



# Advanced Call Router™

## Manual

MAX Communication Server  
Release 8.0

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# Advanced Call Router

Advanced Call Router is the standard Altigen Call Router application plus call router service. Advanced Call Router requires the purchase and activation of an Advanced Call Router license.

**Note:** The workgroup to which incoming trunk calls will be routed via Call Router must be assigned to the auto attendant whose Action is set to “Adv - Advanced Call Router,” with **Ext Num** set to the virtual extension you use to configure Call Router. For information on configuring auto attendants, refer to the Auto Attendant Configuration chapter of the *MAXCS Administration Manual*.

## Requirements

Supported Operating systems:

- Windows Server 2008 SP2 (32-bit)
- Windows Server 2008 R2 SP1 (64-bit)
- Windows Server 2012 R2
- Windows 7 (32-bit and 64-bit)

Minimum system requirements:

- Intel 2GHz Pentium 4 or equivalent
- 40GB available hard drive disk space
- 1GB RAM

## 32-Bit ODBC

If you plan to use Advanced Call Router with a database, you will need to create a 32-bit ODBC connection on the MaxCS system. The ODBC is used to connect to a database at your SQL system.

To create a 32-bit ODBC connection on a 64-bit OS system,

1. Run `C:\windows\SysWOW64\odbcad32.exe`.
2. Create an ODBC data source in System DSN to access your SQL database. Select **SQL Authentication** and test the database connection.
3. Use the same SQL authentication information in Advanced Call Router configuration.

# Installation

To install Advanced Call Router,

4. Run the .exe file from the installation media.
5. Setup will confirm the destination for the Call Router application (the default is C:\Program Files\AltiGen\Call Router).

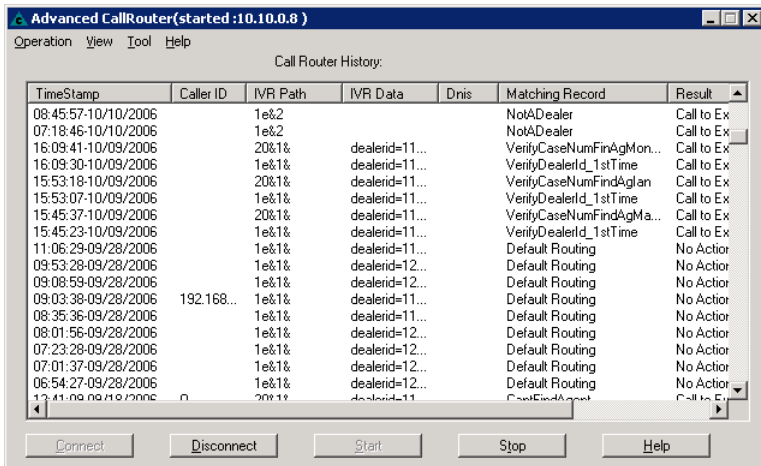
To select a different location, use the **Browse** button to choose the new location.

6. Click **Next** to proceed.

**Note:** **Advanced Call Router** Service requires the purchase and activation of the Advanced Call Router license.

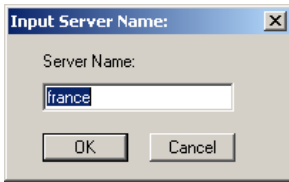
## Configure/Run Advanced Call Router

1. Launch Call Router from the Windows **Start** menu.

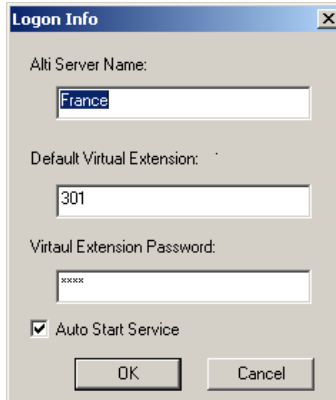


2. Click the **Connect** button to enter the Call Router Server Name or IP address to connect to, then click **OK**.

To disconnect from this server, click the **Disconnect** button.



3. Select **Operation > Logon Info**.



4. In the **Logon Info** window, enter the **Server Name** that Advanced Call Router will connect to, along with the **Default Virtual Extension** and **Password** then click **OK**.

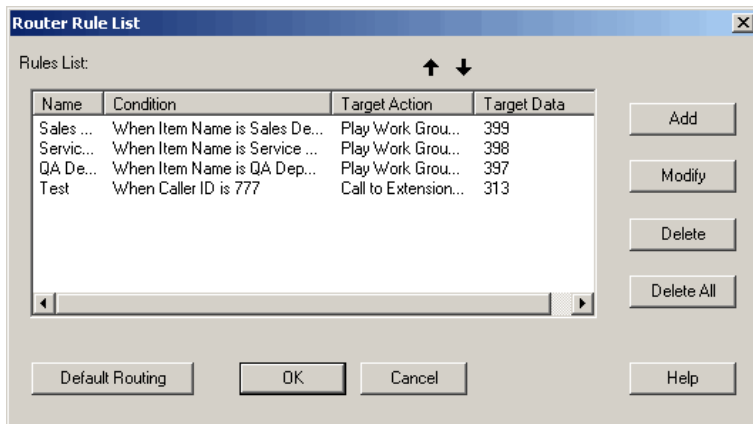
(Optional) Check **Auto Start Service** to have Advanced Call Router start routing calls automatically, after the system restarts or after Advanced Call Router service has been stopped and restarted.

**Note:** Up to 8 login attempts are allowed, after which login will be disabled from 1 to 24 hours (depending on the setting in MaxAdministrator).

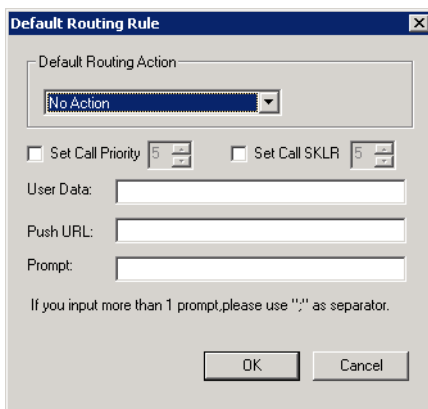
5. Click **Start** to run Advanced Call Router. When Advanced Call Router is stopped, you can configure the server and login information.
6. Route Rules and Show Monitor can be configured after Advanced Call Router is started.

## Advanced Call Router Route Rules

To create route rules that will be used to route calls, select **Operation > Route Rule** to open the **Route Rule List** window. This window also allows you to view existing route rules, and modify and delete route rules.



- **Add** – opens a Custom Record dialog box, where you can create a new record and build the conditions for the record.
- **Modify** – opens the Customer Record dialog box to modify the record selected in the Record List.
- **Delete** – deletes the record selected in the Record List.
- **Delete All** – deletes all records in the Record List.
- The **Default Routing** button opens a **Default Routing Rule** dialog box, where you can specify the action for Call Router to take if no match is found in the rules or in the database.



**Default Routing Action** options: No Action, Goto Top Level, Repeat Current Level, Call to Extension/Workgroup, Call to

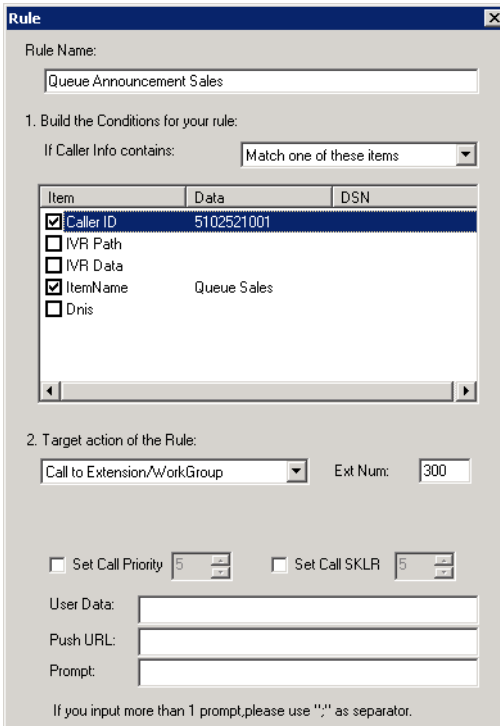


Operator, Dial by Name, Collect Extension, Directory Service, Record Message (specify target data in accompanying text box), Mailbox Access, Disconnect, System Callback, Collect Digits (specify fields in accompanying Collect Digit dialog box), Other DDR Application (specify target data in accompanying text box), Play WG Queue Status (specify target data in accompanying text box).

## Creating Route Rules

To create a route rule,

1. Select **Operation > Route Rule**.
2. Click the **Add** button to open a new Route Rule or **Modify** to modify an existing rule in the **Rules List** dialog box.



**Rule**

Rule Name: Queue Announcement Sales

1. Build the Conditions for your rule:

If Caller Info contains: Match one of these items

Item	Data	DSN
<input checked="" type="checkbox"/> Caller ID	5102521001	
<input type="checkbox"/> IVR Path		
<input type="checkbox"/> IVR Data		
<input checked="" type="checkbox"/> ItemName	Queue Sales	
<input type="checkbox"/> Dnis		

2. Target action of the Rule:

Call to Extension/WorkGroup Ext Num: 300

Set Call Priority 5  Set Call SKLR 5

User Data:

Push URL:

Prompt:

If you input more than 1 prompt, please use ";" as separator.

3. In the **Rule Name** field, enter or modify the rule name.
4. Select the data to match against routing rules.
  - **If Caller Info contains** - lets you select Call Route Request data to match against the customer record.

- a) Select **“Match one”** or **“Match all”** from the drop-down list.
- b) Select the items you want.
- c) Click in the **Data** column and type to specify the data.

To manually specify data for an item, right-click the item, select **Input data** and enter information in the column.

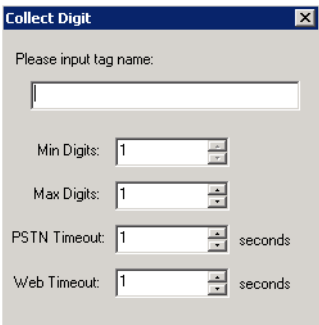
- Caller Entered Digits must be numeric only.
- You can enter **“\*”** as a wildcard character for any length of digits, or **“?”** for a single digit.

For example, if you specify Call ID Data **“510252\*,”** this will match all Caller IDs 510-252-xxxx. If you specify Call ID Data **“510252????,”** this will match all Caller IDs 510 252-xxxx.

- To specify data from an existing database, right-click the item, select **From user database,** and enter information in the **DataSource** dialog box.
5. Select a **Target action** for Call Router to perform when Call Route Request data matches this record.

**Target action** options: No Action, Goto Top Level, Repeat Current Level, Call to Extension/Workgroup, Call to Operator, Dial by Name, Collect Extension, Directory Service, Record Message (specify target data in accompanying text box), Mailbox Access, Disconnect, System Callback, Collect Digits (specify fields in accompanying Collect Digit dialog box; see below), Other DDR Application (specify target data in accompanying text box), Play WG Queue Status (specify target data in accompanying text box; see **Note** below), Route by Query Result.

**Collect Digit Dialog Box**



- **Tag name** - for example, **“password”** (gathered from a response to an Auto Attendant prompt or another AltLink Plus application)

- **Minimum Digits** and **Maximum Digits** to collect
- **PSTN** and **Web Timeout** values

**Note:** **Play WG Queue Status** - if you select “Play WG Queue Status,” Advanced Call Router must log on as a workgroup extension with password (**View > Show Workgroup Status > Add**) and Call Router’s virtual extension and password. (The virtual extension that Call Router uses does not have to be a member of the workgroup.) Specify this workgroup extension in the textbox that appears when you select **Play WG Queue Status**. (See “Queue Announcements” on page 12.)

If you want to apply the “**Play WG Queue Status**” Target action to several different workgroups, you must create separate rules for each.

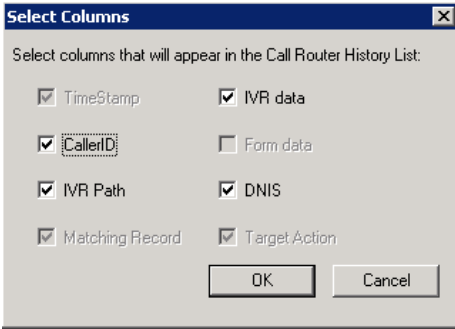
6. Enter optional data to match against the routing rule, and click **OK**.
  - **Set Call Priority** – Check the box and choose a call priority level.
  - **Set Call SKLR** – Check the box and choose an SKLR level.
  - **User Data** - Gathered from a response to an Auto Attendant prompt or another AltLink Plus application, or the text an agent typed in the User Data dialog box using the method DISP=
  - **Push URL** (AltWeb only).
  - **Prompt** – The prompt to play to the callee.

## Viewing Advanced Call Router History Menu

The Advanced Call Router window gives a history of all incoming trunk calls to Advanced Call Router.

To specify Call Router History window content,

1. Choose **View > Select Column**.
2. Select the following columns to display in the Call Router history window:
  - Caller ID
  - IVR Path
  - IVR data
  - DNIS



### Call Route Request Data

The “Call Router Request” message sent by MAXCS to Call Router contains data about the incoming call, which Call Router attempts to match against your routing rules. Call Route Request data consists of Caller ID, IVR Path, IVR data and DNIS, all collected via real-time monitoring.

TimeStamp	Caller ID	IVR Path	IVR Data	Dnis
16:09:41-10/09/2006		20&1&	dealerid=...	
16:09:30-10/09/2006		1e&1&	dealerid=...	

**Note:** IVR Path shows the Auto Attendant assignment for the workgroup that receives the call. If the workgroup’s AA assignment is 5, this item shows “0 & 5”; if the AA assignment is 3, the item shows “0 & 3,” and so on. The “0” indicates transfer to an Auto Attendant.

### Call Route Response Data

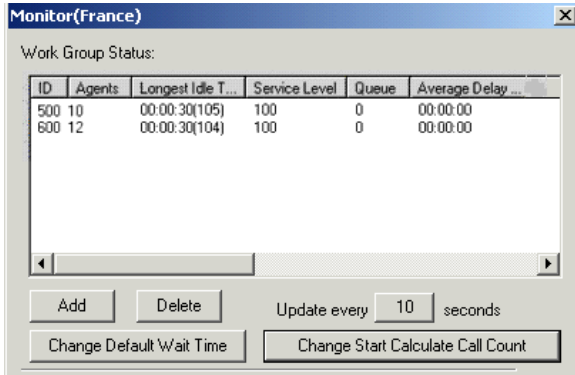
The “Call Route Response” message, sent from Call Router to MAXCS, contains the search results of the Call Route Request Message. In the Call Router History window, this data shows how Call Router handled each call. Call Route Response data includes Matching Record (routing rule Call Router referred to for call routing) and Result (how and where the call was routed), all collected via real-time monitoring.

mp	Caller ID	IVR Path	IVR Data	Dnis	Matching Record	Result
-10/09/2006		20&1&	dealerid=...		VerifyCaseNumFinAgMon...	Call to Extension/Wor
-10/09/2006		1e&1&	dealerid=...		VerifyDealerId_TotTime	Call to Extension/Wor

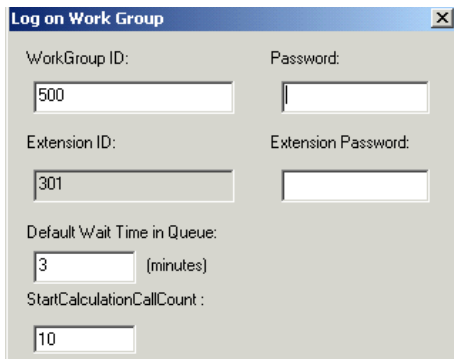
**Note:** If no match is found between the Call Route Request Data and the routing rules, the call is routed according to the business rules that check monitored workgroups for the longest available agent, maximum service level, and minimum expected delay.

## Show Workgroup Status

To view real-time data on incoming trunks to workgroup, select **View > Show Workgroup Status**.



- The main window box displays the following workgroup fields: **ID**, **Agents**, **Longest Idle Time**, **Service Level**, **Queue**, **Average Delay** and **Default Wait Time**.
- **Add** button – Click **Add** to log on to a workgroup whose incoming trunk call data you want to monitor.



Enter the workgroup extension as the **WorkGroup ID** and **password**, and enter the virtual extension's **password**. In the field for **Default Wait**

**Time in Queue**, type in the desired minutes. (By default, the **Extension ID** field is grayed out.)

- **Delete** button – click **Delete** to remove the selected workgroup from the display.
- **Change Default Wait Time** – click this button to change the default anticipated wait time associated with the workgroup queue.

**Note:** The workgroup to which incoming trunk calls will be routed via Call Router must be assigned to the Auto Attendant whose **Action** is set to “Avd - Advanced Call Router,” with **Ext Num** set to the virtual extension you use to start Call Router. For information on configuring Auto Attendants, refer to the “Auto Attendant Configuration” chapter of the *MAXCS Admin Manual*.

If you want to announce queue status to callers (**Target action** of any routing rule is “Play WG Queue Status,”) complete the **Virtual Extension ID** and **Virtual Extension** password fields using the workgroup agent extension (and its password) specified in the rule.

To log on to multiple workgroups:

- Click **Add** again and enter the next Workgroup ID and Password.
- **Change Start Calculate Call Count** – click this button to change the starting point for the number of calls to be reached for Call Router to start calculating call data.

## Clearing Advanced Call Router History Data

To clear data from the Advanced Call Router History window,

1. Go to the directory “Program Files\Altigen\Call Router” and locate the **Call Router.csv** file.
2. Open **Call Router.csv** and delete all contents.

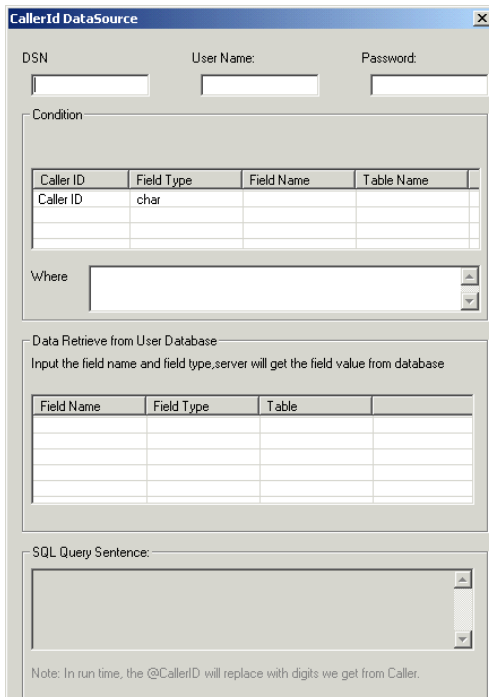
**Note:** Use Notepad to make this change. Do not use Microsoft Excel, because deleting data and saving the file using Excel will not save the file in the correct format.

3. Save and close **Call Router.csv**.

## Additional Advanced Call Router Features

### Building SQL Queries

To build an SQL query that Call Router will send to your database, use the **CallerId Datasource** dialog box. The customer information retrieved from your database will be used in the routing rule.



CallerId DataSource

DSN:  User Name:  Password:

Condition

Caller ID	Field Type	Field Name	Table Name
Caller ID	char		

Where:

Data Retrieve from User Database

Input the field name and field type, server will get the field value from database

Field Name	Field Type	Table

SQL Query Sentence:

Note: In run time, the @CallerID will replace with digits we get from Caller.

To open the Datasource dialog box, right-click on a data **Item** you want to specify using information from an existing database. Select **From user database**:

To build a SQL query:

1. Enter User Name and Password information for the database.
2. Enter information for the database you are querying against. For example:

**DSN** – BankAccount

**Table Name** – AccountBalance

**Matched Field Name** – CustomerPhoneNumber

**Matched Field Data Type** – char

Note: as you build the query, the **SQL query sentence** will appear in the window at the bottom.

3. Specify the condition for this query.

- a. Select the **Caller Match Item** data for this query – **Caller ID, IVR Path, DNIS, Item name** or **IVR data**.
  - b. Add any additional condition. For example Where - && Balance>1000
4. Click **OK**. You will be returned to the **Rule** dialog box, where the SQL query will be shown in the **Data** column and the database will be shown in the **DSN** column.

## Queue Announcements

**Note:** Queue announcements can now be done directly through MAXCS. Or you may use Advanced Call router for this function if you want.

If you use Advanced Call Router to inform callers of their position in a workgroup queue, there are two requirements:

- 1. In Call Router, you must create a rule with Target action “Play WG Queue Status.” In addition, enter an Item Name that matches the name of the Auto Attendant’s “Advanced Call Routing” name. The workgroup extension information you specify in the rule must also be entered when Call Router logs on in the Monitor window. Thus, it is a **requirement** to use the same virtual agent extension if you are writing several different queue announcement rules.
- 2. In MaxAdministrator, you must configure one of the Auto Attendant numbers to which Call Router is assigned to “Advanced Call Router.” 1) Enter the same “Item Name” you use in the rule discussed immediately above. 2) Replace the “No Action” level with “Call – to Ext./Workgroup,” and enter the workgroup extension number. For further information on configuring Auto Attendants, see the *MAXCS Admin Manual* and the *AltAPI Programmer Guide*.

If your organization has multiple workgroups and you want queue announcement for several or all of them, you must create separate rules for each, with workgroup extension information pertinent to each workgroup.

**Example:**

Suppose you use virtual extension 700 to log in to Call Router, and you have two workgroups, Sales and Support, with the following agent and workgroup extensions:

	Sales	Support
<b>Workgroup extension number</b>	500	600
<b>Call Router virtual extension number</b>	700	700

For both workgroups, you want Call Router to check incoming calls for Caller ID and IVR Path, and to play the WG queue status if a match is found and all agents are busy.



In MaxAdministrator, you configure the Auto Attendant to which Call Router is assigned as shown below. (The example uses Auto Attendant 2.) Note that you must enter a different Item Name for each level.

0 - expand tree

- 1 - data routing 700 (Queue Sales)
  - & - to extension 500
- 2 - data routing 700 (Queue Support)
  - & - to extension 600
- 3 - no action
- 4 - no action
- 5 - no action
- 6 - no action
- 7 - no action
- 8 - no action
- 9 - no action
- 0 - to operator
- \* - repeat level
- # - mailbox access
- T - to operator

Item: 01

Item Name: Queue Sales

Prompt: [ ]

Push URL: [ ]

Set Call Priority: 5

Set Call SKLR: 5

Actions: Adv. - Advanced Call Router

Ext Num: 700 - Call Router

Timeout: 7 seconds

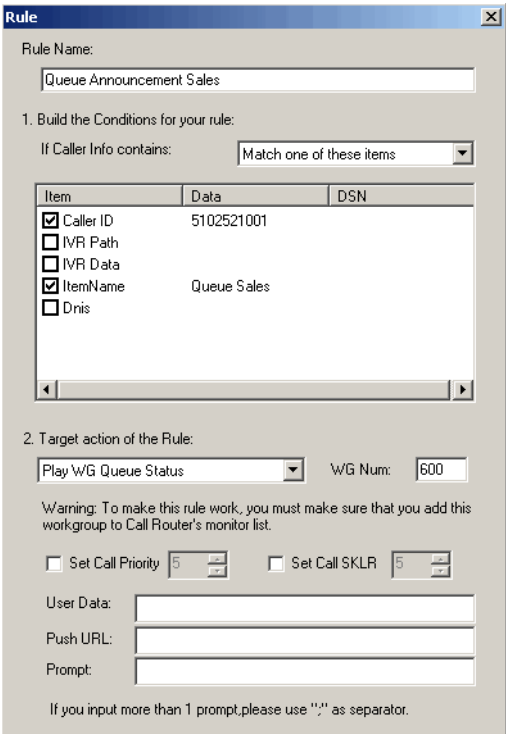
The third-party application must login as a VIRTUAL extension. If system could not connect to the application, AA will go to the next level.

Hide 'No Action' Items

OK Cancel Apply Help

For Sales, you create a rule as shown below.

Additional Advanced Call Router Features



Rule

Rule Name: Queue Announcement Sales

1. Build the Conditions for your rule:

If Caller Info contains: Match one of these items

Item	Data	DSN
<input checked="" type="checkbox"/> Caller ID	5102521001	
<input type="checkbox"/> IVR Path		
<input type="checkbox"/> IVR Data		
<input checked="" type="checkbox"/> ItemName	Queue Sales	
<input type="checkbox"/> Dnis		

2. Target action of the Rule:

Play WG Queue Status WG Num: 600

Warning: To make this rule work, you must make sure that you add this workgroup to Call Router's monitor list.

Set Call Priority 5  Set Call SKLR 5

User Data:

Push URL:

Prompt:

If you input more than 1 prompt, please use ";" as separator.

Similarly, for Support, you create a rule as shown below.

**Rule**

Rule Name:

1. Build the Conditions for your rule:

If Caller Info contains:

Item	Data	DSN
<input type="checkbox"/> Caller ID		
<input type="checkbox"/> IVR Path		
<input checked="" type="checkbox"/> IVR Data		
<input checked="" type="checkbox"/> ItemName	Queue Support	
<input type="checkbox"/> Dnis		

2. Target action of the Rule:

WG Num:

Warning: To make this rule work, you must make sure that you add this workgroup to Call Router's monitor list.

Set Call Priority   Set Call SKLR

User Data:

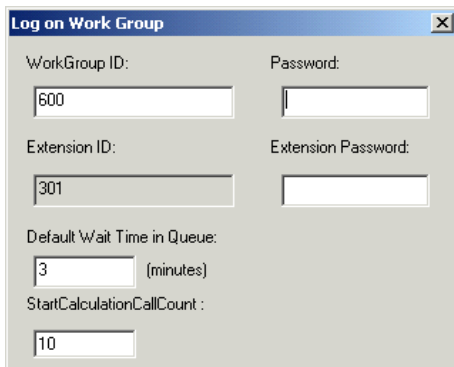
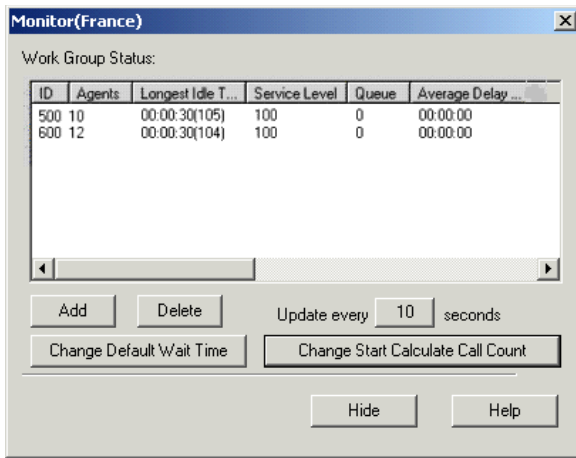
Push URL:

Prompt:

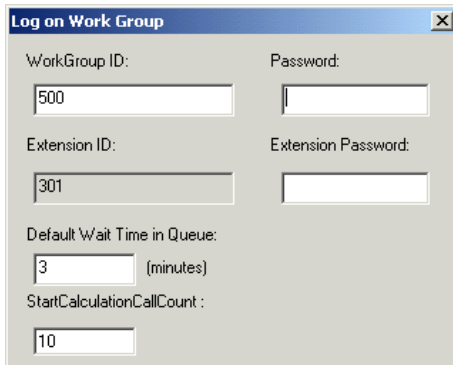
If you input more than 1 prompt, please use ";" as separator.

In the Monitor window, click **Add** to log on to Sales, entering both the workgroup extension & password and the virtual extension & password you specified in the "Auto Attendant Sales Queue Announcement" rule:

## Additional Advanced Call Router Features



In the Monitor window, click **Add** to log on to Support, entering both the workgroup extension & password and the virtual extension & password you specified in the “Auto Attendant Sales Queue Announcement” rule:



Log on Work Group

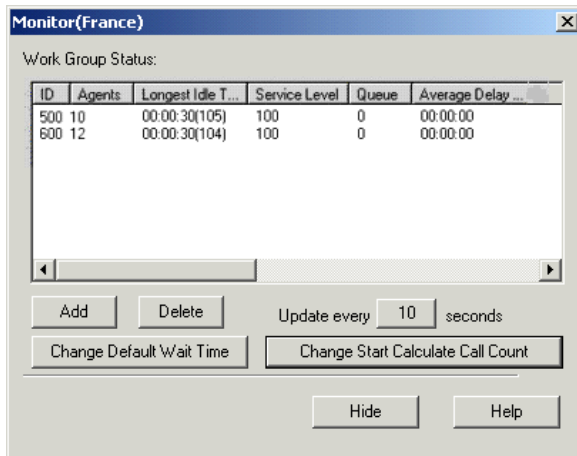
WorkGroup ID:  Password:

Extension ID:  Extension Password:

Default Wait Time in Queue:  (minutes)

Start Calculation Call Count:

The Monitor window shows that Call Router is logged on to both workgroups. Calls to each workgroup will be checked against the rules and will trigger a queue announcement if a match is found and all agents are busy.



Monitor(France)

Work Group Status:

ID	Agents	Longest Idle T...	Service Level	Queue	Average Delay ...
500	10	00:00:30(105)	100	0	00:00:00
600	12	00:00:30(104)	100	0	00:00:00

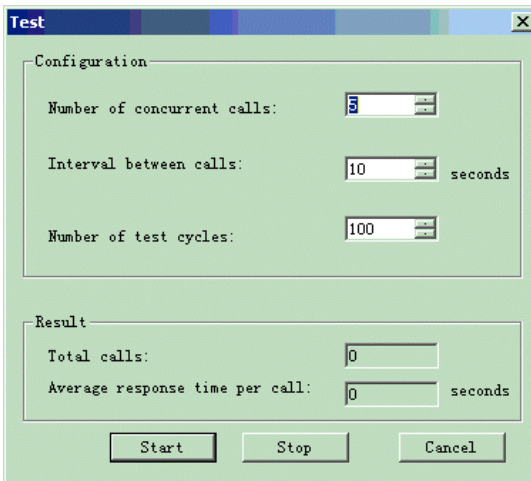
Update every  seconds

## Testing Call Router

To test the performance of Call Router, you can access a test tool from the Call Router main menu. Call Router must be stopped in order to run the test.

To test Call Router,

1. With Call Router function stopped, go to **Test** in the Tool drop-down list of the Call Router main menu for the **Test** dialog box.



The image shows a dialog box titled "Test" with a close button (X) in the top right corner. The dialog is divided into two main sections: "Configuration" and "Result".

**Configuration section:**

- "Number of concurrent calls:" with a text input field containing the value "5".
- "Interval between calls:" with a text input field containing "10" and the unit "seconds" to its right.
- "Number of test cycles:" with a text input field containing "100".

**Result section:**

- "Total calls:" with a text input field containing "0".
- "Average response time per call:" with a text input field containing "0" and the unit "seconds" to its right.

At the bottom of the dialog, there are three buttons: "Start", "Stop", and "Cancel".

2. In the **Configuration** fields, you can input the following test parameters:

- **Number of concurrent calls**
- **Interval between calls**
- **Number of test cycles**

For example, inputting **5** for **concurrent calls**, **3** for **interval between calls**, and **4** for **test cycles** means that every 3 seconds, there will be 5 concurrent call requests to Call Router. Total cycles of concurrent requests will be 4 times.

3. After inputting the test parameters, click **Start**. During the test, you can click **Stop** to stop the test. The title of the **Test** dialog box will be shown as "**Test(Started)**" while running.

**Test(Started)**

Configuration

Number of concurrent calls:

Interval between calls:  seconds

Number of test cycles:

Result

Total calls:

Average response time per call:  seconds

The total calls processed and average time per call will be updated in real-time during the test. You will know how many calls were processed and the average response time per call at that time.

- After the test has finished, the title of the **Test** dialog box will be shown as "*Test(Stopped)*."

**Test(Stopped)**

Configuration

Number of concurrent calls:

Interval between calls:  seconds

Number of test cycles:

Result

Total calls:

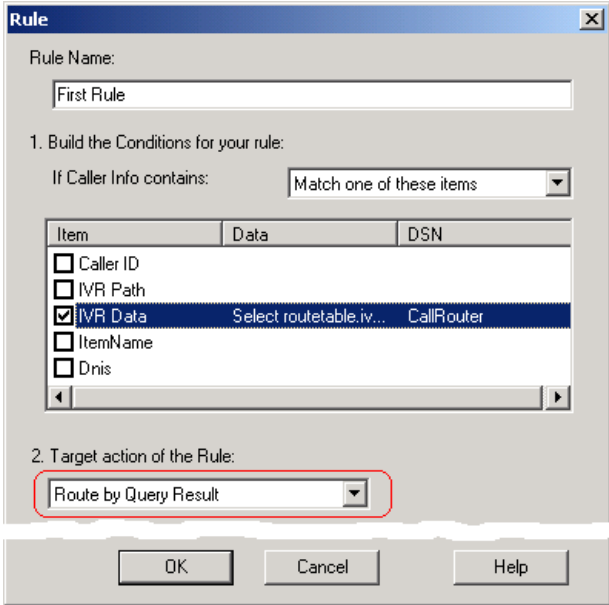
Average response time per call:  seconds

- The **Total calls** that Call Router processed and **Average response time per call** of this test will be shown in the **Result** fields.

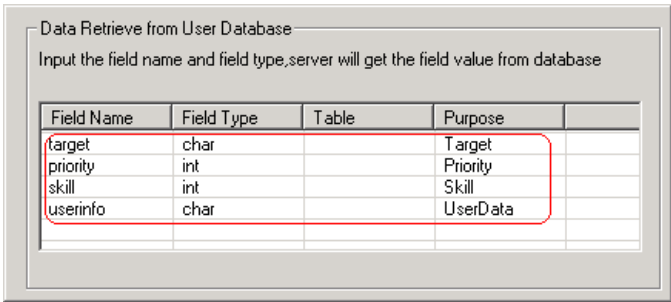
# Route By Query Result

The routing target information can be retrieved from the database record. This means that customers need to create (and maintain) far fewer rules to process calls.

To accomplish this, rules have an additional Target action, *Route by Query Result*, as shown in the following figure.



Some additional fields will need to be configured in the *Data Source* panel when using this Target action.





A new column, *Purpose*, is now included, to retrieve data for multiple data fields. It offers four options:

- **Target** – Retrieves data for the call routing target (an extension number or group number); this option is required for the *Route by Query Result* action.
- **Priority** – Retrieves data for the call priority value (optional)
- **Skill** – Retrieves data for the call skill value (optional)
- **UserData** – Retrieves data from the SQL query result and assigns that data to the UserData field. UserData can be displayed in MaxAgent and can be used by the SDK.

With these new options, Advanced Call Router can retrieve data from the database to set the call transfer target, priority, skill level, and user data, so that one rule can perform multiple actions.

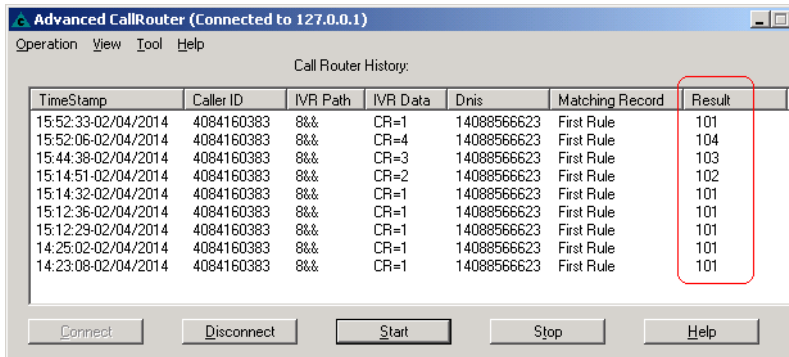
When Advanced Call Router uses call information (Caller ID, IVR input, ItemName, or DNIS) to query the database, it can receive one of the following results:

- **No match** – No matching records are found; Advanced Call Router will continue to the next rule.
- **One match** – One matching record is found; Advanced Call Router will set the call properties (Priority, Skill, and UserData) if configured, and then will route the call according to the target number in the record.
- **Multiple matches** – More than one matching record was found; Advanced Call Router will set the call properties (Priority, Skill, and UserData) if configured, and route the call according to the target number in the *first record*.

While configuring rules, be aware of the following behavior:

- If the target extension does not exist, then Advanced Call Router will behave as if no match was found, and continue to the next rule.
- If the Priority or Skill value is out of range (1-9), then the priority and skill level will not be set. Instead, the original priority and skill level will be used for the call.
- If the query statement or the next rule is configured incorrectly, then Advanced Call Router will behave as if no match was found and will continue to the next routing rule. If the last rule is reached and no match is found, then the default route will be used.

The next figure shows an example where calls come in with different IVR tags. Advanced Call Router searches the database and then retrieves *Target field* data for the destination extension.



## Routing Configuration Examples

This section contains three examples:

- “Example: Single Table, Single Purpose Field” on page 22
- “Example: Single Table, Multiple Purpose Fields” on page 24
- “Example: Multiple Tables” on page 26

### Example: Single Table, Single Purpose Field

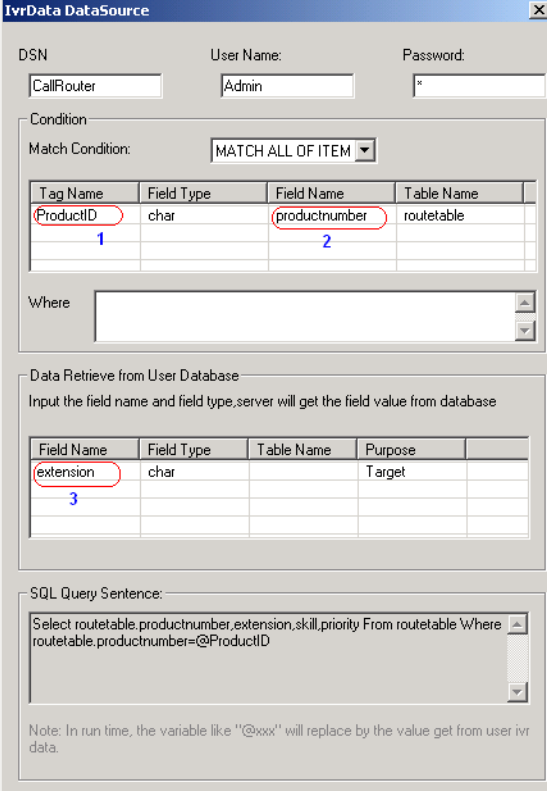
This example illustrates a configuration for a single table, which is designed as follows:

Field Name	Field Type	Description
ProductNumber	Text	Source data that Advanced Call Router will search for. The caller could enter this string through the Auto Attendant.
Extension	Text	The destination extension to which the call will be routed.

Here is an example of the data in this table (the table name is *RouteTable*):

Product Number	Extension
5001	101
5002	102
5003	103

In this scenario, the call router data source could be configured as shown in the following figure:



**IvrData DataSource**

DSN: CallRouter      User Name: Admin      Password: \*

Condition

Match Condition: MATCH ALL OF ITEM

Tag Name	Field Type	Field Name	Table Name
ProductID 1	char	productnumber 2	routetable

Where

Data Retrieve from User Database

Input the field name and field type,server will get the field value from database

Field Name	Field Type	Table Name	Purpose
extension 3	char		Target

SQL Query Sentence:

```
Select routetable.productnumber,extension,skill,priority From routetable Where
routetable.productnumber=@ProductID
```

Note: In run time, the variable like "@xxx" will replace by the value get from user ivr data.

- 1 – Use "ProductID" for the IVR tag. Advanced Call Router uses this IVR input data as the source to search the database.
- 2 – Use "productnumber" for the Product Number field value. The first record that matches the entered product number will be used.
- 3 – Use "extension" for the routing target. This tells Advanced Call Router to retrieve this field from the matching record and use that data as the call's routing target.

Advanced Call Router will use the IVR tag name called *ProductID* to search the *ProductNumber* field in the *RouteTable* table. When a matching record is found, Advanced Call Router will use the data in the *Extension* field as the call's routing target. In this scenario, the automated SQL query statement suffices; no additional search criteria are needed for the target information.

## Example: Single Table, Multiple Purpose Fields

In this example, assume we have a single table, designed as follows:

Field Name	Field Type	Description
ProductNumber	Text	Source data that Advanced Call Router will search for. The caller could enter this string through the Auto Attendant.
Extension	Text	The destination extension to which the call will be routed.
Priority	Number	The call priority.
Skill	Number	The required skill level for the agent.

Here is an example of the data in this table (the table name is *RouteTable*):

Product Number	Extension	Priority	Skill
5001	101	1	4
5002	102	3	5
5003	103	5	6

The call router data source could be configured as shown in the following figure:

**IvrData DataSource**

DSN:  User Name:  Password:

Condition

Match Condition:

Tag Name	Field Type	Field Name	Table Name
ProductID <b>1</b>	char	productnumber <b>2</b>	routetable

Where:

Data Retrieve from User Database

Input the field name and field type, server will get the field value from database

Field Name	Field Type	Table Name	Purpose
extension	char		Target
skill <b>3</b>	int		Skill
priority	int		Priority

SQL Query Sentence:

```
Select routetable.productnumber,extension,skill,priority From routetable Where routetable.productnumber=@ProductID
```

Note: In run time, the variable like "@xxx" will replace by the value get from user ivr data.

- 1 – Use "ProductID" for the IVR tag. Advanced Call Router uses this IVR input data as the source to search the database.
- 2 – Use "productnumber" for the Product Number field value. The first record that matches the entered product number will be used.
- 3 – Use "extension" for the routing target, "skill" for the call skill level, and "priority" for the call priority. Advanced Call Router retrieves these values from the matched record and uses the values to route the call and set call properties.

In this case, the program-generated query statement is enough; no additional search criteria are needed.

### Example: Multiple Tables

In this example, assume we have two tables: *RouteTable* for route information and *AgentTable* for agent information. Here are the fields in the *RouteTable* table:

Field Name	Field Type	Description
ProductNumber	Text	Source data that Advanced Call Router will search for. The caller could enter this string through the Auto Attendant.
Destination	Text	The destination to which the call will be routed.

Here is an example of the data in this table:

Product Number	Destination
5001	1001
5002	1002
5003	1003

Here are the fields in the *AgentTable* table:

Field Name	Field Type	Description
Destination	Text	The transfer destination.
Extension	Text	The destination extension number.
Priority	Number	The call priority.
Skill	Number	The required skill level for the agent.

Here is an example of the data in this table:

Destination	Extension	Priority	Skill
1001	101	1	4
1002	102	3	5
1003	103	5	6

Both tables have a "Destination" field, which will be used to link records of the two tables.

The call router data source could be configured as follows:

**IvrData DataSource**

DSN: CallRouter      User Name: Admin      Password: \*

Condition

Match Condition: MATCH ALL OF ITEM

Tag Name	Field Type	Field Name	Table Name
ProductID	char	productnumber	1 routetable

Where: and routetable.destination = agenttable.destination  
3

Data Retrieve from User Database

Input the field name and field type, server will get the field value from database

Field Name	Field Type	Table Name	Purpose
extension	char	2 agenttable	Target
skill	int	agenttable	Skill
priority	int	agenttable	Priority

SQL Query Sentence:

```
Select
routetable.productnumber,agenttable.extension,agenttable.skill,agenttable.prio
rity From routetable,agenttable Where routetable.productnumber=@ProductID
and routetable.destination = agenttable.destination
```

1 – Use "routetable" in the Match Conditions list. Advanced Call Router will search IVR data from this table.

2 – Use "agenttable" in the Data Retrieve from User Database list. This specifies the data to be retrieved from the second table.

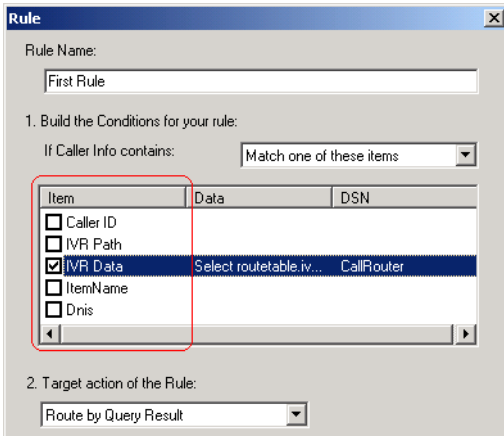
3 – Enter additional search criteria in the "Where" clause. This will be used to link AgentTable with RouteTable.

**Note:** You can also create a view, to make the SQL query simpler.

## Route by Query Results Limitation

When using *Route by Query Result*, multiple match conditions (IVR data, caller ID, DNIS, etc) are not supported.

# Testing SQL Server Database



## Testing SQL Server Database

To test SQL server database access performance of Call Router:

1. Add a database for the SQL server.

For example, for a database “calldb” and table name “RTMCALL”, 10,000 records are added to the table.

NodeID	SessionID	InternalCall	Direction	StartTime	EndTime	CallerType	CallerPad
1	1039470405	0	2	1039575519	1039575521	12	0223
1	1039470406	0	2	1039575527	1039575529	12	0223
1	1039470407	0	2	1039575535	1039575537	12	0223
1	1039470408	0	2	1039575543	1039575545	12	0223
1	1039470409	0	2	1039575551	1039575553	12	0223
1	1039470410	0	2	1039575559	1039575561	12	0223
1	1039470411	0	2	1039575567	1039575569	12	0223
1	1039470412	0	2	1039575575	1039575577	12	0223
1	1039470413	0	2	1039575583	1039575585	12	0223
1	1039470414	0	2	1039575591	1039575593	12	0223
1	1039470415	0	2	1039575599	1039575601	12	0223
1	1039470416	0	2	1039575607	1039575609	12	0223
1	1039470417	0	2	1039575615	1039575617	12	0223
1	1039470418	0	2	1039575623	1039575625	12	0223
1	1039470419	0	2	1039575631	1039575633	12	0223
1	1039470420	0	2	1039575639	1039575641	12	0223
1	1039470421	0	2	1039575647	1039575649	12	0223
1	1039470422	0	2	1039575655	1039575657	12	0223
1	1039470423	0	2	1039575663	1039575665	12	0223
1	1039470424	0	2	1039575671	1039575673	12	0223
1	1039470425	0	2	1039575679	1039575681	12	0223
1	1039470426	0	2	1039575687	1039575689	12	0223
1	1039470427	0	2	1039575695	1039575697	12	0223
1	1039470428	0	2	1039575703	1039575705	12	0223

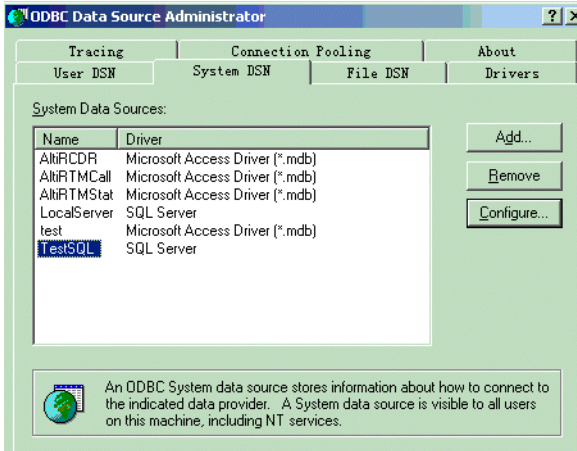
**Note:** Because the data of DDR request has been hard coded, if you want a rule match, you need to add the record to the table. The caller ID of test request will be “1039470405.” IVR Path of test request will be “0&9.”

To use the “SessionId” field in the table to match caller ID of the request, you must add a record to the table and set the SessionId



value to “1039470405”. Then during match process, the matched result will be true.

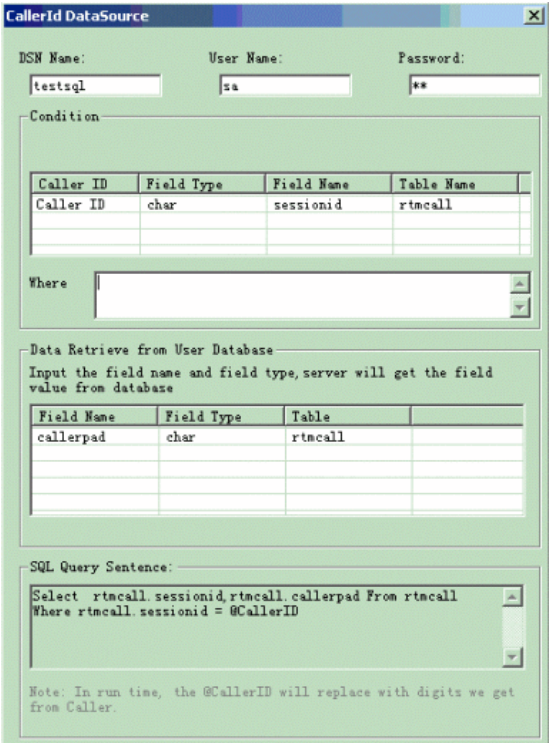
2. Add a data source to “ODBC” configuration in Windows.



The “TestSQL” is the newly added data source. This data source is connected to the SQL server’s “calldb” database.

3. In Call Router, add a rule to access database.

Testing SQL Server Database



You can change the rule configuration to fit your own conditions.

During the test, Call Router will use this rule to match the DDR request. When using this rule, Call Router will access the SQL server to execute the SQL query.