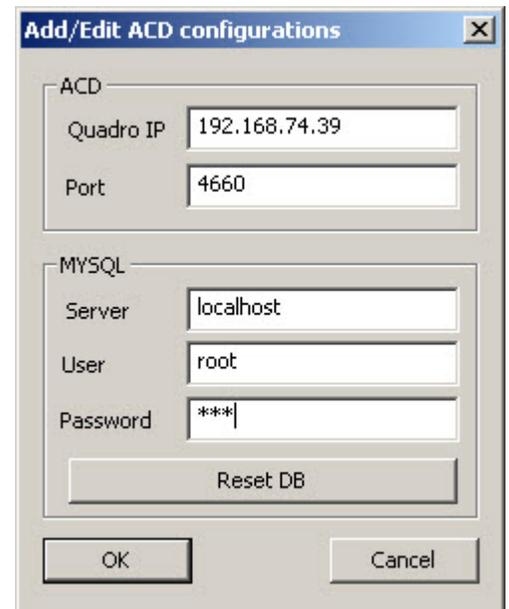Repeat this step for all Quadro units that should be monitored.

To edit the settings of the added Quadro, select the Quadro in the **Configurations** box and click the **Edit** button.

To remove the Quadro and thus stop monitoring it, select the Quadro in the **Configurations** box and click **Remove**.
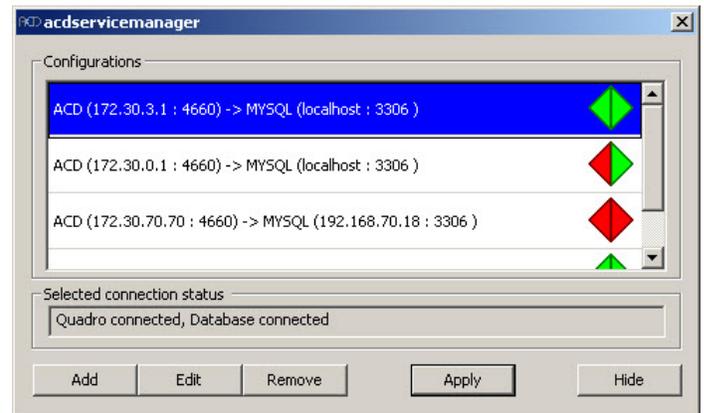
Figure 19 The Configurations Box

Once you completed specifying the list of Quadros, click the **Apply** button. The message informing that the ACD service restarted will pop up. Click **OK**.

If the ACD service successfully connects both to a Quadro and the MySQL server, it will show two linked triangles filled with green at the end of the entry line. The left triangle shows the connection state with the Quadro, and the right triangle indicates the connection with MySQL. In case of a connection failure, the triangles will be filled with red. Please check your network settings and ensure you have specified the correct connection settings.
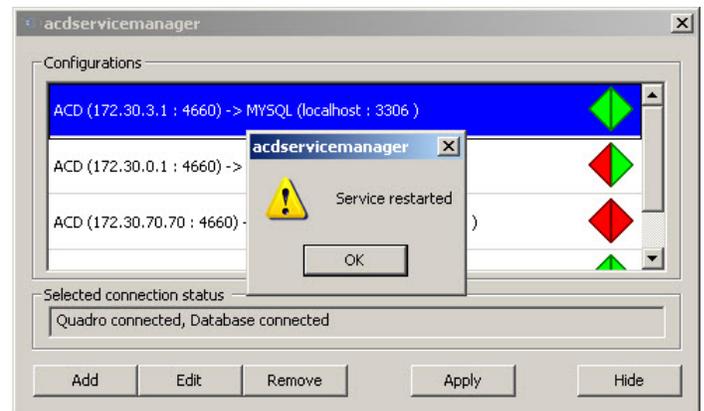
Figure 20 Restarting the Service

Please Note: If ACD service is running on a PC outside the Quadro LAN, then an appropriate port forwarding configuration is required on the Quadro. This can be done by selecting **Internet Uplink →Filtering Rules → Incoming Traffic/Port Forwarding** on the Quadro and adding a record for MySQL service pool. For more information on the adding a service pool, please refer to Quadro's Online help.

To close the ACD Service application, click the **Exit** button. Note that the service continues running. You may also choose to "Hide" the application, in which case it will be minimized to system tray and will indicate the connection state with the MySQL server and the highlighted Quadro.

ACD SMR Client

The ACD SMR client is used to retrieve the data from the database and display it to the user.

Installing the ACD SMR Client

To install the ACD SMR Client application, run the *acdsmrsetup.exe* executable file and follow the instructions of the Setup Wizard until the last page is reached (Figure 21).

On this page, ensure that the **Run SMR** checkbox is selected and click the **Finish** button. Selecting the checkbox will launch the SMR client application. The application can later be launched by selecting Epygi Technologies→SMR→SMR from the Start menu, which is the default installation path.

Figure 21 The Last Page of the Setup Wizard

Configuring the ACD SMR Client

On launching the ACD SMR Client application the **Connect to MySQL Server** (Figure 23) dialog box pops up. The dialog box is used for creating new connections and managing the existing ones.

To create a new connection, follow the steps below:

1. Click the **New** button, specify a name for the connection and click **Yes** (Figure 22). The connection will appear in the **Saved Connections** drop-down list.

Figure 22 Creating new connections

2. In the **Host Address** text box, enter the IP address or host name of the PC where the MySQL server is running.

3. In the **UserName** and **Password** text boxes enter the user settings specified in step 10 of the section on Configuring MySQL Server.

4. Click the **Connect** button. You'll be prompted to save the connection settings. Click **Save**.
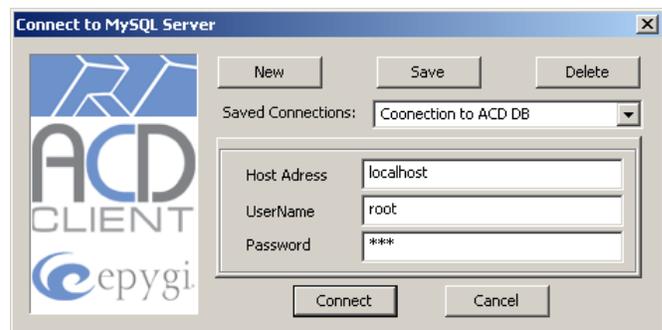
Figure 23 Connect to MySQL Server Dialog Box

On clicking the **Connect** button, the application tries to connect to the MySQL database server. If connected successfully, SMR will download the list of Quadro units that are currently monitored (Figure 24).

5.   From this list, choose the Quadro and click the **OK** button.

The SMR client will start downloading the initial status and statistics information for the selected Quadro from the database and populate its tables with that data (see below). Depending on the network condition and database load, this may take several minutes.
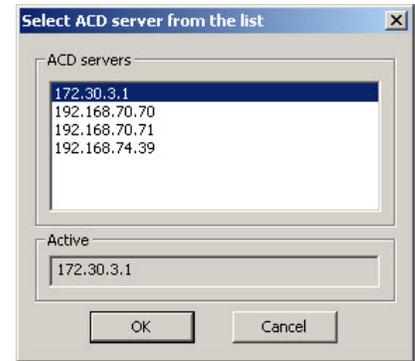
Figure 24 Selecting Quadro

ACD SMR Client User Interface

After all the components of the ACD SMR system have been successfully installed and configured, launch SMR by selecting Epygi Technologies→SMR→SMR from the Start menu (or if you have chosen to create a desktop icon in the SMR Setup wizard, simply double click on the SMR icon). This opens SMR's main window (Figure 25).
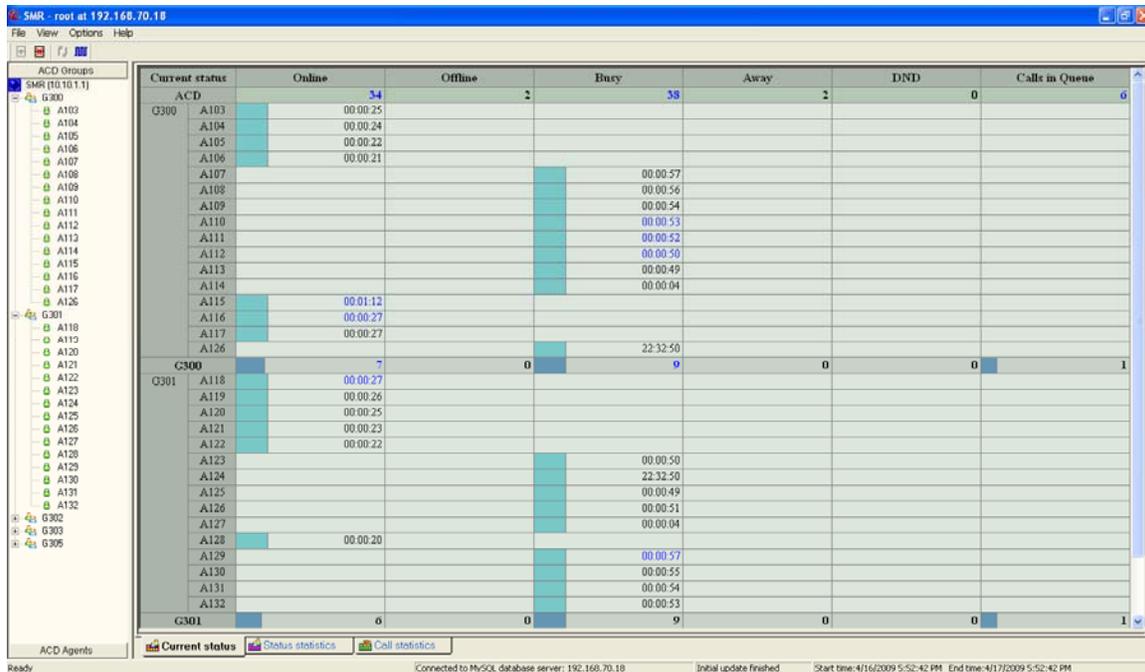
Figure 25 The Main Window of ACD SMR

The main window of SMR client application is divided into the following areas:

- **Main menu**   The Main Menu is used for accomplishing common tasks, such as opening/closing a connection with the MySQL database, selecting the timeframe for displaying statistical data.

- **Toolbar buttons**   The toolbar buttons are shortcuts to the most frequently used menu items.

- **Navigation window** This window displays the navigation tree and allows the user to change the table views.

- **Tab windows**   The tab windows contain the tables with the data retrieved from the database.

- **Status bar**   The status bar displays useful information on the application and the connection state. It also displays the currently selected timeframe (on the right).

Main menu

The main menu includes the following menus with their respective menu items:

File

- **Connect** opens the **Connect to MySQL Server** dialog box, enabling the user to change/set connection settings. (See the section on Configuring the ACD SMR Client).
- **Disconnect** closes an established connection with the MySQL server. The menu item is active only if the connection with the MySQL server has successfully been set up.
- **Change ACD Server** opens the **ACD server from the list** dialog box, enabling the user to choose the Quadro whose Agents/Agent Groups should be monitored. (See the section on Configuring the ACD SMR Client).
- **Export data**- Exports the selected statistics data tables to CSV formatted files.
- **Exit** closes the SMR client application.

View

- **Toolbar** shows or hides the toolbar
- **Status Bar** shows or hides the status bar.
- **Show Graphics** allows to show/hide the graphical bars in cells.
- **Display Agent** displays the Agents' IDs, Agents' Names or both in Navigation tree, status and statistics tables based on the chosen selection: "Display Agent ID", "Display Agent name" or both.
- **Agent ID/Name length** dfines the maximum allowed number of symbols in the Agent ID and/or Agent Name in Current Status, Status Statistics and Call Statistics tables.

Options

- **Poll Rate** opens the **Poll Rate** window (Figure 26), enabling the user to set a new value for the **Rate** parameter. This parameter specifies the rate (ms) at which the active table data is updated from information in the database.

Figure 26 Setting the Poll Rate

- **Timeframe** opens a drop-down list, enabling the user to choose the timeframe for generating statistical data. The possible values for the timeframe are **Daily**, **Weekly**, **Monthly**, and **Custom**.

    The **Custom** option opens the **Customize Periods** dialog box where the user can specify the desired start and end date time values for the timeframe.
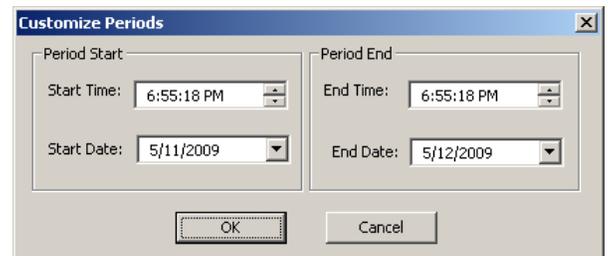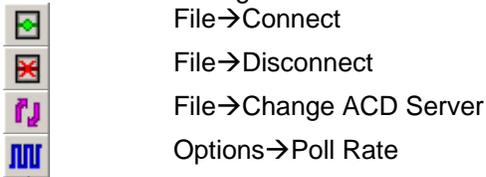

Figure 27 Customize Periods Dialog Box

Help

- **SMR Help** invokes the SMR Help System.
- **About SMR** displays the current version of SMR and copyright details.

Toolbar Buttons

You can use the following toolbar buttons to easily access these menu items:

File→Connect

File→Disconnect

File→Change ACD Server

Options→Poll Rate

Navigation Window

The Navigation Window displays the list of Agents and Agent Groups that are available on the selected Quadro. It also allows switching between two table views. The data in tables can be viewed either by *ACD Agents* or by *ACD groups* (Figure 28). When viewed by Agents, the navigation tree on the left shows the Agents as main nodes and the groups they belong to as sub-nodes. When viewed by Agent Groups, the tree displays the groups as main nodes and the Agents they comprise as sub-nodes. To switch between these views, click the respective button in the navigation window.
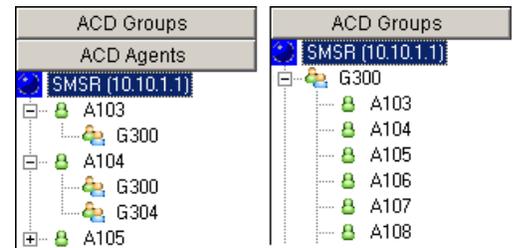
Figure 28 Selecting views

Tab Windows

All the data retrieved from the database is displayed in three tables in ACD SMR: **Current Status**, **Status Statistics**, and **Call Statistics**. The tables are located on different tab pages and can be accessed by clicking the appropriate tab page at the bottom of the form. The information on the currently active window is updated at a default poll rate of 5000 ms that can be modified from the **Options** menu. The detailed description of each of these tables is given below.

Current Status

The **Current Status** table shows the current status of Agents in a selected group. The table is organized in the following way: table columns represent possible statuses an Agent may have and the rows represent Agents or Agent Groups. For an Agent, a non-empty cell indicates the current status of the Agent and the time (h:mm:ss) since the Agent is in that state. For Agent Groups, a cell indicates the number of its Agents that currently have the corresponding status.

An Agent can have any of the following statuses.

- **Online**   The Agent is logged in and is idle. It is available to accept calls.

- **Offline**   The Agent is not logged in and cannot accept calls.

- **Busy**   The Agent is currently on call

- **Away**   The Agent is logged in but not available to accept the calls for a short time. To accept the calls the Agent's status needs to be changed to **Online** either from the phone or from Quadro GUI

- **DND**   The Agent is logged in but not available to accept the calls for a specified timeframe. When that timeframe expires, ACD automatically changes the status of that Agent to Online.

Except for the **Busy** status, all other statuses can be changed from the phone or Quadro GUI. The same Agent may be included in different groups and thus, it may have different statuses in different groups.

For Agent Groups, the table also shows the number of calls that are in the group's call queue – the **Calls in the Queue** Column. Note that this parameter is not applicable to Agents.

The ACD row at the top of the table indicates the total number of Agents in all groups that have the corresponding status.

Figure 29 shows a screenshot of the **Current Status** window with the G300 Agent Group expanded. Fourteen Agents in that group are currently online and the A110 Agent is in the **Busy** state.

Current status		Online	Offline	Busy	Away	DND	Calls in Queue
ACD		99	0	6	0	0	2
G300	A103	00:03:28					
	A104	00:03:06					
	A105	00:02:59					
	A106	00:02:42					
	A107	00:02:30					
	A108	00:02:13					
	A109	00:02:01					
	A110			00:01:52			
	A111	00:05:02					
	A112	00:04:45					
	A113	00:04:33					
	A114	00:04:16					
	A115	00:04:04					
	A116	00:03:57					
	A117	00:03:35					
G300		14	0	1	0	0	0
G301		14	0	1	0	0	0
G302		15	0	0	0	0	1
G303		15	0	0	0	0	0
G304		15	0	0	0	0	0
G305		14	0	1	0	0	0
G306		12	0	3	0	0	1

Figure 29 Current Status Page.

Status Statistics page

The **Status Statistics** page shows how long Agents have been in each of the five states for a selected timeframe (Options→Timeframe). The value is expressed both in time units and as a percentage of total time. The filled rectangles in cells are used to visualize the percentage. The cell values in blue indicate that the value has changed during the last database poll.

For Agent Groups, cell values indicate the average values of Agent statuses for the Agent Group.

For ACD, cell values indicate the average value of statuses for all Agent Groups

 Figure 30 shows a screenshot of the **Status Statistics** page.

Status statistics		Online (hh:mm:ss)	Offline (hh:mm:ss)	Busy (hh:mm:ss)	Away (hh:mm:ss)	DND (hh:mm:ss)
ACD		09:43:02 (87.1%)	00:00:00 (0.0%)	02:00:56 (12.9%)	00:00:00 (0.0%)	00:00:00 (0.0%)
G300	A103	07:50:25 (46.0%)	00:00:00 (0.0%)	09:11:24 (54.0%)	00:00:00 (0.0%)	00:00:00 (0.0%)
	A104	12:55:05 (97.6%)	00:00:00 (0.0%)	00:18:53 (2.4%)	00:00:00 (0.0%)	00:00:00 (0.0%)
	A105	14:13:26 (97.8%)	00:00:00 (0.0%)	00:19:08 (2.2%)	00:00:00 (0.0%)	00:00:00 (0.0%)
	A106	11:17:07 (66.5%)	00:00:00 (0.0%)	05:41:03 (33.5%)	00:00:00 (0.0%)	00:00:00 (0.0%)
	A107	12:58:59 (97.6%)	00:00:00 (0.0%)	00:19:05 (2.4%)	00:00:00 (0.0%)	00:00:00 (0.0%)
	A108	12:51:05 (97.6%)	00:00:00 (0.0%)	00:18:46 (2.4%)	00:00:00 (0.0%)	00:00:00 (0.0%)
	A109	11:02:00 (64.9%)	00:00:00 (0.0%)	05:57:18 (35.1%)	00:00:00 (0.0%)	00:00:00 (0.0%)
	A110	12:56:09 (97.7%)	00:00:00 (0.0%)	00:18:38 (2.3%)	00:00:00 (0.0%)	00:00:00 (0.0%)
	A111	12:56:50 (97.7%)	00:00:00 (0.0%)	00:18:27 (2.3%)	00:00:00 (0.0%)	00:00:00 (0.0%)
	A112	11:16:40 (66.3%)	00:00:00 (0.0%)	05:44:39 (33.7%)	00:00:00 (0.0%)	00:00:00 (0.0%)
	A113	12:57:44 (97.6%)	00:00:00 (0.0%)	00:19:00 (2.4%)	00:00:00 (0.0%)	00:00:00 (0.0%)
	A114	12:55:39 (97.6%)	00:00:00 (0.0%)	00:18:40 (2.4%)	00:00:00 (0.0%)	00:00:00 (0.0%)
	A115	11:08:07 (65.5%)	00:00:00 (0.0%)	05:51:33 (34.5%)	00:00:00 (0.0%)	00:00:00 (0.0%)
	A116	13:01:56 (97.6%)	00:00:00 (0.0%)	00:19:30 (2.4%)	00:00:00 (0.0%)	00:00:00 (0.0%)
	A117	13:06:59 (97.6%)	00:00:00 (0.0%)	00:19:22 (2.4%)	00:00:00 (0.0%)	00:00:00 (0.0%)
G300		12:13:52 (85.7...	00:00:00 (0.0%)	02:22:21 (14.3...	00:00:00 (0.0%)	00:00:00 (0.0%)
G301		04:28:06 (86.4...	00:00:00 (0.0%)	01:54:50 (13.6...	00:00:00 (0.0%)	00:00:00 (0.0%)
G302		12:03:32 (84.6...	00:00:00 (0.0%)	02:28:37 (15.4...	00:00:00 (0.0%)	00:00:00 (0.0%)
G303		11:35:25 (83.1...	00:00:00 (0.0%)	02:37:16 (16.9...	00:00:00 (0.0%)	00:00:00 (0.0%)
G304		12:19:28 (95.8...	00:00:00 (0.0%)	00:33:07 (4.2%)	00:00:00 (0.0%)	00:00:00 (0.0%)
G305		12:02:29 (93.7...	00:00:00 (0.0%)	00:48:02 (6.3%)	00:00:00 (0.0%)	00:00:00 (0.0%)
G306		03:18:20 (80.2...	00:00:00 (0.0%)	03:22:18 (19.8...	00:00:00 (0.0%)	00:00:00 (0.0%)

Figure 30 Status Statistics Page

Call Statistics

The **Call Statistics** displays the following information (Figure 31):
Applicable to both for Agents and Agent Groups:

- **Calls Answered** – the total number of calls answered by an Agent/Agent Group within the selected timeframe.

- **Duration Avg**. – the average duration of calls answered within the selected timeframe.

- **Avg. Queue Wait Time** – the average time calls stayed in the queue before the Agent answered the call.

Applicable to Agents groups only:

- **Calls Received** – the total number of calls received by an Agent Group within the selected timeframe.

- **Rejected (Overflow)** – the total number of calls received by the group after the maximum **Call Queue** size has been reached.

- **Rejected (Timeout)** – the total number of calls received by the group and not answered within the ringing timeout (Group Ring Timeout).

- **Calls Abandoned** – the total number of calls received by the group and closed by the user before being answered.

- **Avg. Abandon Wait Time** – the average duration of calls' wait time in the queue filtered for abandoned calls only.

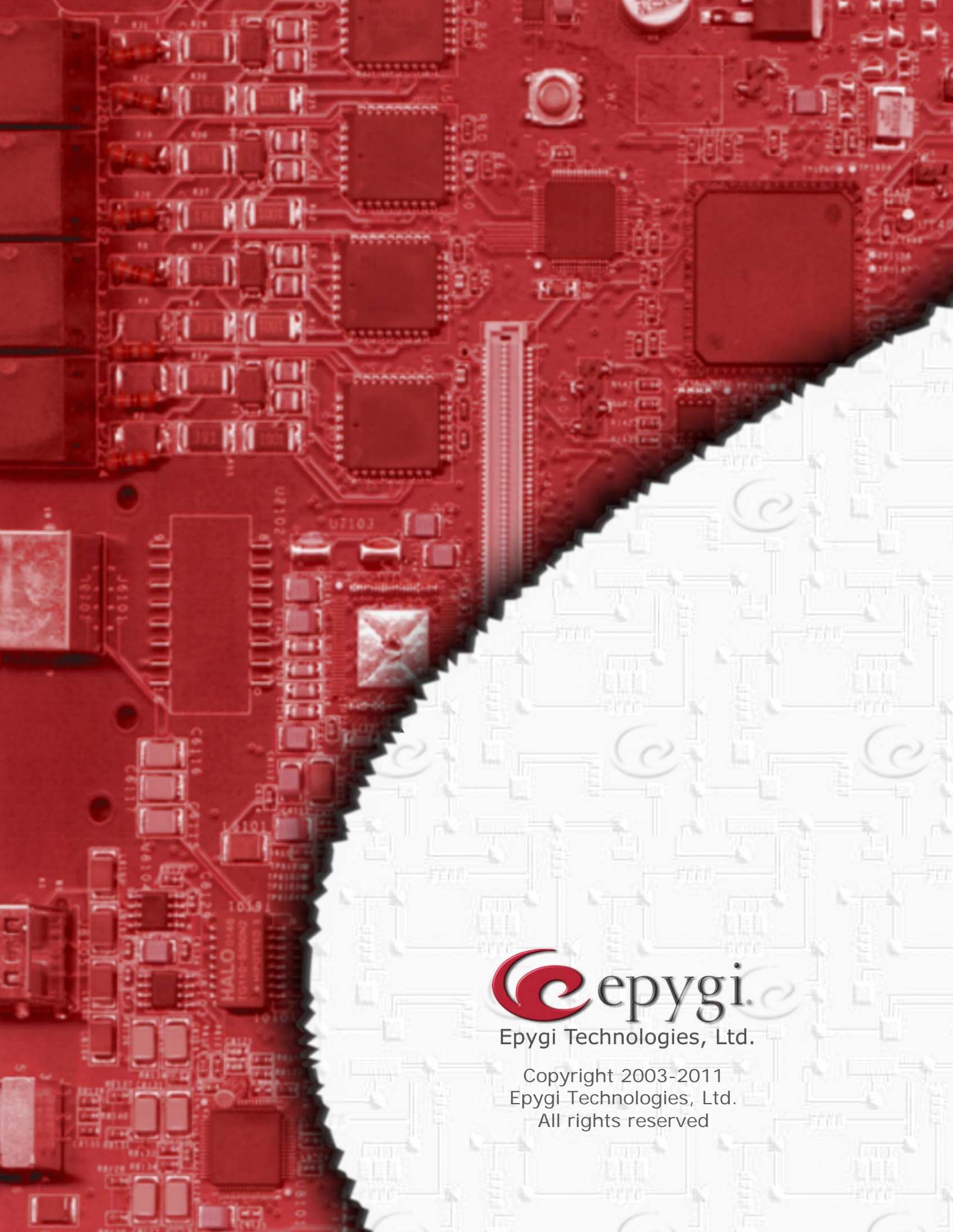For the ACD row, the corresponding values are totals for all the groups.

Call statistics		Calls Answered	Duration Avg (hh:mm:ss)	Queue Wait (hh:mm:ss)	Calls Received	Rejected (Overflow)	Rejected (Timeout)	Calls Abandoned	Abandoned Wait (hh:mm:ss)
ACD		9	00:00:02	00:00:06	15	0	4	2	00:00:04
G111	Agent62								
	Agent63								
	Agent64								
G111		9	00:00:02	00:00:06	15	0	4	2	00:00:04
G222									

Call Statistics Detailed Information (15 records)							
Date/Time	Group	Caller ID	Called ID	Called Name	Time on Hold	Time on Live Call	Close Reason
Dec 12/10/10 13:33:16	G111	20208@sip.epygi.com [SIP]	A61	Agent61	00:00:08		Abandoned
Dec 12/10/10 13:27:54	G111	20208@sip.epygi.com [SIP]	A61	Agent61	00:00:07	00:00:01	Closed By Caller/Agent
Dec 12/10/10 12:47:32	G111	20208@sip.epygi.com [SIP]			00:00:15		Rejected Timeout
Dec 12/10/10 12:47:26	G111	20208@sip.epygi.com [SIP]	A61	Agent61			Abandoned
Dec 12/10/10 12:47:04	G111	20208@sip.epygi.com [SIP]			00:00:15		Rejected Timeout
Dec 12/09/10 15:30:06	G111	20208@sip.epygi.com [SIP]	A61	Agent61	00:00:01	00:00:01	Closed By Caller/Agent
Dec 12/09/10 15:25:02	G111	20208@sip.epygi.com [SIP]	A61	Agent61	00:00:01	00:00:01	Closed By Caller/Agent
Dec 12/09/10 15:24:55	G111	20208@sip.epygi.com [SIP]	A61	Agent61	00:00:02	00:00:01	Closed By Caller/Agent
Dec 12/09/10 15:24:12	G111	20208@sip.epygi.com [SIP]	A61	Agent61	00:00:03	00:00:01	Closed By Caller/Agent
Dec 12/09/10 15:24:04	G111	20208@sip.epygi.com [SIP]	A61	Agent61	00:00:03	00:00:02	Closed By Caller/Agent
Dec 12/09/10 14:50:38	G111	20208@sip.epygi.com [SIP]	A61	Agent61	00:00:02	00:00:04	Closed By Caller/Agent
Dec 12/09/10 14:50:12	G111	20208@sip.epygi.com [SIP]	A61	Agent61	00:00:01	00:00:02	Closed By Caller/Agent
Dec 12/09/10 14:49:49	G111	20208@sip.epygi.com [SIP]	A61	Agent61	00:00:03	00:00:03	Closed By Caller/Agent
Dec 12/09/10 14:44:12	G111	20208@sip.epygi.com [SIP]			00:00:15		Rejected Timeout
Dec 12/07/10 12:31:32	G111	20208@sip.epygi.com [SIP]			00:00:15		Rejected Timeout

Figure 31 Call Statistics Page

The table under the splitter includes the calls related information. The details are presented below:

- **Date/Time –** call start time

- **Group –** ACD group of agent answered the call

- **Caller IP –** caller number (PBX, SIP or PSTN)

- **Called ID –** agent number answered the call

- **Called Name** - Called Agent name.

- **Time in Hold –** time the call stayed in queue before being answered/rejected or canceled the call

- **Time in Live call –** time of call duration with current agent

- **Close Reason** – call's closed reason (Closed by Agent/Caller, Abandoned, Rejected Timeout)

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