

IP Office 8.0

Implementing IP Office Customer Call Reporter

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Chapter 1.

What's New in IP Office Customer Call Reporter 8.0

1. What's New in IP Office Customer Call Reporter 8.0

This version of IP Office Customer Call Reporter is supported with IP Office Release 8.0.

- **Statistics**
  The following changes have been made for the statistics:
  - **SYSTEM Values**
    The Talk statistics and the Agent Productivity factor are now available as System values.
  - **Presented Calls Statistics**
    A new statistic is available to record calls that have reached to a particular hunt group or an agent. This statistic is now available for the system, queues and agents. It is the sum of the existing statistics available for agents and queues.
- **Reports**
  The following changes have been made to reports:
  - **Copying a Report Template**
    A supervisor can copy a report template from another supervisor. Supervisors can now use the Copy icon under Recent reports to copy report templates that have been created by other supervisors. This process will reduce the time taken to install and configure similar report templates.
  - **Agent Productivity Factor**
    The Agent productivity factor is now reported in the Agent Time Card Performance section.
  - **Agent privacy**
    IP Office Customer Call Reporter now provides this feature to hide agent's personal information, for example the last three digits of the telephone number, on Call Details Report and Trace Report.
  - **Average Answer Time Calculation for Call Summary Report**
    The Average Answer Time is independent from the Average Answer Time threshold. The system counts all the calls received for a particular agent or a queue irrespective of the threshold setting that you have set for Call Summary Report. IP Office Customer Call Reporter calculates the average answer time for all the calls received within the time interval set in the **Working Hours** field.
  - **15 minutes and 30 minutes Grouping**
    Following the same format as hourly grouping, IP Office Customer Call Reporter now allows to group call records in 15-minute and 30-minute slabs. This grouping is only available for Call Summary and Call Details reports.
  - **Custom Reports**
    In addition to the standard report types, supervisors can also create a customized report template in Microsoft Report Builder.
- **Other Features**
  The following changes have been made to other call features:
  - **Using DECT (R4) Phones**
    IP Office Customer Call Reporter now reports on both real-time and historical statistics on agents using the DECT (R4) telephones.

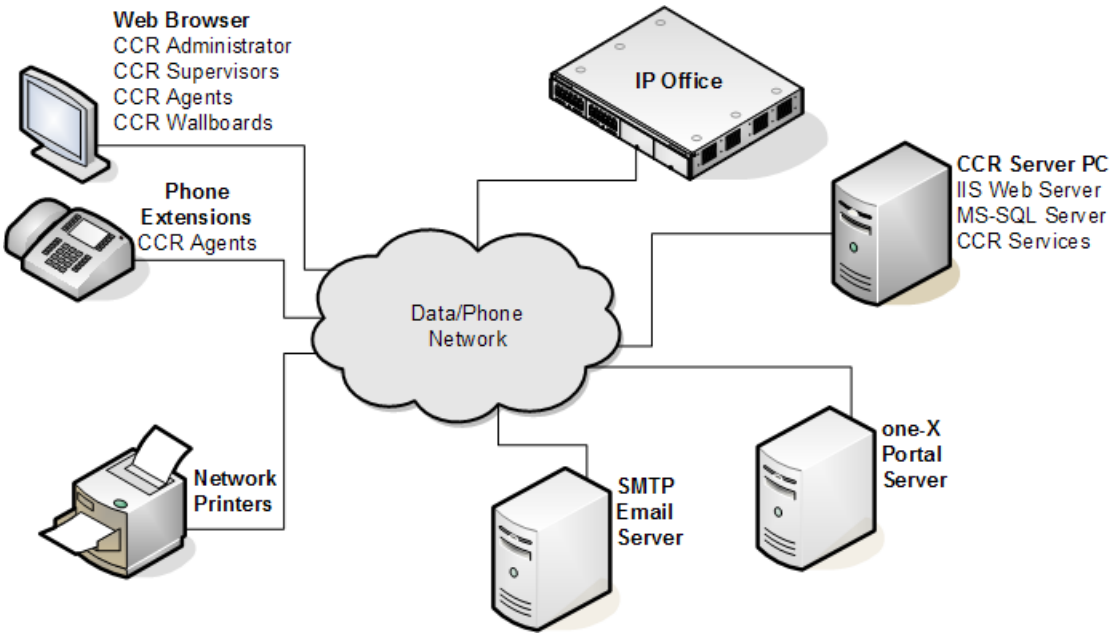
Chapter 2.

IP Office Customer Call Reporter

2. IP Office Customer Call Reporter

IP Office Customer Call Reporter is a call center application for providing both the display of current statistics and historical reports on the performance of agents and agent groups (queues).

The diagram below illustrates key components in a simple IP Office Customer Call Reporter installation.



- **IP Office Control Unit**
  IP Office Customer Call Reporter 8.0 is supported by all IP Office control units running IP Office Release 8.0 core software. The IP Office telephone system controls the distribution of calls and provides call information to the IP Office Customer Call Reporter system. The IP Office also stores the licenses used to allow IP Office Customer Call Reporter operation.
- **IP Office Customer Call Reporter Server computer**
  The main IP Office Customer Call Reporter server hosts a number of functions, some installed as part of IP Office Customer Call Reporter and others that must be pre-installed
  - **IIS Web Server**
    All users access the IP Office Customer Call Reporter using web browsers. This is done using Microsoft IIS on the IP Office Customer Call Reporter server computer. The IIS must be enabled and configured before IP Office Customer Call Reporter is installed.
  - **Microsoft SQL Database (MS-SQL)**
    The IP Office Customer Call Reporter server stores information in an MS-SQL database. IP Office Customer Call Reporter works with MS-SQL 2008. Typically, the database will be on the same computer as the IP Office Customer Call Reporter server application, however an MS-SQL database located on another server can be used if required. The MS-SQL database must be installed before IP Office Customer Call Reporter is installed. Different versions of MS-SQL are supported and guidance on the selection criteria are given in the Database Requirements 12 section.
  - **IP Office Customer Call Reporter Services**
    The IP Office Customer Call Reporter application itself consists of a number of services. In a simple installation they are all installed on the IP Office Customer Call Reporter server computer. For more advance installations some can be installed on separate server computers, see Distributed Installation 14.
- **SMTP E-mail Server**
  Access to an SMTP e-mail server is required for the e-mailing of reports and use of the forgotten password function.
- **Networked Printer**
  Reports can be viewed in a web browser or e-mailed to a user, either option allows the user to view and then print to any printer they can access from their computer. However, for automatic report printing the IP Office Customer Call Reporter server must be able to access the network printer selected during the report setup.
- **Web Browser Clients**
  IP Office Customer Call Reporter is accessed using web browsers. The user name and password used to log in determines the type of information that can then be displayed by the web browser and the functions that can be performed. The different types of log in are:
  - **Administrator**
    The administrator is able to configure various aspects of IP Office Customer Call Reporter operation and to access diagnostics information. The administrator also creates and manages the supervisor and wallboard login accounts. There is only one administrator account, the account being configured during installation.

- **Supervisors**
  Supervisors are able to view the status of queues and the agents in those queues. They can also run immediate reports and schedule automatic reports. If allowed by the administrator, the supervisor can also amend their own views and reset the view statistics for the whole system. The number of supervisors accounts (up to 30 supported) is controlled by IP Office licenses[14].
- **Agents**
  Once an agent logs in to a telephone extension on the IP Office system they start to receive calls on behalf of the hunt groups (queue) of which they have been configured as a member. In addition they can log in to IP Office Customer Call Reporter using a web browser. They can then see statistics for the queues to which they belong and their own statistics for calls handled on behalf of that queue. Agents cannot amend the views they see or run reports. The number of agent able to log in is control by licenses (up to a total of 150).
- **Wallboards**
  Logging in using a wallboard account display the same range of realtime statistics as available to supervisors but in a display designed for use on large wallboard monitors.

- **Licenses**
  IP Office Customer Call Reporter is a licensed application. Licensed are entered into the configuration of the IP Office system and are unique to the serial number of the Feature Key being used by that IP Office. The licenses set the number of agents that can be configured on the IP Office (up to a total of 150 agents) and the total number of supervisors and wallboards (up to 30 of each supported simultaneously).
- **Voicemail Server**
  IP Office Customer Call Reporter can provide voicemail reports for IP Office systems running IP Office Voicemail Pro. This can be installed on the same server as IP Office if limited to 16 voicemail ports.
- **one-X Portal for IP Office Server**
  The IP Office Customer Call Reporter feature for forcing the agent status requires the IP Office Customer Call Reporter server to be able to access a one-X Portal for IP Office for IP Office integration. The agents and supervisors do not need to be one-X Portal for IP Office users.

2.1 Summary

Feature		
Web Browsers	• Google Chrome 10 and later. • Mozilla Firefox 3.0 and later. • Windows Safari 4.0 and later. • Internet Explorer 8 and later.	IP Office Customer Call Reporter was designed and tested with the listed web browsers. If used with other any other browser a warning will be displayed but operation is not prevented. The following browser features must be enabled: • Javascript enabled. • Pop-ups allowed. Required for report viewing, realtime graph and help windows. • If audio for alarms has been enabled, an audio plug-in is required for user's browsers. Use Windows Media Player[3] or Quick Time. • Google Chrome and Firefox require a browser plug-in[4] to access Report Builder. The Firefox browser does not require this plug-in if the client machine has .NET installed. If .NET is unavailable, FFClickOnce is an alternative.
User Operating Systems	• Windows XP Professional SP2. • Windows Vista Ultimate . • Windows Vista Enterprise. • Windows Vista Business. • Windows Vista Home Premium.	Browser access is tested and supported on the listed operating systems. Only 32-bit versions of the operating systems are supported. Access from other operating systems is not precluded but has not been tested by Avaya and is therefore not supported by Avaya.
Agents	Up to 150.	The number of agents and supervisors usable is controlled by the number of licenses entered into the configurations of the IP Office system.
Supervisors	Up to 30.	
Administrator	1 only.	
IP Office Systems	IP Office Release 8.0.	A single IP Office. Minimum software level IP Office 8.0. IP Office Customer Call Reporter is only supported in an IP Office Small Community Network of IP Office 8.0 systems. IP Office Customer Call Reporter itself does not support SCN features such as remote hot desking of agent or distributed hunt groups. It can be used in conjunction with a single IP Office that is part of the SCN but it can only report on queues and agents on the one IP Office for which it has been configured during installation.
IP Office Connection	IP Office Customer Call Reporter connects to the IP Office over the LAN using an IP Office service user account. This account accesses the same interface as used by the IP Office System Status Application (SSA) and so reduces the number of possible SSA connections to the IP Office to 1. • **! WARNING** The IP Office's IP address is used to tag agent and queue data stored in the IP Office Customer Call Reporter database. If the IP Office's IP address or name is changed after installation, any existing data is still tagged with the previous IP address while new data will be tagged with the new IP address. This may result in reports including multiple entries for each agent and queue.	
Languages	For browser access and reports the supported languages are **Dutch**, **English (UK)**, **English (US)**, **French**, **German**, **Italian**, **Brazilian Portuguese**, **Russian** and **Spanish**. For embedded help the languages are **English**, **Brazilian Portuguese**, **French**, **German**, **Italian** and **Latin Spanish**.	
Voicemail Server	IP Office Customer Call Reporter Voicemail Reports require the IP Office to be using an IP Office Voicemail Pro server. This can be installed on the same computer as the IP Office Customer Call Reporter applications, however in that scenario support is limited to 16 voicemail ports.	

1. **Phone Support**
   IP Office Customer Call Reporter may create inaccurate reports if agents use the following devices:
   - T3 Series and T3 IP Series telephones.
   - Non-Avaya H323 telephones.
   - Non-Avaya SIP devices.
2. **Citrix Support**
   Supervisor and agent browser access to IP Office Customer Call Reporter from Citrix clients is supported. This does not include support for installation of the IP Office Customer Call Reporter application on the Citrix sever. IP Office Customer Call Reporter browser access has been tested with Citrix MetaFrame Presentation Server Client 4.0.
3. **Windows Media Player Support**
   When using a browser other than Internet Explorer, Windows Media Player may be supported by the addition of the Firefox Windows Media Play plug-in. This plug-in is available at http://port25.technet.com/pages/windows-media-player-firefox-plugin-download.aspx. Currently, this plug-in is useable with Google Chrome, Mozilla Firefox and Windows Safari.
4. **Browser Plugin Support**
   When using Google Chrome and Firefox as browsers, IP Office Customer Call Reporter supports a browser plug-in to access Report Builder.
   - If you are using the Firefox browser, you can access the plug-in at https://addons.mozilla.org/en-us/firefox/addon/ffclickonce/

- If you are using the Google Chrome browser, you can use the plug-in available at https://chrome.google.com/webstore/detail/eeifaoomkminpbeebjdmdojbhmagnncl

2.2 Database Requirements

IP Office Customer Call Reporter can use the following versions of Microsoft SQL (MS-SQL) as its database for storing information. IP Office Customer Call Reporter works with MS-SQL 2008.

- **Microsoft SQL Express Edition**
  This is the free to use edition of MS-SQL which can be downloaded from Microsoft at http://www.microsoft.com/downloads.
- **Microsoft SQL**
  The licensed version of MS-SQL is available in a number of different editions (Workgroup, Standard, Enterprise and Developer). The licensing for these is done using Microsoft licenses, not IP Office licenses. For full details of the different editions available refer to http://www.microsoft.com/sqlserver/2008/en/us/editions-compare.aspx.

The following general criteria can be used to determine which version of Microsoft SQL is required for an installation.

Feature		MS-SQL Express Edition	Other MS-SQL Editions
Licensing		Free	Licensed
Location	**On the IP Office Customer Call Reporter Server computer**	Yes	Yes
	On separate server computer	No	Yes
Supported Call Limit		500,000	No limit.[1]
Maximum Database Size[2]		10GB	No limit.[1]
Minimum Server RAM		1GB	3GB[3]
Automatic Backup Functions		Not Included	Included

1. A database size limit is defined as part of the database configuration.
2. For MS-SQL Express Edition the database size limit is fixed. For other editions IP Office Customer Call Reporter is able to adjust the size after giving a warning. See below for details.
3. The minimum server RAM depends on the particular licensed edition of MS-SQL.

Regardless of which edition of MS-SQL is used, it must be installed before the IP Office Customer Call Reporter components are installed. During installation of the IP Office Customer Call Reporter components, access to MS-SQL is required as part of the IP Office Customer Call Reporter installation.

What Happens When the Database Size Limit is Reached?

A maximum database size (by default 4GB) is configurable by the IP Office Customer Call Reporter administrator through their **System Settings** tab. Once the database has reached 75% of its maximum size, the IP Office Customer Call Reporter generates an alarm and displays it on the screen whenever users log in to IP Office Customer Call Reporter.

IP Office Customer Call Reporter generates an alarm at 80% and begins to take the actions required to allow it to continue recording new data. The action taken is to automatically erase the oldest 10% of data.

2.3 Server Computer

This section details the minimum requirements for IP Office Customer Call Reporter server computers.

- **Windows Operating System**
  The IP Office Customer Call Reporter services are supported on the following operating systems. Only 32-bit versions are supported unless stated otherwise.
  - Microsoft Windows Server 2003 SP2.
  - Microsoft Windows Server 2003 R2.
  - Microsoft Windows Small Business Server 2003 R2.
  - Microsoft Windows Server 2008 SP2 (32-bit and 64-bit)

- **IIS Web Server**
  IP Office Customer Call Reporter uses the IIS web server component of the operating system:
  - IIS V6 or higher.
  - It is important that IIS is installed and running before any .NET software packages are installed as these will install additional components if they detect IIS on the server. If .NET is already installed before IIS was enabled, then .NET should be reinstalled.
  - The **ASP.net** option for the IIS server must be set as ***Allowed***.
  - IP Office Customer Call Reporter only supports installation onto an IIS server running its default web site on port 80 (the default port).
  - IP Office Customer Call Reporter uses ***web.config*** files that are installed in its own virtual directories under the IIS default web server root. If another applications erroneously installs a web.config file in the IIS default web site's root directory, that web.config will affect all other applications using the IIS including IP Office Customer Call Reporter.

- **Hardware Requirements**
  The following are the minimum requirements for the computer hosting any components of the IP Office Customer Call Reporter server application.
  - **Processor:** Intel Pentium D945 Dual Core or AMD Athlon 64 4000+.
  - **RAM:** 2GB (4GB for optimum operation).
  - **Free Hard Disk Space:** 30GB.
  - **Additional:** CD or DVD drive for software installation.
  - If installing a licensed edition of MS-SQL on the IP Office Customer Call Reporter server computer, the separate requirements of the MS-SQL Edition must be meet.

Notes

1. The installer of the IP Office Customer Call Reporter Server platform must have Windows administrative rights to proceed with the installation. If the correct rights are not available a message appears informing the installer and the installation will be stopped.
2. The customer map functions require Internet access from both the server computer and the client computer.

2.4 Licenses

Use of IP Office Customer Call Reporter is licensed through licenses entered into the IP Office configuration. The table below lists the available licenses.

To support IP Office Customer Call Reporter, the IP Office Release 6 system must have **Preferred Edition** and **Advanced Edition** licenses. The **Advanced Edition** license also enables 1 customer service supervisor.

For system being upgraded to IP Office Release 6, IP Office Customer Call Reporter can alternately be enabled by a legacy **CCR Sup** license or a **CCC Supervisor** and **CCR CCC Upg** license.

License	Function
Customer Service Supervisor	The presence of at least one **Customer Service Supervisor** license is required to use IP Office Customer Call Reporter. Multiple licenses can be added to achieve the number of supervisors required up to 30 supervisors. Each license instance enables 1 supervisor account login and also 1 wallboard account login.
Customer Service Agent	Enables support for IP Office Customer Call Reporter agents. Multiple license can be added to achieve the number of agents required up to the maximum of 150 agents. One license instance is consumed for each IP Office Customer Call Reporter agent currently logged in on the IP Office system.
CCR CCC UPG	This license allows existing CCC licenses to be used for IP Office Customer Call Reporter, see Upgrading from CCC 14. The CCC licenses are used as follows: • **CCC Server -** Enables 1 supervisor, 1 wallboard and 5 agents. • **CCC Supervisors -** Enables the equivalent number of supervisors and the equivalent number of wallboards. • **CCC Agents -** Enables the equivalent number of agents.

2.5 CCC and Delta Server

The IP Office Compact Contact Center (CCC) is an application previously supported by IP Office for a similarly functions to IP Office Customer Call Reporter. It worked in conjunction with the IP Office Delta Server application to obtain call and agent activity data from the IP Office.

- For IP Office systems with IP Office Customer Call Reporter licenses installed, CCC is no longer supported. Provision of CCC licenses to the CCC system is disabled.
- Existing CCC license can be used with IP Office Customer Call Reporter if an **IP Office Customer Call Reporter CCC UPG** license is added to the IP Office configuration. See IP Office Customer Call Reporter Licenses 14.
- IP Office Delta Server is still supported but only for SMDR call logging output.
- A CCC database cannot be upgraded to an IP Office Customer Call Reporter database.

2.6 Small Community Network (SCN)

IP Office Customer Call Reporter itself does not support SCN features such as remote hot-desking of agent, distributed hunt groups, or centralized/distibuted Voicemail. It may be used in conjunction with a single IP Office that is part of the SCN but it can only report on queues and agents on the one IP Office for which it has been configured during installation. If Voicemail Pro is required for part of the call flow of the call center (Auto-Attendant, Queue Position, Voicemail report, Hunt Group mailboxes, Agent mailboxes, and so on), then the Voicemail Pro server must also be dedicated (not Distributed or Centralized) to the IP Office being monitored by IP Office Customer Call Reporter.

IP Office Customer Call Reporter will properly track calls that arrive at the monitored IP Office and will treat those as incoming calls. Those calls can be coming in through the SCN or the local PSTN connections. The call must then stay within the monitored IP Office to be properly tracked and reported on by IP Office Customer Call Reporter.

2.7 Distributed Installation

The IP Office Customer Call Reporter application consists of several components which in a simple installation are all installed on the IP Office Customer Call Reporter server computer.

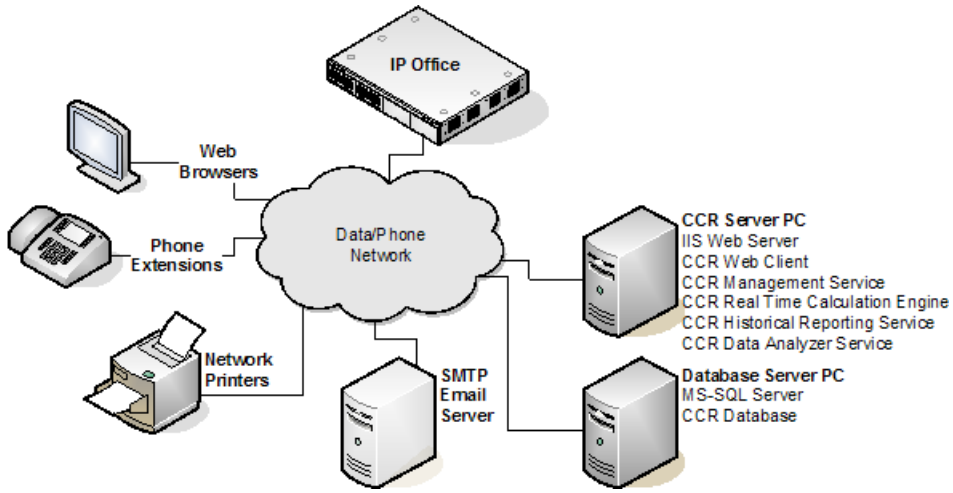
For advanced scenarios some components can be installed on other computers. The IP Office Customer Call Reporter application components listed in Maintenance and Diagnostics 59.

Currently, for IP Office Customer Call Reporter version 8.0, the only supported scenario for a distributed installation are scenarios where a licensed edition of MS-SQL is installed on a separate server computer.

Separate Database Server

In this scenario the MS-SQL used is a licensed edition of MS-SQL installed on another server computer. This requires the IP Office Customer Call Reporter Database component to be installed on the same computer as the MS-SQL 2008 database server before the remaining IP Office Customer Call Reporter components are installed on the IP Office Customer Call Reporter server computer.

Typically this type of installation would be used when the customer already has a server computer with a licensed edition of MS-SQL installed.



Installation Summary

1. Install MS-SQL on the SQL server.
2. Install the IP Office Customer Call Reporter software on the SQL server with all CCR components selected. During the installation, the IPOCCR Database component creates the IP Office Customer Call Reporter database within SQL.
3. Uninstall the IP Office Customer Call Reporter software from the SQL server. This action does not remove the IP Office Customer Call Reporter database created within SQL.
4. After installing the other pre-requisites, install the IP Office Customer Call Reporter software on the IP Office Customer Call Reporter server with the IPOCCR Database component de-selected. When the location of the SQL server is requested, browse to the remote SQL server location.

Chapter 3.

Installing Customer Call Reporter

3. Installing Customer Call Reporter

Read and understand this documentation before the IP Office Customer Call Reporter installation. In addition you must check the IP Office Technical Bulletins relevant for the IP Office Customer Call Reporter Software release and the IP Office software release.

Installation Process

The following list indicates the order in which IP Office Customer Call Reporter installation should be performed. It includes ensuring that you have collected the information required to complete the installation.

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Install the IP Office system and test it for correct operation before installing IP Office Customer Call Reporter.

- **! WARNING**
  The IP Office's IP address is used to tag agent and queue data stored in the IP Office Customer Call Reporter database. If the IP Office's IP address or name is changed after installation, any existing data is still tagged with the previous IP address while new data will be tagged with the new IP address. This may result in reports including multiple entries for each agent and queue.

Additional Configuration Steps

The following can be done at any stage during or after IP Office Customer Call Reporter installation. They relate mainly to the IP Office users and hunt groups need that need to be configured as IP Office Customer Call Reporter agents and queues.

1. **Configuring Busy Not Available Reason Codes** 53.
2. **Configuring IP Office Customer Call Reporter Agents** 50.
3. **Configuring IP Office Customer Call Reporter Queues** 52.
4. **Configuring After Call Work Controls** 54.
5. **IP Office Short Codes** 55.
6. **Button Programming** 55.
7. **Voicemail Report Setup** 56.

3.1 CCR Server Computer Requirements

This section details the minimum requirements for IP Office Customer Call Reporter server computers.

- **Windows Operating System**
  The IP Office Customer Call Reporter services are supported on the following operating systems. Only 32-bit versions are supported unless stated otherwise.
  - Microsoft Windows Server 2003 SP2.
  - Microsoft Windows Server 2003 R2.
  - Microsoft Windows Small Business Server 2003 R2.
  - Microsoft Windows Server 2008 SP2 (32-bit and 64-bit)

- **IIS Web Server**
  IP Office Customer Call Reporter uses the IIS web server component of the operating system:
  - IIS V6 or higher.
  - It is important that IIS is installed and running before any .NET software packages are installed as these will install additional components if they detect IIS on the server. If .NET is already installed before IIS was enabled, then .NET should be reinstalled.
  - The **ASP.net** option for the IIS server must be set as ***Allowed***.
  - IP Office Customer Call Reporter only supports installation onto an IIS server running its default web site on port 80 (the default port).
  - IP Office Customer Call Reporter uses ***web.config*** files that are installed in its own virtual directories under the IIS default web server root. If another applications erroneously installs a web.config file in the IIS default web site's root directory, that web.config will affect all other applications using the IIS including IP Office Customer Call Reporter.

- **Hardware Requirements**
  The following are the minimum requirements for the computer hosting any components of the IP Office Customer Call Reporter server application.
  - **Processor:** Intel Pentium D945 Dual Core or AMD Athlon 64 4000+.
  - **RAM:** 2GB (4GB for optimum operation).
  - **Free Hard Disk Space:** 30GB.
  - **Additional:** CD or DVD drive for software installation.
  - If installing a licensed edition of MS-SQL on the IP Office Customer Call Reporter server computer, the separate requirements of the MS-SQL Edition must be meet.

Notes

1. The installer of the IP Office Customer Call Reporter Server platform must have Windows administrative rights to proceed with the installation. If the correct rights are not available a message appears informing the installer and the installation will be stopped.
2. The customer map functions require Internet access from both the server computer and the client computer.

3.2 Information Requirements

In addition to general customer details, get the following information before you install IP Office Customer Call Reporter.

Category	Information
Documentation	The following are available from the Avaya Support web site (http://support.avaya.com): • IP Office Customer Call Reporter Installation Manual (this document) • IP Office Customer Call Reporter User Guide. • IP Office Technical Bulletins for the release of IP Office Customer Call Reporter and IP Office software being used.
IP Office System Information	• System name. • Service user name and password for full configuration settings access. • Service user name and password for security settings access. • IP Address and Mask of the control unit. • Current software level. This must be IP Office Release 7.0. If the IP Office system requires upgrading that must be done prior to any IP Office Customer Call Reporter installation in accordance with the appropriate IP Office Technical bulletins. • Feature Key dongle serial number.
IP Office Customer Call Reporter Server Computer	• Name and password for account with full administrator rights log on. • Computer IP address details.
SMTP E-mail Details	• SMTP Server Hostname • SMTP Server Port • Originator E-mail Address and Name. • Server User Name (optional) • Server Password (optional)
Database Details	Database user name and password for SA access. Windows Authentication is not used.
Supervisor Details	Login names and e-mail addresses for the supervisors.
Agent Details	Details of the IP Office users who will be configured as CCR Agents.
Hunt Group (Queue) Details	Details of the IP Office hunt groups for CCR Agents.

- **! WARNING**
  The IP Office's IP address is used to tag agent and queue data stored in the IP Office Customer Call Reporter database. If the IP Office's IP address or name is changed after installation, any existing data is still tagged with the previous IP address while new data will be tagged with the new IP address. This may result in reports including multiple entries for each agent and queue.

3.3 Software Requirements

A number of software items are required to complete the IP Office Customer Call Reporter installation. Not all of these are provided as part of the IP Office Customer Call Reporter installation package. Verify that you have all the items listed below before proceeding with the installation.

Software	Details
IP Office Administrator Applications CD	These application will be required during installation in order to configure the IP Office systems. Having them installed and used from the IP Office Customer Call Reporter server computer is also a validation of connectivity between that computer and the IP Office system. Both these application are installable as part of the IP Office Administrator Application suite. That is available on CD or DVD from Avaya. The CD image can be downloaded from the Avaya support website (http://support.avaya.com). • **IP Office Administrator Applications DVD Set** This will be used to install the following onto the IP Office Customer Call Reporter server computer. They are used during IP Office Customer Call Reporter installation. • **IP Office Manager.** • **IP Office System Status Application.** • **IP Office System Monitor.**
Windows Operating System CD	If the IIS 6 web server is not installed already, you may need the operating system disks that match the IP Office Customer Call Reporter server computer's operating system. • **Microsoft Windows Server 2003 SP2.** • **Microsoft Windows Server 2003 R2.** • **Microsoft Windows Small Business Server 2003 R2.** • **Microsoft Windows Server 2008 SP2 (32-bit and 64-bit).**
Microsoft Software Updates	The following items are all required and must be pre-installed on the IP Office Customer Call Reporter server before the IP Office Customer Call Reporter application is installed. They are included on the IP Office Customer Call Reporter DVD. They are not included in the downloadable application installed available from http://support.avaya.com, however they can all be obtained from the Microsoft download website (http://www.microsoft.com/downloads). • **.NET 4.0 (dotNetFx40_Full_x86_x64.exe)** Verify that IIS is installed 23 and is accessible before installing the .NET package. This installs additional .NET components for IIS during the .NET installation. • **Visual J# 2.0 Runtime (vjredist.exe)** For all the above: • Obtain the correct version for the operating system and processor type of the IP Office Customer Call Reporter server PC. • If the IP Office Customer Call Reporter server PC does not have external internet access, get the full redistribution package. • Verify that IIS is installed 23 and is accessible before installing the .NET package. This installs additional .NET components for IIS during the .NET installation.
MS-SQL	• Either: • A licensed copy of **MS-SQL 2008**. • Access details to an existing licensed **MS-SQL 2008** server computer on the same network. • A free copy of **MS-SQL 2008 Express Edition**. This can be obtained from the Microsoft download site as listed above. • Optional: • A copy of **SQL Server Management Studio Express** for system maintenance.
IP Office Customer Call Reporter Application Software	• The IP Office Customer Call Reporter application is available on DVD from Avaya. The software image can also be downloaded from the Avaya support website (http://support.avaya.com).
Optional	IP Office Customer Call Reporter can output reports in a number of formats. To view these, the users will require an application that is able to display files in that format. • Adobe Acrobat. • Crystal Reports. • Microsoft Word.

Software	Details
	• Microsoft Excel.

3.4 IP Office Connection

This process sets up and tests connection from the IP Office Customer Call Reporter server computer to the IP Office control unit. It uses the same protocol as will be used by the IP Office Customer Call Reporter application once it is installed.

For its connection to the IP Office system, the IP Office Customer Call Reporter application uses an IP Office service user account that has permission for SSI connection. This is the same connection method as used by the IP Office System Status Application.

IP Office Customer Call Reporter can use an existing IP Office service user account that has been configured for SSI, however we if you create a specific account on the IP Office system, the account's purpose is clearly identifiable.

- **Number of Simultaneous SSI Connections Per IP Office**
  Each IP Office system only support up to 2 simultaneous SSI connections. Therefore when IP Office Customer Call Reporter is connected, the IP Office SSA application will be restricted to 1 connection at any time.
  - To run SSA from the same computer as IP Office Customer Call Reporter once name is running, the server computer will require an alternate IP address. The System Status Application allows selection of which address it should then use when run and should be set to use the alternate IP address.

Configuring an IP Office Service User Account for IP Office Customer Call Reporter

1. Start IP Office Manager and select **File | Advanced | Security Settings**.
2. Load the security settings for the first IP Office system.
3. Click  **Rights Groups** and select the group ***System Status***.
   - This group exists by default on most systems. If the group does not exist, click  to create a new **Rights Group** called ***System Status*** and give it the settings listed below.
   - On the **Configuration** tab verify that ***Read all configuration*** is selected.
   - On the **System Status** tab verify that ***System Status Access*** is selected.
4. Click on  **Service Users** to view the existing service user accounts.
5. Click  to create a new service user account,. Enter the following settings.
   - **Name**
     Enter a name that clearly indicates the purpose of the account, for example ***IPOCCR***.
   - **Password**
     Enter a password for the account. This and the name above will be used by the IP Office Customer Call Reporter server to connect to the IP Office.
   - **Account Status**
     Select ***Enabled***.
   - **Account Expiry**
     Select ***<None>***.
   - **Rights Group Membership**
     Select the ***System Status Group***.
6. Click  in the **Main Toolbar** or select **File | Save Security Settings** from the menu bar.
7. Repeat this process for any other IP Office systems.

Testing the IP Office Customer Call Reporter Service User Account

The IP Office System Status Application (SSA) uses the same IP Office connection method as IP Office Customer Call Reporter and so can be used to test the connection from the IP Office Customer Call Reporter server computer to the IP Office.

1. On the IP Office Customer Call Reporter server computer, start IP Office System Status.
2. Enter the IP address of the IP Office system and the user name and password configured for use by IP Office Customer Call Reporter.
3. Click **Logon**.
4. The configuration details of the IP Office system should be loaded.

3.5 IIS Setup

IP Office Customer Call Reporter uses the IIS component of the operating system.

- IIS V6 or higher.
- It is important that IIS is installed and running before any .NET software packages are installed as these will install additional components if they detect IIS on the server. If .NET is already installed before IIS was enabled, then .NET should be reinstalled.
- The **ASP.net** option for the IIS server must be set as ***Allowed***.
- IP Office Customer Call Reporter only supports installation onto an IIS server running its default web site on port 80 (the default port).
- IP Office Customer Call Reporter uses ***web.config*** files that are installed in its own virtual directories under the IIS default web server root. If another applications erroneously installs a web.config file in the IIS default web site's root directory, that web.config will affect all other applications using the IIS including IP Office Customer Call Reporter.

Testing IIS Connection (Basic)

1. On the IP Office Customer Call Reporter server computer start Internet Explorer.
2. Enter the address http://127.0.0.1.
   - IP Office Customer Call Reporter only supports installation onto an IIS server running its default web site on port 80 (the default port).
3. If IIS is running it should respond with a web page, even if it just lists the web site as "Under Construction".
4. If no page is returned Internet Explorer will report that it could not connect to the web server. Follow the instrutions for installing/enabling IIS given below.
5. Check that IIS can be browsed using the server computer's IP address from other computers on the customer network.
6. Check that IIS can be browsed using the server computer's domain name from other computers on the customer network. Note the address, as this address with the extension ***/CCRWebClient*** will be used by IP Office Customer Call Reporter users.
7. Once you have established that IIS is running and can be browsed across the customer network, go to the section **Checking the IIS Settings** below.

Installing IIS on Windows 2008 Server

When installing IIS, you may require the original operating system media.

1. Click **Start** | **Administrative Tools** | **Server Manager**.
2. In the **Server Manager** window, scroll down to **Roles Summary**, and click **Add Roles**.
3. Click **Add Roles**.
   The **Add Role Wizard** opens up.
4. Verify the settings mentioned on the **Before You Begin** page and click **Next**.
5. On the **Select Server Roles** page, check the **Web Server (IIS)** check box and click **Next**.
6. On the **Introduction to Web Server (IIS)** page, click **Next**.
7. On the **Select Role Services** page, select the IIS services to be installed. Verify that **ASP.NET** is selected.
8. Click **Add Required Role Services** to install the required role services.
9. Click **Next**.
10. On the **Confirm Installation Selections** page, click **Install**.
11. Click **Close** to complete the IIS installation.

Installing IIS on Windows 2003 Server

When installing IIS, you may require the original operating system media.

1. Click **Start** | **Control Panel** | **Add or Remove Programs**.
2. Click **Add/Remove Windows Components**.
3. In the **Windows Components Wizard**, under **Components**, select **Application Server**.
4. Click **Next**.
5. After the installation is complete, click **Finish**.

Checking the IIS Settings

If IIS is already installed and running, it is important to check its settings before installing IP Office Customer Call Reporter.

1. Click **Start** | **Administrative Tools** | **Internet Information Services (IIS) Manager**.

2. In the left pane, click the root node in the tree.
3. Open **ISAPI and CGI Restrictions** (on Windows 2008 Server) or **Web Service Extensions** (on Windows 2003 Server).
4. Verify that the **ASP.NET** services are listed as ***Allowed***. If required, right-click each and select ***Allow***.

3.6 Windows Software Prerequisites

Install the Windows Software Updates by choosing the operating system version and either x86 or x64 according to the system platform in the following order.

1.	**Mandatory Windows Operating system**	• **Windows 2003 SP2 Folder**
		  • WindowsServer2003-KB914961-SP2-x86-ENU.exe 6.3.4.1
		  Microsoft Windows Server 2003 Service Pack 2 Setup
		  • WindowsServer2003.WindowsXP-KB914961-SP2-x64-ENU.exe 6.3.4.1
		  Microsoft Windows Server 2003 Service Pack 2 Setup
		• **Windows 2008 SP2 Folder**
		  • Windows6.0-KB948465-X86.exe 6.0.6002.18005
		  Microsoft Windows Server 2008 Service Pack 2 Setup
		  • Windows6.0-KB948465-X64.exe 6.0.6002.18005
		  Microsoft Windows Server 2008 Service Pack 2 Setup
		  Note: Currently, Windows 2008 R2 does not require any Service Pack.

2.	**Windows Installer Packages**	• **Windows 2003 SP2 Folder**
		  • WindowsServer2003-KB942288-v4-x86.exe 4.5.0.0
		  Microsoft Windows Installer 4.5
		  • WindowsServer2003-KB942288-v4-x64.exe 4.5.0.0
		  Microsoft Windows Installer 4.5
		• **Windows 2008 SP2 Folder**
		  • Windows6.0-KB942288-v2-x86.msu
		  Microsoft Windows Installer 4.5
		  • Windows6.0-KB942288-v2-x64.msu
		  Microsoft Windows Installer 4.5

3.	**Framework packages (in the given order)**	• **x86\Framework sub-folder**
		  • vjredist.exe 2.0.50727.937
		  Microsoft Visual J# 2.0 Redistributable Package - SE (x86)
		  • dotnetfx35.exe 3.5.30729.1
		  Microsoft .NET Framework 3.5 including Service Pack 1 Setup
		  • dotNetFx40_Full_x86_x64.exe 4.0.30319.1
		  Microsoft .NET Framework 4.0 Setup
		• **x64\Framework sub-folder**
		  • vjredist64.exe 2.0.50727.937
		  Microsoft Visual J# 2.0 Redistributable Package - SE (x64)
		  • dotnetfx35.exe 3.5.30729.1
		  Microsoft .NET Framework 3.5 including Service Pack 1 Setup
		  • dotNetFx40_Full_x86_x64.exe 4.0.30319.1
		  Microsoft .NET Framework 4.0 Setup

4.	**Windows Updates**	• **x86\Updates for Server 2003 sub-folder**
		  • NDP20SP2-KB958481-x86.exe 9.0.30729.195
		  Microsoft Update for the .NET Framework 2.0 Service Pack 2
		  • NDP30SP2-KB958483-x86.exe 9.0.30729.196
		  Microsoft update for the .NET Framework 3.0 Service Pack 2
		  • NDP35SP1-KB958484-x86.exe 9.0.30729.196
		  Microsoft Update for the .NET Framework 3.5 Service Pack 1
		  • NDP30SP2-KB981107-x86.exe 9.0.30729.4519
		  Microsoft Update for the .NET Framework 3.0 Service Pack 2
		  • NDP30SP2-KB967634-x86.exe 9.0.30729.4076
		  Microsoft Update for the .NET Framework 3.5 Service Pack 1
		  • NDP40-KB2468871-v2-x86.exe 10.0.30319.233
		  Microsoft Update for the .NET Framework 4.0
		• **x86\Updates for Server 2008 sub-folder**

- Windows6.0-KB958481-x86.msu
  Microsoft Update for the .NET Framework 2.0 Service Pack 2
- Windows6.0-KB958483-x86
  Microsoft update for the .NET Framework 3.0 Service Pack 2
- NDP35SP1-KB958484-x86.exe 9.0.30729.196
  Microsoft Update for the .NET Framework 3.5 Service Pack 1
- Windows6.0-KB981107-x86.msu
  Microsoft Update for the .NET Framework 3.0 Service Pack 2
- Windows6.0-KB967634-v3-x86.msu
  Microsoft Update for the .NET Framework 3.5 Service Pack 1
- NDP40-KB2468871-v2-x86 10.0.30319.233
  Microsoft Update for the .NET Framework 4.0

x64\Updates for Server 2003 sub-folder

- NDP20SP2-KB958481-x64.exe 9.0.30729.195
  Microsoft Update for the .NET Framework 2.0 Service Pack 2
- NDP30SP2-KB958483-x64.exe 9.0.30729.196
  Microsoft update for the .NET Framework 3.0 Service Pack 2
- NDP35SP1-KB958484-x64.exe 9.0.30729.196
  Microsoft Update for the .NET Framework 3.5 Service Pack 1
- NDP30SP2-KB981107-x64.exe 9.0.30729.4519
  Microsoft Update for the .NET Framework 3.0 Service Pack 2
- NDP30SP2-KB967634-x64.exe 9.0.30729.4076
  Microsoft Update for the .NET Framework 3.5 Service Pack 1
- NDP40-KB2468871-v2-x64.exe 10.0.30319.233
  Microsoft Update for the .NET Framework 4.0

x64\Updates for Server 2008 sub-folder

- Windows6.0-KB958481-x64.msu
  Microsoft Update for the .NET Framework 2.0 Service Pack 2
- Windows6.0-KB958483-x64
  Microsoft update for the .NET Framework 3.0 Service Pack 2
- NDP35SP1-KB958484-x64.exe 9.0.30729.196
  Microsoft Update for the .NET Framework 3.5 Service Pack 1
- Windows6.0-KB981107-x64.msu
  Microsoft Update for the .NET Framework 3.0 Service Pack 2
- Windows6.0-KB967634-v3-x64.msu
  Microsoft Update for the .NET Framework 3.5 Service Pack 1
- NDP40-KB2468871-v2-x64 10.0.30319.233
  Microsoft Update for the .NET Framework 4.0

For all the above:

- Verify that you have the correct version for the operating system and processor type of the IP Office Customer Call Reporter server computer.
- If the IP Office Customer Call Reporter server computer does not have external internet access, get the full redistribution package.
- Verify that IIS is installed[23] and is accessible before installing the .NET package. This installs additional .NET components for IIS during the .NET installation.

3.7 Windows Software Updates

The following items are all required and must be pre-installed on the IP Office Customer Call Reporter server before the IP Office Customer Call Reporter application is installed. They are included on the IP Office Customer Call Reporter DVD. They are not included in the downloadable application installed available from http://support.avaya.com, however they can all be obtained from the Microsoft download website (http://www.microsoft.com/downloads).

- **.NET 4.0 (dotNetFx40_Full_x86_x64.exe)**
  Verify that IIS is installed and is accessible before installing the .NET package. This installs additional .NET components for IIS during the .NET installation.
- **Visual J# 2.0 Runtime (vjredist.exe)**

For all the above:

- Obtain the correct version for the operating system and processor type of the IP Office Customer Call Reporter server PC.
- If the IP Office Customer Call Reporter server PC does not have external internet access, get the full redistribution package.
- Verify that IIS is installed and is accessible before installing the .NET package. This installs additional .NET components for IIS during the .NET installation.

3.8 Installing MS-SQL

You must install MS-SQL before you install any of the IP Office Customer Call Reporter application components. During installation of the IP Office Customer Call Reporter application, the system requests access information for the database and tests the entered credentials in order to complete the IP Office Customer Call Reporter installation.

The MS-SQL can either be the free MS-SQL Express Edition or a licensed edition of MS-SQL. For details of the differences, see Database Requirements 12.

- If you are using MS-SQL Express Edition, install it on the same system as the main IP Office Customer Call Reporter application components.
- If you are using a licensed edition of MS-SQL, install it on the IP Office Customer Call Reporter server or on a separate system on the network. If you want to install the licensed edition of the MS-SQL on a separate system, then first install the IP Office Customer Call Reporter Database component on that system separately from the other IP Office Customer Call Reporter components. For more information, see Distributed Installation 14.

Installing Microsoft Express MS-SQL

If you are installing a licensed Microsoft SQL Edition, refer to the installation instruction that comes with the software.

Note: IP Office Customer Call Reporter requires a licensed MS-SQL Server Edition to support **Mixed Mode (Windows Authentication and SQL Server Authentication)** access.

1. Locate the software installation package that you have obtained (see Software Requirements 20). Express version (32 and 64 bits) are available in the **Prerequisites** folder of the IP Office Customer Call Reporter DVD.
2. Open the installation package to start installation.
3. Click the required exe file:
   - For 32-bit: SQLEXPRADV_x86_ENU.exe
   - For 64-bit: SQLEXPRADV_x64_ENU.exe

   Note: SQLEXPRADV_x86_ENU.exe and SQLEXPRADV_x64_ENU.exe are the versions with advanced services. If you do not install these versions of SQL Express Edition, the IP Office Customer Call Reporter Custom Report page will not display the link to launch Report Builder. You will have to install Report Builder manually.

The system displays the **SQL Server** dialog box. After a few seconds, the system replaces the dialog box with the **SQL Server Installation Center** window.

4. On the left side of the **SQL Server Installation Center** window, click **Installation**.

The system displays a list of installation options on the right.

5. On the right side of the screen, click **New SQL server stand-alone installation**.

The system displays the **SQL Server 2008** dialog box requesting you to wait while the install program prepares for installation.

6. After a minute or so, the system displays the **System Support Rules** window.
7. If the installation fails any checks:
   1. Click **Show details** or **View detailed report** to determine the cause of error.
   2. Click **Re-run** to perform the checks again.
8. If the installation passes all the checks, click **OK**.

The system displays the window where you enter your license key and product edition.

Note: Depending on the edition you are installing, the license key may be present on the Product box.

9. If the **Enter Product Key** box is empty, enter the product key and click **Next**.

Select **I accept the license terms.**

10. Click **Next**.

The system displays the **Setup Support Files** window.

11. Click **Install**.

The Windows Installer prepares for the installation. After 30 seconds or so, the system starts installing the Windows Setup Support files. If the system does not encounter any problems, the system displays the message "Operation completed".

12. Click **Next**.

The system displays the **Feature Selection** window.

13. Click **Select All**
14. Click **Next.**

The system displays the **Instance configuration** window**.**

15. Select the **default instance** setting.
16. Click **Next**.

The system displays the Disk Space Requirements window. This window provides the disk space information on the drive on which you are installing MS-SQL.

17.Click **Next**.

The system displays the Server Configuration window.

18. Set up the service accounts that you intend to use .to run the SQL server.

- If you have created Windows NT or Active Directory accounts for use with services, use the service accounts shown in the window.
- If you have not created Windows NT or Active Directory accounts, use the built-in Network Service account for all three services listed in the window.

19.Change the Startup type to **Automatic** for all three services. This automatically starts the SQL server database engine, SQL Agent and SQL Browser services when you re-boot the server.

20.**Note**: Setting up the service accounts allows the SQL server to start up automatically after installation.

21.Click **Next**.

The system displays the **Database Engine Security** window.

22.Change the **Authentication Mode** to **Mixed Mode**.

23.Enter a password for the system administration account.

The system displays the **Database Engine Configuration** window.

24.Click the **Data Directories** tab.

25.Select the directories to specify the drives in your system you are going to use.

The system displays the **Error Usage Reporting** window. The system asks if you want the system to send the error information to Windows or safely skip the information.

26.Select the check-boxes if you want Windows to send the error messages.

27.Click **Next**.

The system displays the **Installation Rules** window.

28.Click **Next**.

The system displays the **Ready to Install** window. This window summarizes what you are about to install and gives you a last chance to cancel or change any information.

29.To start the installation process, click **Install**.

The system displays the **Installation Progress** window.

30.After the installation is complete, the system displays the **Complete** window.

31.To verify that the installation has happened as expected, click the **Installation Log** link.

The system prompts you to re-boot to complete the SQL Server set-up.

32.Click **OK**.

The system brings you back to the **SQL Server Installation Center** window (see step 4 28).

33.Click **Close**.

34.Re-boot your system manually to complete installation.

3.9 CCR License Installation

IP Office Customer Call Reporter is licensed by licenses entered into the configuration of the IP Office system. The licenses control the number of agents supported on the IP Office system (up to the IP Office Customer Call Reporter maximum of 150) and the number of supervisor supported on the IP Office Customer Call Reporter system (up to the IP Office Customer Call Reporter maximum of 30).

Licenses are issues against the serial number of the feature key dongle installed with the IP Office system. The licenses cannot be used on another IP Office system using a different feature key dongle.

The IP Office Customer Call Reporter licenses available are:

To support IP Office Customer Call Reporter, the IP Office Release 6 system must have **Preferred Edition** and **Advanced Edition** licenses. The **Advanced Edition** license also enables 1 customer service supervisor.

For system being upgraded to IP Office Release 6, IP Office Customer Call Reporter can alternately be enabled by a legacy **CCR Sup** license or a **CCC Supervisor** and **CCR CCC Upg** license.

License	Function
Customer Service Supervisor	The presence of at least one **Customer Service Supervisor** license is required to use IP Office Customer Call Reporter. Multiple licenses can be added to achieve the number of supervisors required up to 30 supervisors. Each license instance enables 1 supervisor account login and also 1 wallboard account login.
Customer Service Agent	Enables support for IP Office Customer Call Reporter agents. Multiple license can be added to achieve the number of agents required up to the maximum of 150 agents. One license instance is consumed for each IP Office Customer Call Reporter agent currently logged in on the IP Office system.
CCR CCC UPG	This license allows existing CCC licenses to be used for IP Office Customer Call Reporter, see Upgrading from CCC 14. The CCC licenses are used as follows: • **CCC Server -** Enables 1 supervisor, 1 wallboard and 5 agents. • **CCC Supervisors -** Enables the equivalent number of supervisors and the equivalent number of wallboards. • **CCC Agents -** Enables the equivalent number of agents.

Installing a Feature Key Dongle

IP500 IP Office system have a smart card feature key dongle present all the time. Other IP Office systems however can run without an dongle present. If the system does not have a dongle already installed, refer to the IP Office Installation manual for details of dongle installation.

Entering Licenses

1. Start IP Office Manager on the IP Office Customer Call Reporter server computer and load the configuration from the IP Office system.
2. Select **System**.
3. On the **System** tab locate the dongle **Serial Number** field. This should show the serial number of the IP Office's Feature Key dongle. Check that the serial number matches the number against which the licenses have been issued.
4. Select **Licenses**.
5. Click on to enter a new license.
6. Cut and paste one of the supplied licenses into the menu displayed and click **OK**.
7. Check that the detail of the license type and the number of instances of that type that it enables are correct. The license status will be listed as Unknown until the configuration has been sent to the IP Office and then loaded again in Manager.
8. Repeat the process for all the IP Office Customer Call Reporter licenses provided for the IP Office system.
9. Click **OK**.
10. Click to send the configuration back to the IP Office.

Checking Licenses

1. Start IP Office Manager on the IP Office Customer Call Reporter server computer and load the configuration from the IP Office system.
2. Select  **Licenses**.
3. Check that the **Status** of the IP Office Customer Call Reporter licenses are now listed as ***Valid***.

3.10 Agent and Queue Configuration

During installation of IP Office Customer Call Reporter, create at least one CCR Group containing one CCR Agent within the IP Office configuration.

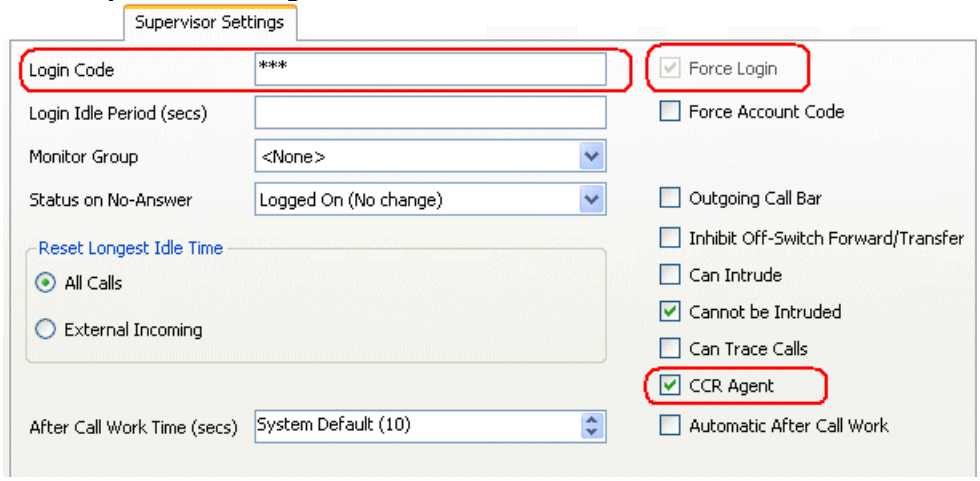
Agent Configuration

IP Office Customer Call Reporter agents are also IP Office users and are configured through their matching user entry in the IP Office configuration. A maximum of 150 agents are supported in total by IP Office Customer Call Reporter.

The settings below (apart from **Login Code**) can be set within a **User Rights** entry. They can then be applied to the required users. Note however that if this is the case the use of time profiles to control when the User Rights are applied to the users is not supported.

Configuring a User as an IP Office Customer Call Reporter Agent

1. Using IP Office Manager, receive the IP Office system configuration.
2. Select or add the user who you want to configure as IP Office Customer Call Reporter agent.
   - IP Office Customer Call Reporter is designed for call center agents who do not have a permanent physical extension, rather they log in at any available extension when they need to start making and receiving calls.
     - To add a new user selecting the icon and then **User**.
     - On the **User** tab enter a **Name**, **User Name** and **Extension** number for the agent.
     - Use the steps detailed below to configure the new user as an IP Office Customer Call Reporter agent.
3. Select the **Telephony** tab.
4. Select **Supervisor Settings**.



5. Enter a **Login Code** for the user and select **Force Login**. These options are mandatory for IP Office Customer Call Reporter agents.
6. Select the option **Customer Service Agent Profile**.
7. If you are already familiar with After Call Work (ACW) 54 you can configure the agent's ACW settings at this time also.
8. The other options available are described in the IP Office Manager documentation which can be accessed by clicking **Help**.
9. Click **OK**.
   - If this is a new user that you are creating, the system may prompt you with *"Would you like a new VoIP extension created with this number?"*. Select ***No***.
10. When all the configuration changes you require are completed send the configuration back to the IP Office.

Queue Configuration

For an IP Office hunt group to have its call and agent data recorded by IP Office Customer Call Reporter it must be configured as being an IP Office Customer Call Reporter Agent Group. There are no IP Office Customer Call Reporter license restrictions on how many hunt groups can be configured for IP Office Customer Call Reporter usage.

- A **Customer Service Agent Profile Group** should only contain users who have been configured as **IP Office Customer Call Reporter Agents** 50. IP Office Manager will provide warnings if non-agents are included in the group. During operation the IP Office will not present queue calls to a non-agent and IP Office Customer Call Reporter will not display information for non-agents.
- IP Office Customer Call Reporter currently does not support Small Community Networking (SCN). Therefore the use of remote hunt group members and or members hot desking to another IP Office is not supported.
- ***Collective*** groups are not supported for IP Office Customer Call Reporter operation.
- For group's configured as a **Customer Service Agent Profile Group**, the **Queuing On** option on the **Queueing** tab is automatically enabled and cannot be disabled.
- If overflow is being used, it is only supported using other IP Office Customer Call Reporter groups.
- IP Office Customer Call Reporter expects hunt groups to contain at least one agent. Groups configured without any agents are not visible to IP Office Customer Call Reporter.

Configuring a Hunt Group for IP Office Customer Call Reporter

1. Using IP Office Manager, receive the IP Office system configuration.
2. Create a hunt group and add members as normal. The only restriction to observe is that the selected members must all be users who are configured as **CCR Agents**.
3. On the Hunt Group tab select the option **Customer Service Agent Profile Group**.
4. If Manager validation is running, Manager will warn if any of the group members are not IP Office Customer Call Reporter Agents.
5. Click **OK**.
6. When all the configuration changes you require are completed send the configuration back to the IP Office.

3.11 SMTP Email Testing

Simple SMTP Test

This quick test simply establishes that an SMTP server is listening on the default port (25) for SMTP e-mail sending.

1. Start a command line window by selecting **Start | Run** and entering ***cmd***.
2. Type **Telnet** <*the name or address of the SMTP server*> **25**. For example ***telnet TECHPUBSERVER 25***.
3. The expected response is an SMTP reply code 220 indicating that the service is ready. For example *220 TECHPUBSERVER.techpubs.local Microsoft ESMTP MAIL Service, Version: 6.0.3790.3959 ready at Wed, 19 Nov 2008 09:54:39 -0800*.
4. If a positive response is received, enter **quit** to close the telnet connection to the SMTP server.

3.12 CCR Software Installation

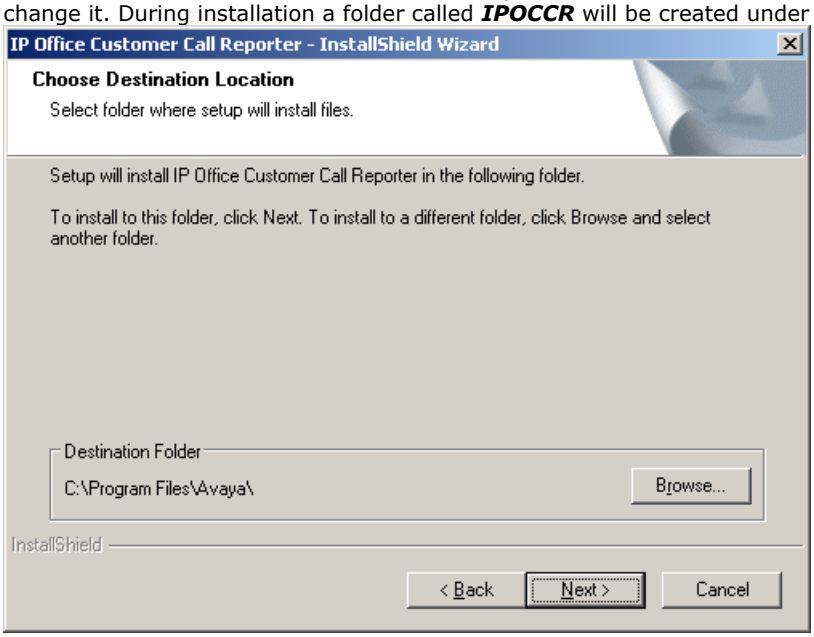
Use the following process to install the IP Office Customer Call Reporter software. If you are upgrading an existing installation refer to Upgrading CCR 62.

The table below gives an summary of where IP Office Customer Call Reporter software installation fits within the overall installation process.

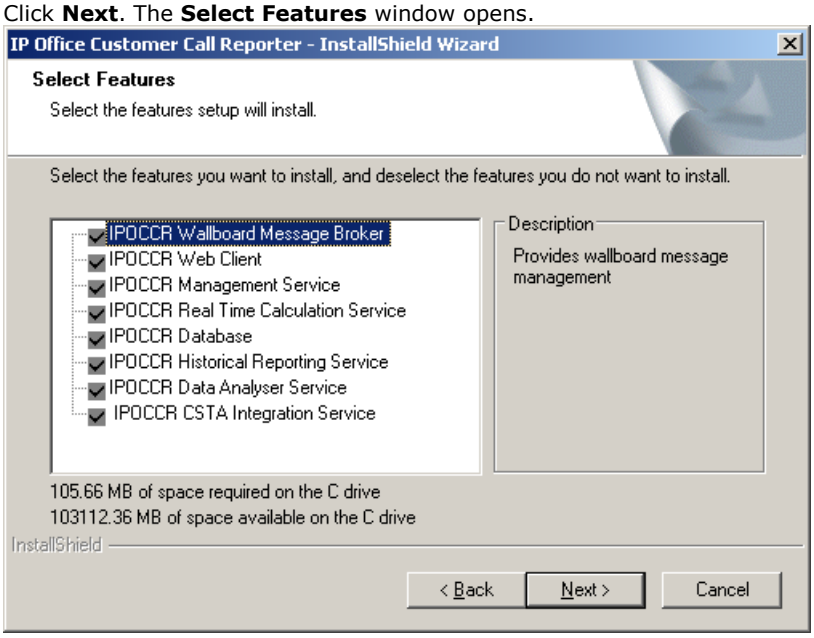
Single Server Installation Summary	Separate SQL Server Installation Summary
1. Install SQL and other pre-requisites on the server. 2. Install the IP Office Customer Call Reporter software on the IP Office Customer Call Reporter server with all the components selected. 3. During the database server selection use the drop down list to select the local SQL server.	1. Install MS-SQL on the SQL server. 2. Install the IP Office Customer Call Reporter software on the SQL server with all CCR components selected. During the installation, the IPOCCR Database component creates the IP Office Customer Call Reporter database within SQL. 3. Uninstall the IP Office Customer Call Reporter software from the SQL server. This action does not remove the IP Office Customer Call Reporter database created within SQL. 4. After installing the other pre-requisites, install the IP Office Customer Call Reporter software on the IP Office Customer Call Reporter server with the IPOCCR Database component de-selected. When the location of the SQL server is requested, browse to the remote SQL server location.

To install the IP Office Customer Call Reporter Server Application:

1. Check that the software requirements have been met, especially for IIS 23 and the required pre-installed applications 27.
2. Log on to the server computer using an account with full administration rights. The IP Office Customer Call Reporter installer will display a warning message and then stop if you run it using an account with insufficient rights.
3. Insert the disk containing the IP Office Customer Call Reporter software or browse to its location. If the installation does not auto-start double click on the **IPOCCRsetup.exe** file.
4. The InstallShield Wizard will check and inform you if any of the IP Office Customer Call Reporter server computer requirements have not been met.
5. When completed, the welcome menu appears. Click **Next**.
6. The **Choose Destination Location** window opens. Leave the default directory settings unless it is required to change it. During installation a folder called ***IPOCCR*** will be created under the selected path.



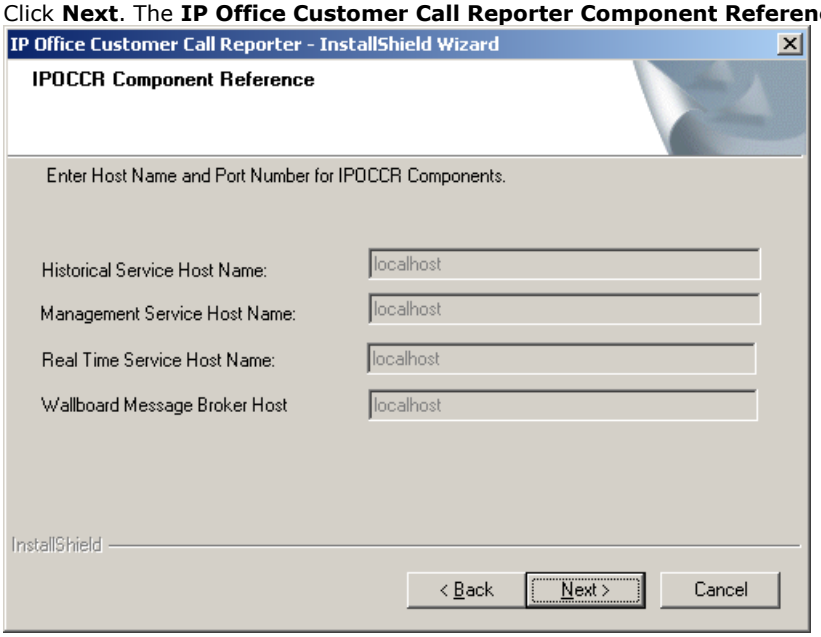
7. Click **Next**. The **Select Features** window opens.



8. The software components of IP Office Customer Call Reporter are listed. The components that should be selected will depend on the type of installation being performed.

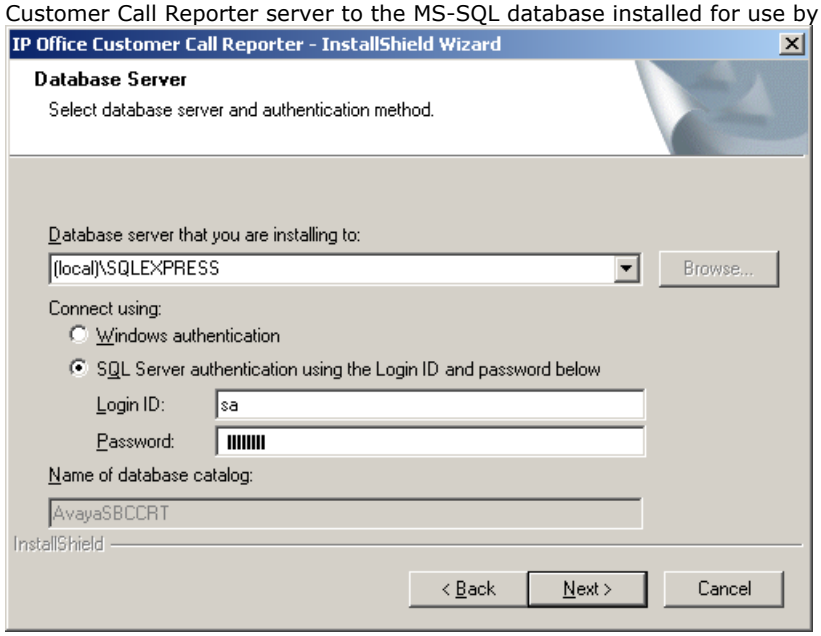
Feature	Installation Notes
IPOCCR Database	This IP Office Customer Call Reporter component must be run on the same computer as the MS-SQL server software. • When installing on the same server computer as the MS-SQL, select the **IPOCCR Database** component. The **Browse** button on the later **Database Server** installation screen will be grayed out as the local MS-SQL servers will be listed in the drop-down list. • When installing on a different server computer than the MS-SQL, do not select the **IPOCCR Database** component. The **Browse** button on the later **Database Server** installation screen can then be used to browse for the remote MS-SQL server.
All others	For IP Office Customer Call Reporter version 8.0, these components must be installed on the IP Office Customer Call Reporter server computer hosting the IIS application.

9. Click **Next**. The **IP Office Customer Call Reporter Component Reference** window opens.



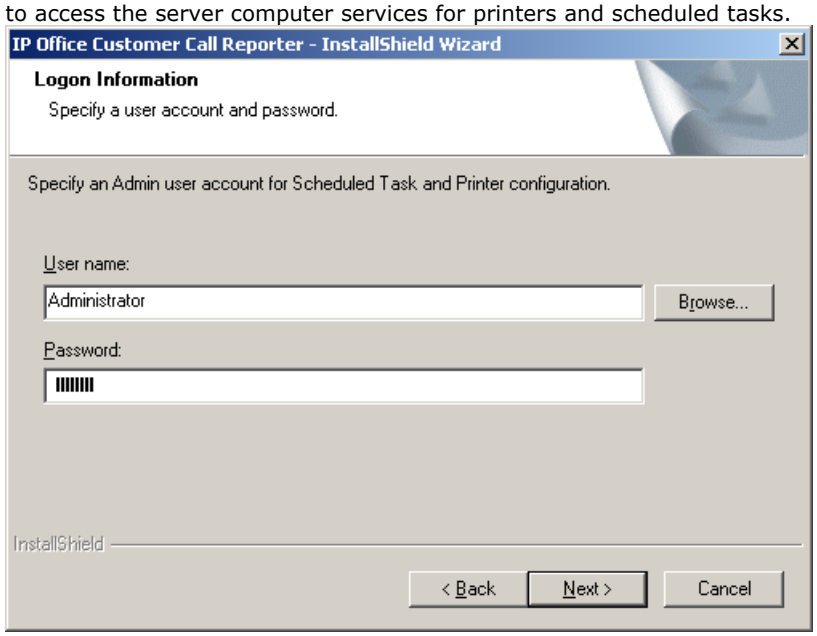
10. Enter any host names required. Note that host names must be used and not IP addresses.

11. Click **Next**. The **Database Server** window opens. This menu is used to setup the connection from the IP Office Customer Call Reporter server to the MS-SQL database installed for use by IP Office Customer Call Reporter.



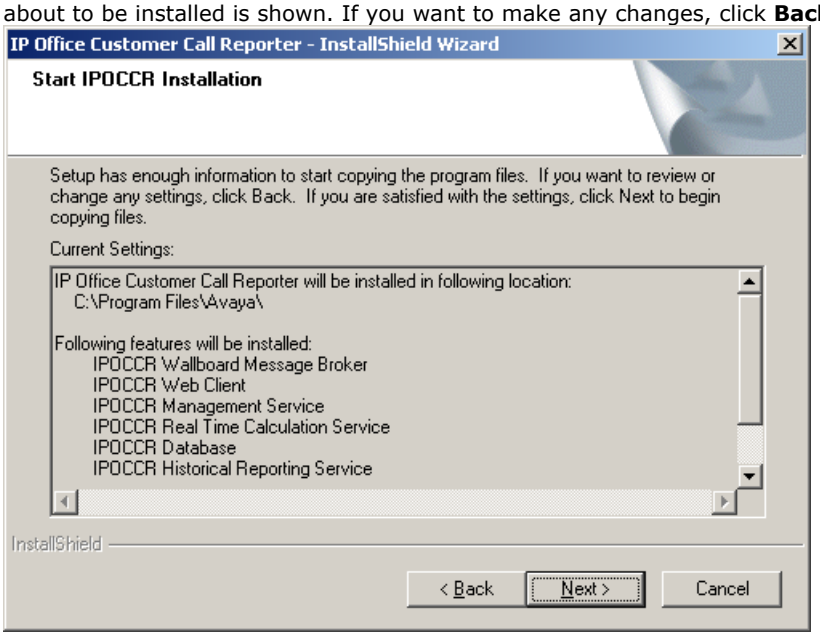
- If you selected to install the **IPOCCR Database** component onto the computer in the earlier installation screen, then the **Browse** button is disabled. In this case use the drop-down list to select the local MS-SQL database instance that you installed for use by IP Office Customer Call Reporter.
- If the MS-SQL database instance to be used for IP Office Customer Call Reporter and the IP Office Customer Call Reporter Database component have been installed on a different server computer, use the **Browse** button to browse to the location or enter the path directly.
- Change the **Connect using** settings to match the access settings configured when installing the MS-SQL database.

12. Click **Next**. The **Logon Information** window opens. These settings are used by IP Office Customer Call Reporter to access the server computer services for printers and scheduled tasks.



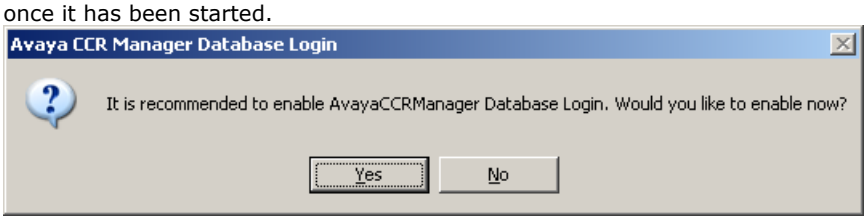
13. Enter a name and password of an administrator rights account on the server computer. The **Browse** button can be used to select an existing account name.

14. Click **Next**. The **Start IPOCCR Installation** window opens. A summary of the selected components that are about to be installed is shown. If you want to make any changes, click **Back** and make the required changes.



15. When the details are correct, click **Next** to start the installation.

16. Selecting **Yes** allows IP Office Customer Call Reporter supervisors to cancel reports that they select to view by clicking a **Cancel** option in the pop-up report window. If you select **No**, supervisors cannot cancel report generation once it has been started.



17. When the installation is complete the 'InstallShield Wizard Complete' window opens.

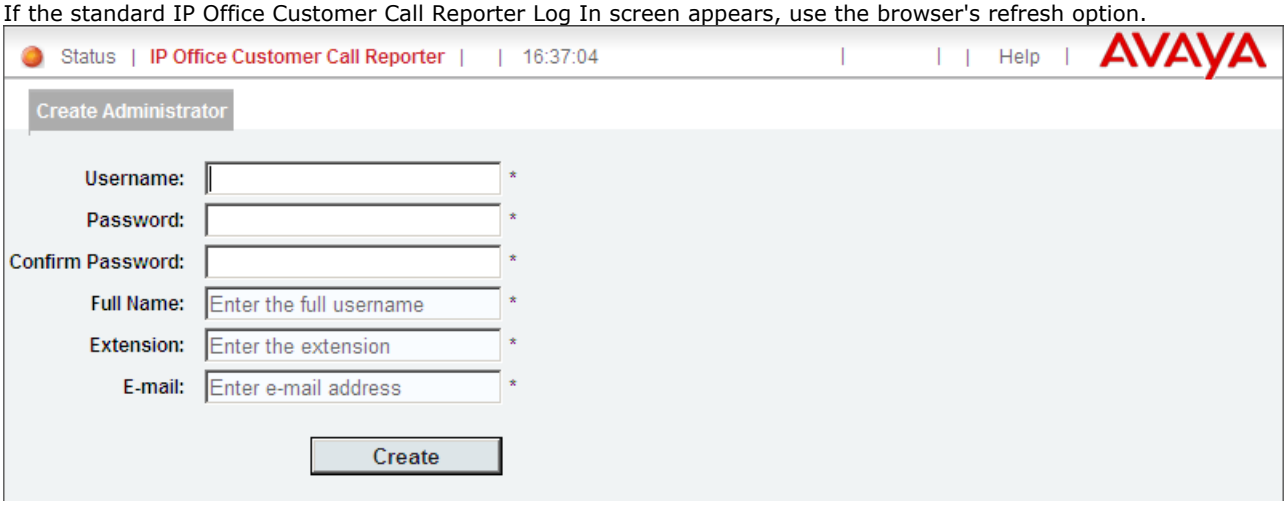
18. Click **Finish**.

19. If installation has been successful, the default web browser on the server should start and display the IP Office Customer Call Reporter menu for setting up the IP Office Customer Call Reporter administrator account and IP Office switch details 39.

3.13 CCR Administrator Creation

When a new installation of IP Office Customer Call Reporter is accessed for the first time, it will prompt you to create the administrator account. There is only one IP Office Customer Call Reporter administrator account.

1. When the IP Office Customer Call Reporter software installation is completed, the servers default browser is run. The page that appears after a minute is the one used to create the IP Office Customer Call Reporter administrator account and should be similar to the one below. There is only one administrator account and only one person can log on as an administrator at any time.
2. If the standard IP Office Customer Call Reporter Log In screen appears, use the browser's refresh option.

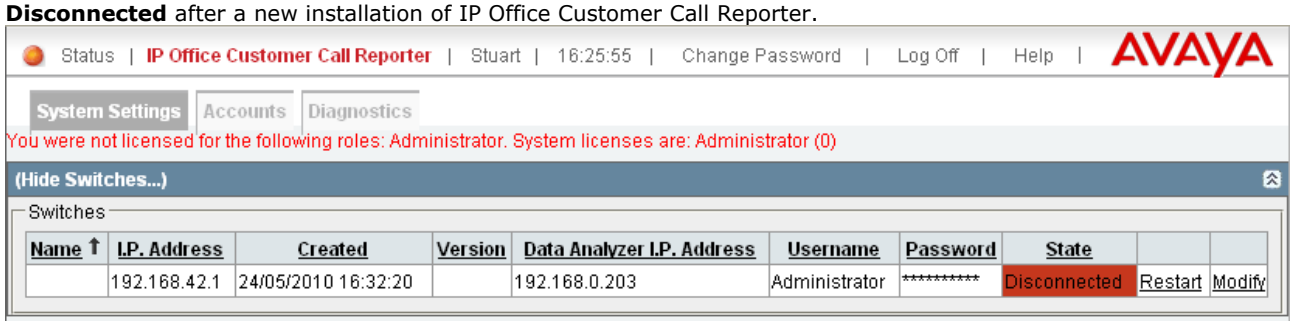


3. Enter the details for the IP Office Customer Call Reporter administrator:
   - **Username**
     The logon name for the IP Office Customer Call Reporter administrator account.
   - **Password** & **Confirm Password**
     Enter and confirm the password that the administrator will use.
   - **Full Name**
     This name is used for information display within IP Office Customer Call Reporter.
   - **Extension**
     Enter the telephone extension number associated with the administrator. This is for information only.
   - **E-mail**
     Enter the e-mail address associated with the administrator. This is used for IP Office Customer Call Reporter functions such as the **Forgotten Password** function.
3. Click **Create**. The administrator account is created and you will be logged in to IP Office Customer Call Reporter as the administrator.
4. You will now be logged in as the administrator and the **System Settings** menu is display. Use this menu to edit the details of the IP Office switch to which IP Office Customer Call Reportershould connect. See Editing the IP Office Switch Selection 40.

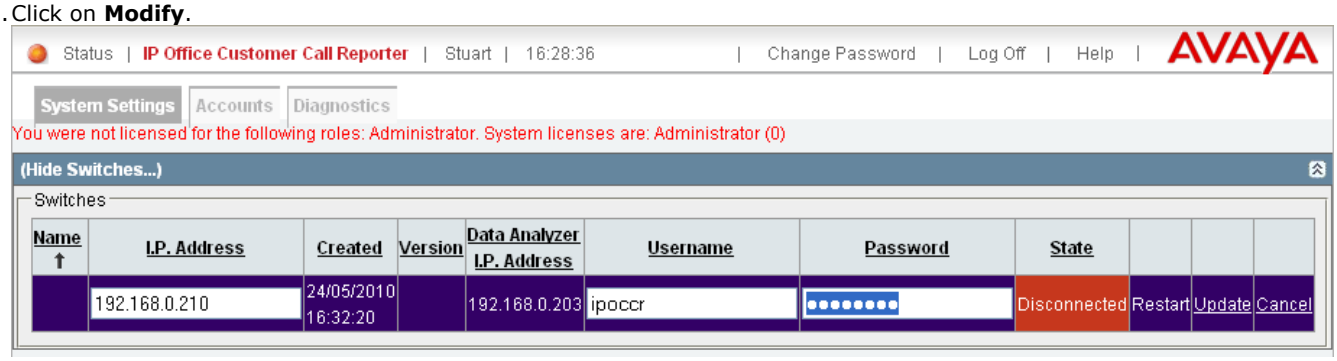
3.14 Editing the IP Office Switch Selection

A new installation of IP Office Customer Call Reporter, configures IP Office Customer Call Reporter to connect to a default IP Office, that is, an IP Office with IP address ***192.168.42.1*** and using the service user account ***Administrator***, password ***Administrator***. Following the creation of the IP Office Customer Call Reporter administrator account 39, the IP Office Customer Call Reporter **System Settings** menu is displayed to allow editing of the switch details to match those actually required for the IP Office.

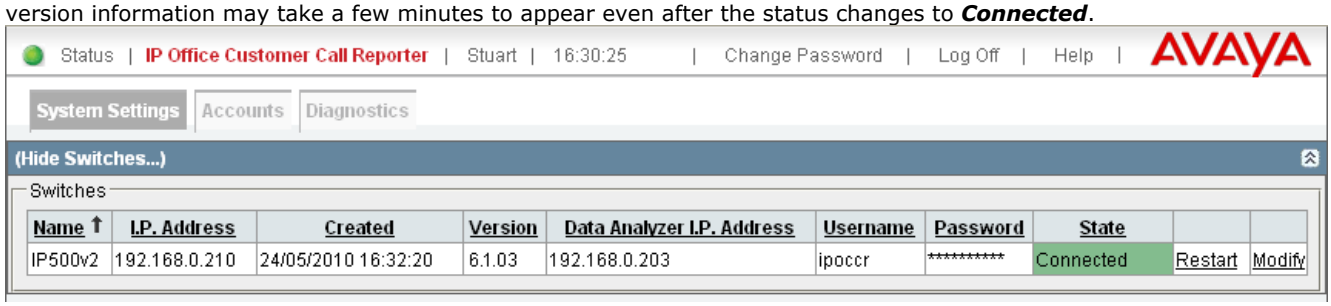
1. Having logged in as the IP Office Customer Call Reporter administrator, the **Switches** section of the **System Settings** tab will show the current status of the IP Office Customer Call Reporter Data Analyzer component connection to the IP Office. Unless your IP Office is using the default settings, the status will be displayed as **Disconnected** after a new installation of IP Office Customer Call Reporter.



2. Click on **Modify**.



3. Enter the IP Office IP address and service user account 22 details that the IP Office Customer Call Reporter application should use.
4. Click on **Update**. The IP Office Customer Call Reporter application will attempt to connect to the IP Office system using the details provided. If successful, the **State** will change to ***Connected***. Note that the IP Office name and version information may take a few minutes to appear even after the status changes to ***Connected***.

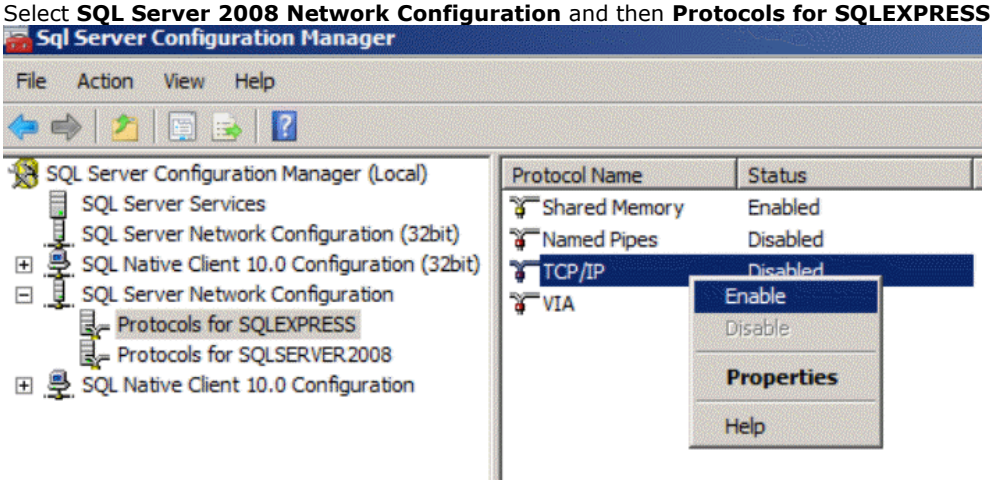


5. If the **Accounts** tab is not visible, log off and log in again to see the **Accounts** tab and use that tab to create supervisor and wallboard accounts.

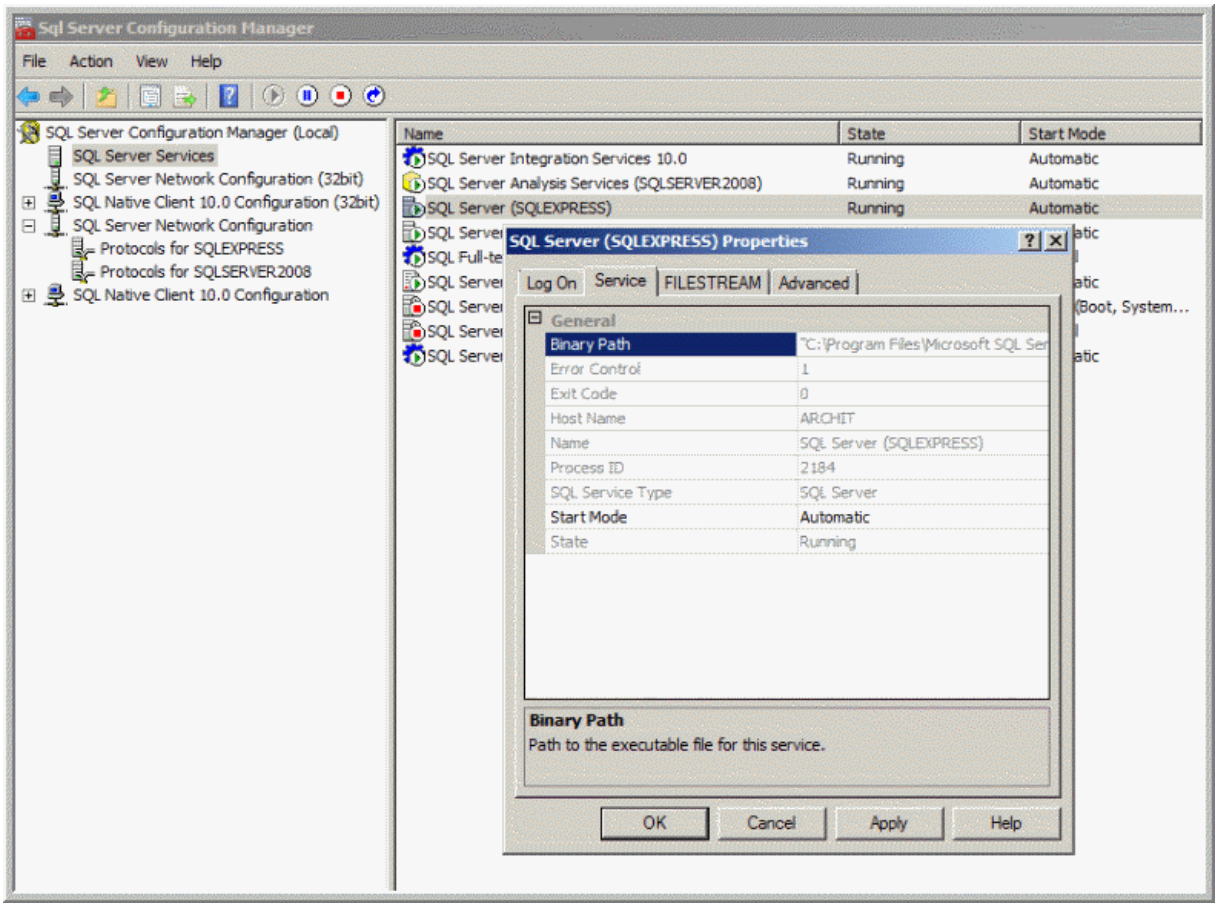
3.15 MS-SQL Configuration

After installation of the MS-SQL and IP Office Customer Call Reporter components, perform the following steps to complete installation. Failure to complete these steps will cause the IP Office Customer Call Reporter to be able to show the queues and agents by name but will not update any statistics.

1. Start **SQL Server Configuration Manager**. (**Start | All Programs | Microsoft SQL Server 2008 | Configuration Tools | SQL Server Configuration Manager**).
2. Select **SQL Server 2008 Network Configuration** and then **Protocols for SQLEXPRESS** or **Protocols for SQL**.



3. Right click on **TCP/IP** and select ***Enable***.
4. Select **SQL Server 2008 Services**.
5. Right click **SQL Server(SQLEXPRESS)** and select **Properties**. Select the **Service** tab and set the **Start Mode** to ***Automatic***. Click **OK**.



3.16 Firewall Settings

If the server is running a firewall then traffic on some additional ports may need to be allowed.

Port		Description
TCP	**80**	User browser access to IP Office Customer Call Reporter.
TCP	**1433**	IP Office Customer Call Reporter to SQL access.
UDP	**1434**	
TCP	**8135**	Wallboard access.

The details here cover the addition of those ports for the default Windows firewall.

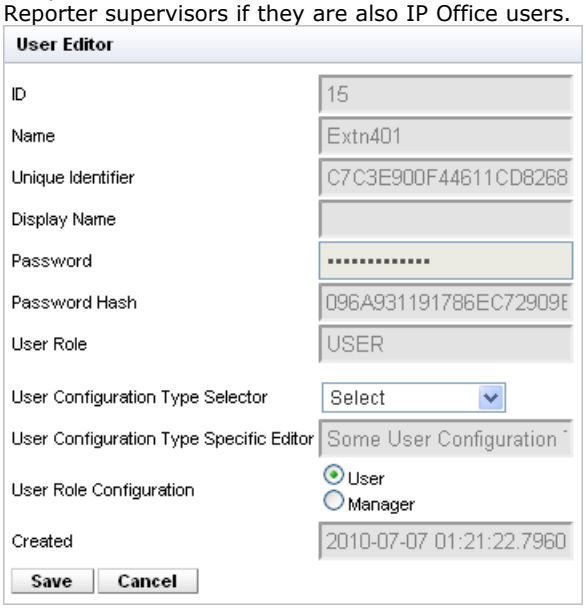
1. Open the Windows **Control Panel**.
2. Open **System and Security** | **Windows Firewall**.
3. Click **Advanced settings**.
4. Click **Inbound Rules** in the left pane.
5. Click **New Rule** in the right pane.
   The **New Inbound Rule Wizard** opens up.
6. Select **Port** and click **Next**.
7. Select **TCP** and enter the port number in the **Specific local ports** field.
8. Click **Next**.
9. Select **Allow the connection** and click **Next**.
10. Check the **Domain**, **Private**, and **Public** check boxes.
11. Click **Next**.
12. Enter a name for the rule and click **Finish**.
13. Click **Outbound Rules** in the left pane and repeat step 5 42 to step 12 42.

3.17 one-X Portal for IP Office Integration

The IP Office Customer Call Reporter option used by supervisors to control agent status uses the one-X Portal for IP Office to send commands to the IP Office system. To configure this requires access to the one-X Portal for IP Office administrator settings.

Enabling the one-X Portal for IP Office User Account

1. Login to the one-X Portal for IP Office using the administrator login.
2. Select **Configuration** and then **Users**.
3. Select one of the user records and click **Edit**. The user record used is unimportant other than use one that is less likely to be deleted as the result of user adds moves and changes. Typically use one of the IP Office Customer Call Reporter supervisors if they are also IP Office users.



4. Change the **User Role Configuration** from ***User*** to ***Manager***.
5. Click **Save**.

6. Select the checkbox next to the user record and then click **Put Selected**.

Enter the one-X Portal for IP Office Account Details in IP Office Customer Call Reporter

1. Login to IP Office Customer Call Reporter as the administrator.
2. Select the **System Settings** tab and expand the **Preferences** section.
3. In the one-X Portal for IP Office section enter the address details of the one-X Portal for IP Office server and the name and password of the user enabled as a one-X Portal for IP Office ***User Manager*** in the one-X Portal for IP Office configuration.

Enabling a Supervisor

In order to use this feature, the IP Office Customer Call Reporter supervisor must have the **Control Agent** setting in their account details enabled.

3.18 Installing Report Builder

For IP Office Customer Call Reporter installation with existing SQL databases

1. Download **SQL 2008 R2 Express Edition with Advanced Services** using one of the following options:
   - From the Microsoft download site at http://www.microsoft.com/downloads/en/details.aspx?familyid=E08766CE-FC9D-448F-9E98-FE84AD61F135&displaylang=en OR
   - From the pre-requisite folder on the IP Office Customer Call Reporter CD.
2. Select the appropriate platform as x86 or x64 and download the setup executable.
3. Use **SQLEXPRADV_x86_ENU.exe** or **SQLEXPRADV_x64_ENU.exe** to upgrade the SQL server database instance to 2008 R2 (if required) and to install Reporting Services.
4. Click **Install.** Do not configure Reporting Services. Other services are not available for existing databases.
5. Run the Reporting Services Configuration Manager from **Start**->**Program Files**->**Microsoft SQL Server 2008 R2**->**Configuration Tools**.
6. Select the Web service URL and then click **Apply** to create the server.
7. Select **Database** and then select **Change Database**.
8. Log in to Windows to connect to the SQL database instance as a system administrator. For example, logging in the "sa" account.
9. Create the reporting database using the Native mode and integrated security options.
10. Install Report Builder 3.0 by visiting the URL http://localhost/ReportServer_<InstanceName>/ReportBuilder/ReportBuilder_3_0_0_0.application on the SQL server, where <**InstanceName**> is the SQL server database instance name, typically SQLEXPRESS.
11. To install Report Builder 3.0:
    - Visit the URL http://localhost/ReportServer_<InstanceName>/ReportBuilder/ReportBuilder_3_0_0_0.application on the SQL server, where <**InstanceName**> is the SQL server database instance name, typically SQLEXPRESS and follow the instructions.
    - Alternatively, click the **Report Builder** icon on the toolbar of the online Report Manager at http://localhost/Reports_<InstanceName>. For detailed information on how to install Report Builder, refer to Installing Report Builder 3.0.

    You may be prompted for Windows domain credentials, or granted access automatically via your network domain login.

    Note: All authenticated users are allowed access by default.

    To enable anonymous authentication to non-Windows account holders, or to tighten security, further instructions are available online at http://technet.microsoft.com/en-us/library/ms365173.aspx.

For new IP Office Customer Call Reporter installations

1. Download **SQL 2008 R2 Express Edition with Advanced Services** from the following Microsoft download site: http://www.microsoft.com/downloads/en/details.aspx?familyid=E08766CE-FC9D-448F-9E98-FE84AD61F135&displaylang=en. Select the appropriate platform as x86 or x64 and download the setup executable.
2. Use **SQLEXPRADV_x86_ENU.exe** or **SQLEXPRADV_x64_ENU.exe** to install a new SQL server database instance and Reporting Services.
3. Select the option **Install the native mode default configuration**.
4. To test the installation of Report Builder 3.0:
   - Visit the URL http://localhost/ReportServer_<InstanceName>/ReportBuilder/ReportBuilder_3_0_0_0.application on the SQL server, where **<InstanceName>** is the SQL server database instance name, typically SQLEXPRESS.
   - Alternatively, click the **Report Builder** icon on the toolbar of the online Report Manager in the following location: http://localhost/Reports_<InstanceName>. **<InstanceName>** is the SQL server database instance name, typically SQLEXPRESS.

You may be prompted for Windows domain credentials, or granted access automatically via your network domain login.

Note: All authenticated users are allowed access by default.

To enable anonymous authentication to non-Windows account holders, or to tighten security, further instructions are available online at http://technet.microsoft.com/en-us/library/ms365173.aspx.

The instructions for new IP Office Customer Call Reporter installations also apply to Standard, Enterprise and Developer editions of SQL 2008 R2 with reporting services installed.

Installing Report Builder 3.0

1. Install the Report Builder using the following url: http://localhost/ReportServer_<InstanceName>/ReportBuilder/ReportBuilder_3_0_0_0.application.
2. Run the Report Builder to install it on your machine. Running the Report Builder will install the correct localized version according to your Windows desktop language setting.

   Alternatively, the Custom Reports tab in the web client displays the **Run report Builder 3.0** link if the web client receives a response from a test HTTP request. If the link is not present, the Web client displays a message that the Report Builder is not available locally, instead you can download it directly from the Internet through the Microsoft download site.

   Note: When you install Report Builder from the IP Office Customer Call Reporter link, the language is set by the Client computer locale. When you install Report Builder manually, you select the language as part of the installation steps.

3.19 Network Printers

The schedule reporting features of IP Office Customer Call Reporter can either e-mail reports to users or print them using a printer designated within the report settings. In order to use the printer option, the printer must be a network printer accessible from the IP Office Customer Call Reporter server computer.

1. Check that the IP Office Customer Call Reporter server computer has been setup for printing to the customer's network printers (click **Start** | **Devices and Printers**). Use the **Add Printer** wizard, if required, to add a network printer.
2. For each network printer, right-click on the printer and select **Properties**.
3. Check that the server computer's default page setup is set to the appropriate paper size used by the printer. If any change is required, select **Printing Preferences**. Due to the potential length of IP Office Customer Call Reporter reports, also enable duplex printing if supported by the printer.
4. Use the **Print Test Page** option to confirm correct operation.

Chapter 4.
Configuring IP Office

4. Configuring IP Office

The IP Office Manager needs the following changes so that communication between IP Office and IP Office Customer Call Reporter occurs. For information about displaying the different panes in IP Office Manager and saving the configuration changes, see the IP Office Manager help.

Agents can indicate that they are in a busy not available state and the reason for being in that state. Descriptions for up to 8 possible reasons need to be entered into the IP Office Manager. The descriptions are then available in menus that the agents can select and also on reports that contain the agents status.

1. **Configuring Busy Not Available Reason Codes** 53.
2. **Configuring IP Office Customer Call Reporter Agents** 50.
3. **Configuring IP Office Customer Call Reporter Queues** 52.
4. **Configuring After Call Work Controls** 54.
5. **IP Office Short Codes** 55.
6. **Button Programming** 55.
7. **Voicemail Report Setup** 56.

How Do IP Office Configuration Changes Affect IP Office Customer Call Reporter

Changes to the IP Office switch configuration has an immediate effect on call routing and therefore call statistics. However, as detailed below, it does not have an immediate effect on the agent and queue names visible in views.

The IP Office Customer Call Reporter updates its information about the queues and agents configured on the IP Office telephone system every 5 minutes. Therefore adding, removing or renaming agents and queues do not affect views immediately. Instead it requires users to wait up to 5 minutes and to then refresh their view by either switching to another view and then back or by logging out and then logging in again.

- **! WARNING**
  The IP Office's IP address is used to tag agent and queue data stored in the IP Office Customer Call Reporter database. If the IP Office's IP address or name is changed after installation, any existing data is still tagged with the previous IP address while new data will be tagged with the new IP address. This may result in reports including multiple entries for each agent and queue.

Agents

- **Adding an Agent to a Queue**
  Wait up to 5 minutes and then refresh the view.
- **Removing an Agent from a Queue**
  Wait up to 5 minutes and then refresh the view. The agent's contribution to the queues performance are still included in the queue statistics but they are not included in the view of agent statistics. The agent's statistics are still accessible within historical reporting.
- **Deleting an Agent**
  Wait up to 5 minutes and then refresh the view. The agents contribution to the queues performance are still included in the queue statistics but they are not included in the view of agent statistics. The agent's statistics are still accessible within historical reporting.
- **Renaming an Agent**
  Wait up to 5 minutes and then refresh the view. The agent's contribution to the queues performance are still included in the queue statistics but the agents appears with their new name and reset statistics. The agent's statistics within historical reporting are split appropriately between the old and new names.
  - **! WARNING**
    When targeting a report on agents, for reports based on the ***Call Details Report*** template, the agent's statistics are split appropriately between the old and new names. For reports based on other templates (***Agent Summary Report***, ***Call Summary Report*** and ***Trace Report***), only the agent's statistics under the current name are reported.

Queue

- **Adding a Queue**
  Before the new queue can be added to any view, it must first be selected in the list of queues available to a supervisor. This is done within the supervisors account details by either the administrator or by supervisors with self-administrator rights for their own account. Again this cannot be done until up to 5 minutes after the new queue was added to the IP Office configuration.
- **Renaming a Queue**
  Wait up to 5 minutes and then refresh the view. The queue name is automatically removed from the view. To add the queue using the new name is the same as for adding a queue detailed above. The queue's statistics within historical reporting are split appropriately between the old and new names.
- **Deleting a Queue**
  Wait up to 5 minutes and then refresh the view. The queue name is automatically removed from the view. The queue's statistics are still accessible within historical reporting.

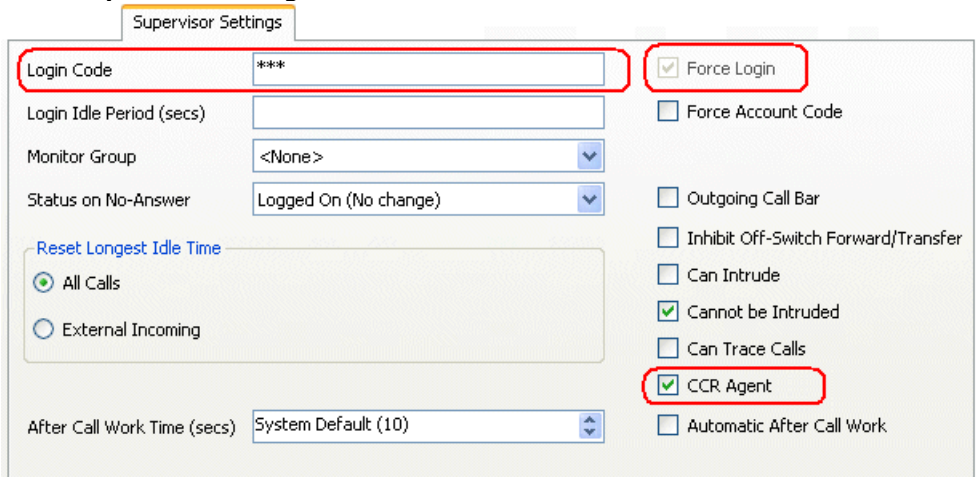
4.1 Agent Configuration

IP Office Customer Call Reporter agents are also IP Office users and are configured through their matching user entry in the IP Office configuration. A maximum of 150 agents are supported in total by IP Office Customer Call Reporter.

The settings below (apart from **Login Code**) can be set within a **User Rights** entry. They can then be applied to the required users. Note however that if this is the case the use of time profiles to control when the User Rights are applied to the users is not supported.

Configuring a User as an IP Office Customer Call Reporter Agent

1. Using IP Office Manager, receive the IP Office system configuration.
2. Select or add the user who you want to configure as IP Office Customer Call Reporter agent.
   - IP Office Customer Call Reporter is designed for call center agents who do not have a permanent physical extension, rather they log in at any available extension when they need to start making and receiving calls.
     - To add a new user selecting the icon and then **User**.
     - On the **User** tab enter a **Name**, **User Name** and **Extension** number for the agent.
     - Use the steps detailed below to configure the new user as an IP Office Customer Call Reporter agent.
3. Select the **Telephony** tab.
4. Select **Supervisor Settings**.

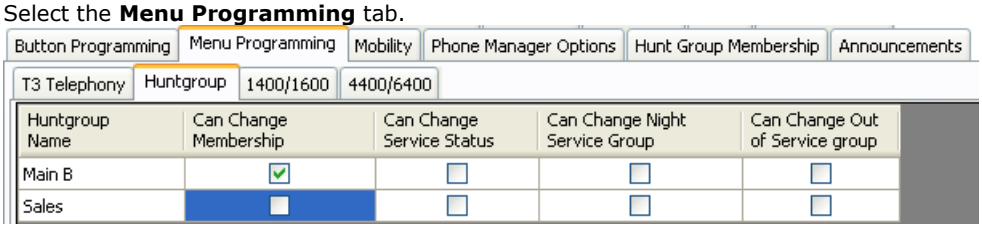


5. Enter a **Login Code** for the user and select **Force Login**. These options are mandatory for IP Office Customer Call Reporter agents.
6. Select the option **Customer Service Agent Profile**.
7. If you are already familiar with After Call Work (ACW) 54 you can configure the agent's ACW settings at this time also.
8. The other options available are described in the IP Office Manager documentation which can be accessed by clicking **Help**.
9. Click **OK**.
   - If this is a new user that you are creating, the system may prompt you with *"Would you like a new VoIP extension created with this number?"*. Select ***No***.
10. When all the configuration changes you require are completed send the configuration back to the IP Office.

User Queue Controls

Through the menus on 1400, 1600, 9400, 9500 and 9600 telephones, agents can be allowed to change the status of their queue membership for a queue between enabled or disabled. The queues to which this option is applicable is configured on the IP Office system.

1. Using IP Office Manager, receive the IP Office system configuration.
2. Select the User who is a IP Office Customer Call Reporter agent.
3. Select the **Menu Programming** tab.



4. The hunt groups (queues) to which the user belongs are listed and the actions that the user can perform on each group are selected.
   - All the selections affect the options accessible through telephone menus. The **Can Change Membership** selection also affects the one-X Portal for IP Office Agent Control Gadget.
5. Adjust the settings are required. Click **OK**.
6. When all the configuration changes you require are completed send the configuration back to the IP Office.

4.2 Hunt Group (Queue) Configuration

For an IP Office hunt group to have its call and agent data recorded by IP Office Customer Call Reporter it must be configured as being an IP Office Customer Call Reporter Agent Group. There are no IP Office Customer Call Reporter license restrictions on how many hunt groups can be configured for IP Office Customer Call Reporter usage.

- A **Customer Service Agent Profile Group** should only contain users who have been configured as **IP Office Customer Call Reporter Agents** 50. IP Office Manager will provide warnings if non-agents are included in the group. During operation the IP Office will not present queue calls to a non-agent and IP Office Customer Call Reporter will not display information for non-agents.
- IP Office Customer Call Reporter currently does not support Small Community Networking (SCN). Therefore the use of remote hunt group members and or members hot desking to another IP Office is not supported.
- ***Collective*** groups are not supported for IP Office Customer Call Reporter operation.
- For group's configured as a **Customer Service Agent Profile Group**, the **Queuing On** option on the **Queueing** tab is automatically enabled and cannot be disabled.
- If overflow is being used, it is only supported using other IP Office Customer Call Reporter groups.
- IP Office Customer Call Reporter expects hunt groups to contain at least one agent. Groups configured without any agents are not visible to IP Office Customer Call Reporter.

Configuring a Hunt Group for IP Office Customer Call Reporter

1. Using IP Office Manager, receive the IP Office system configuration.
2. Create a hunt group and add members as normal. The only restriction to observe is that the selected members must all be users who are configured as **CCR Agents**.
3. On the Hunt Group tab select the option **Customer Service Agent Profile Group**.
4. If Manager validation is running, Manager will warn if any of the group members are not IP Office Customer Call Reporter Agents.
5. Click **OK**.
6. When all the configuration changes you require are completed send the configuration back to the IP Office.

4.3 Reason Codes

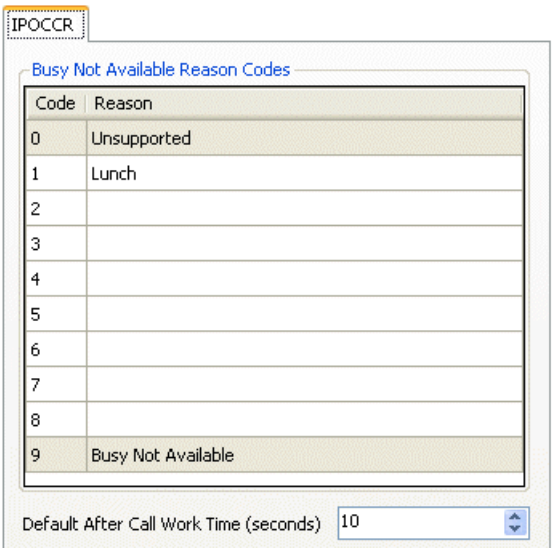
Reason codes are used in conjunction with the Busy Not Available state that can be selected by IP Office Customer Call Reporter agents.

When an agent selects Busy Not Available using a programmable button, the telephone also prompts them to select one reason codes entered in the IP Office configuration. The selected reason code is then included in information reported by the IP Office Customer Call Reporter.

For reports based on the **Agent Time Card** report template, time spent in Busy Not Available with reason code 1 is reported as ***Lunch***. Time spent in Busy Not Available for any other reason codes is reported as ***Breaks***.

Entering Reason Codes

1. Using IP Office Manager, receive the IP Office system configuration.
2. Select **System**.
3. Select the **IPOCCR** tab.



4. For each number enter a reason code. Each reason can be up to 31 characters. Enter the codes in order starting with those that are most likely to be used as this simplifies selection of the required reason code from the telephone. Reason codes ***0*** and ***9*** are fixed and are used as follows:
   - **0: Unsupported**
     This reason code is used for agents using telephones that do not allow the selection of a reason code.
   - **9: Busy Not Available**
     This reason code is used if the agent is using a telephone that allows reason code selection but fails to select one when they enable Busy Not Answer state. For example, this may occur if the agent enables Busy Not Available using a short code or Phone Manager or is forced into Busy Not Available state by the IP Office's **Agent Status on No Answer** feature.
5. Click **OK**.
6. When all the configuration changes you require are completed send the configuration back to the IP Office.

4.4 After Call Work Controls

After Call Work (ACW) is used after a call to indicate that the agent is performing call related task that need to be done before answering another queue call.

While in ACW:

- IP Office Customer Call Reporter reports the agent's state as being Busy ACW and includes the agent in Agents ACW statistics.
- No queue calls are present to the agent to be answered.
- There is no change to the agent's telephone, for example dial tone changes.
- If the agent has an ACW button, that button indicates that they are in ACW state and can be used to exit the state.
- An ACW timeout for the agent is started which will automatically take them out of ACW when it expires.

Through the IP Office configuration you can control:

- Whether an agent is allowed to use ACW.
- If an agent is allowed to use ACW, you can set how long they can remain that state before the system automatically cancels the ACW. This time can be set at both a system default level and on a per agent basis.
- If automatic ACW should be applied to an agent whenever they finish a queue call.
- Provide a button for the agent to view whether they are in ACW state and to cancel/select it as required.
- Provide short codes for the same.

Setting the Default ACW Timeout

A timeout is applied whenever an agent goes into the ACW state. When the timeout expires the agent is automatically taken out of the ACW state. By default all agents use the system default ACW timeout.

1. Using IP Office Manager, receive the IP Office system configuration.
2. Select **System**.
3. Select the **IPOCCR** tab.
4. Set the **Default After Call Work Time** to the required number of seconds (Range = 10 to 999 seconds).

Setting an Agent Specific ACW Timeout/Disabling Agent ACW

The timeout applied to automatically cancel ACW can be adjusted for each individual agent if required. This can include disabling the use of ACW.

1. Using IP Office Manager, receive the IP Office system configuration.
2. Select **User** and select the agent.
3. Select the **Telephony** tab and then the **Supervisor Settings** sub-tab.
4. Set the **After Call Work Time** to the required number of seconds (Range = 0 to 999 seconds). Setting a value of 0 disables ACW operation for the user.
5. If you want ACW state to be applied automatically after every queue call enable the **Automatic After Call Work** option.

ACW Button

For agent's using ACW, configure a programmable button for ACW. The button will allow them to manually enter and exit the ACW state and will indicate when they are in the ACW state. Refer to Button Programming 55.

After Call Work Short Codes

Agent For agents without programmable buttons, two short codes are available to allow them to manually enter and exit the ACW state. The two features do not use any telephone number value and do not toggle. The ACW timeout applicable for the user is still applied. The short code features are:

- **Start ACW**
- **Clear ACW**

4.5 IP Office Short Codes

The follow IP Office short code features are useful for agents working with IP Office Customer Call Reporter. These can be used to add system, user or user rights short codes. For full details refer to the IP Office Manager application help.

- **Extn Login**
  Allows agents to login at an extension.
- **Extn Logout**
  Allows a logged in agent to log off from an extension.
- **Start After Call Work**
  Allows an agent to change their status to After Call Work. The status will be automatically cancels after the agent's configured After Call Work time expires.
- **Clear After Call Work**
  Allows an agent to end After Call Work status.
- **Do Not Disturb On**
  Allows an agent to change their status should be changed to Busy Not Available. When that state is selected using as short code the Reason Code is default to Busy Not Available.
- **Do Not Disturb Off**
  Allows an agent to end Busy Not Available status.
- **Hunt Group Enable / Hunt Group Disable**
  Short codes using these features can be used to enable/disable the agent's membership of particular queues.
- **Change Login Code**
  Allows an agent to change their extension login code.

4.6 Button Programming

If the agent is going to be logging in at Avaya telephones with programmable buttons, it may be useful to program a number of button features for the agent. These are added through the agent's **Button Programming** tab in the IP Office configuration. For full details refer to the IP Office Manager application help.

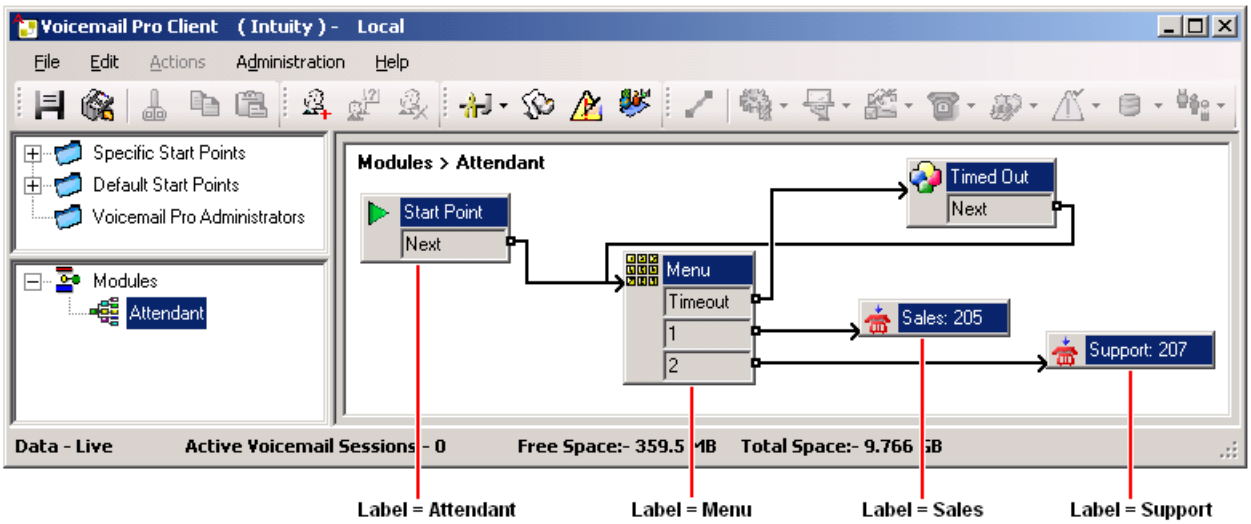
In addition to the default **Call Appearance** buttons, configure the following buttons:

- **Login** *(Advanced -> Extension -> Extn Login)*
  Allows the agent to log out from the extension they are currently using.
- **ACW** *(Advanced -> Miscellaneous -> After Call Work)*
  This button allows the user to manually enter and exit the After Call Work state reported by IP Office Customer Call Reporter. The button lamp or icon will indicate when the agent is in that state, including if the state is automatically applied and ended by the IP Office system.
- **DND On** *(Advanced -> Do Not Disturb -> Do Not Disturb On)*
  This button allows the user to enter and exit the Busy Not Available state reported by IP Office Customer Call Reporter. The button lamp or icon will indicate when the agent is in that state.
  - Agents using a button on the following telephones will be requested to select a reason code 53 if any have been set: 1400, 1600, 2400, 4600, 5400, 5600, 9400, 9500 and 9600 Series telephones with available programmable buttons.
- **HGEna** *(Advanced -> Hunt Group -> Hunt Group Enable)*
  Hunt group enable buttons can be used by agent to enable and disable their membership of a group (queue) or their membership of all groups. For specific groups the button is programmed with the group number or name.

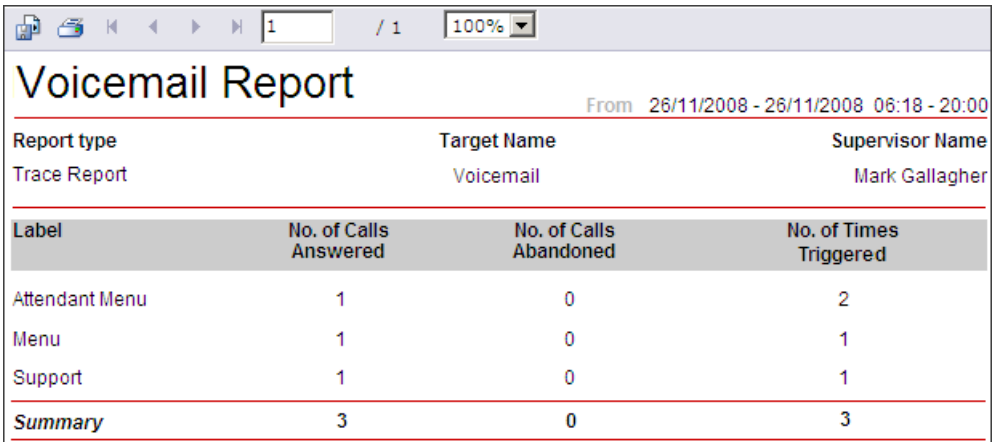
4.7 Voicemail Report Setup

Reports based on the IP Office Customer Call Reporter's Voicemail Report template can be used to track the usage of customized call flows that have been added to Voicemail Pro. The reporting is not automatic, only specific labels that have been assigned to call flow actions are reported on. This is best explained by example.

The example Voicemail Pro call flow below is a simple auto attendant that lets callers select to be transferred to either sales or support.



Reporting names have been assigned to some of the actions in the call flow. For example, the **Start Point** action has been given the name ***Attendant*** (see Adding a Reporting Name to a Voicemail Action 56). The names are used in IP Office Customer Call Reporter reports based on the Voicemail Report template.



Voicemail Report

From 26/11/2008 - 26/11/2008 06:18 - 20:00

Report type	Target Name	Supervisor Name
Trace Report	Voicemail	Mark Gallagher

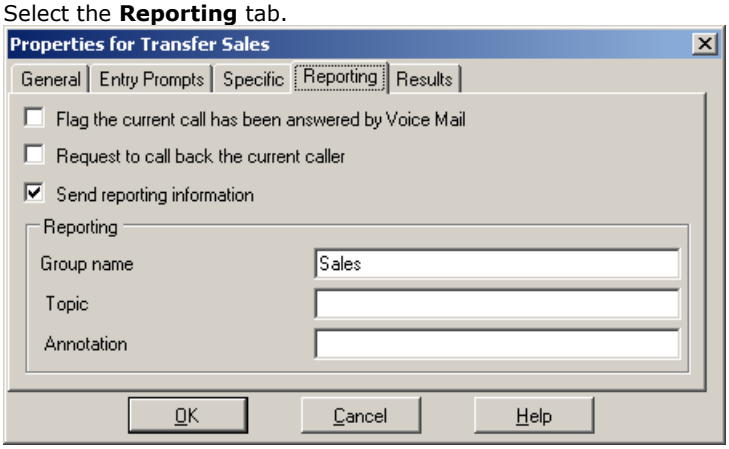
Label	No. of Calls Answered	No. of Calls Abandoned	No. of Times Triggered
Attendant Menu	1	0	2
Menu	1	0	1
Support	1	0	1
Summary	3	0	3

- **Name**
  This is the text name assigned to an action or actions in Voicemail Pro customized call flows.
  - The same name can be assigned to several actions and to actions in different call flows. For example, if you have several call flows with actions that transfer calls to your Sales team, you can name all those action "Sales". This will result in a single reporting line in the Voicemail report for calls that went to from voicemail to sales independent the actual call flow used.
- **No. of Calls**
  When a call reaches a named action it is counted as an answered call for that name.
- **No. Lost Calls**
  If, having reached a named action, the call is disconnected by the caller or by the voicemail server before it reaches another named action, it is counted as lost.
- **No. of Times Triggered**
  Each time a call reaches a named action, the call is counted as having triggered that name. The same call can be counted as triggering the same action more than once if the call flow loops. Note however that the call must go via another named action rather than simply looping from one of the named actions own result.

Adding a Reporting Name to a Voicemail Action

1. Double-click on the action.

2. Select the **Reporting** tab.

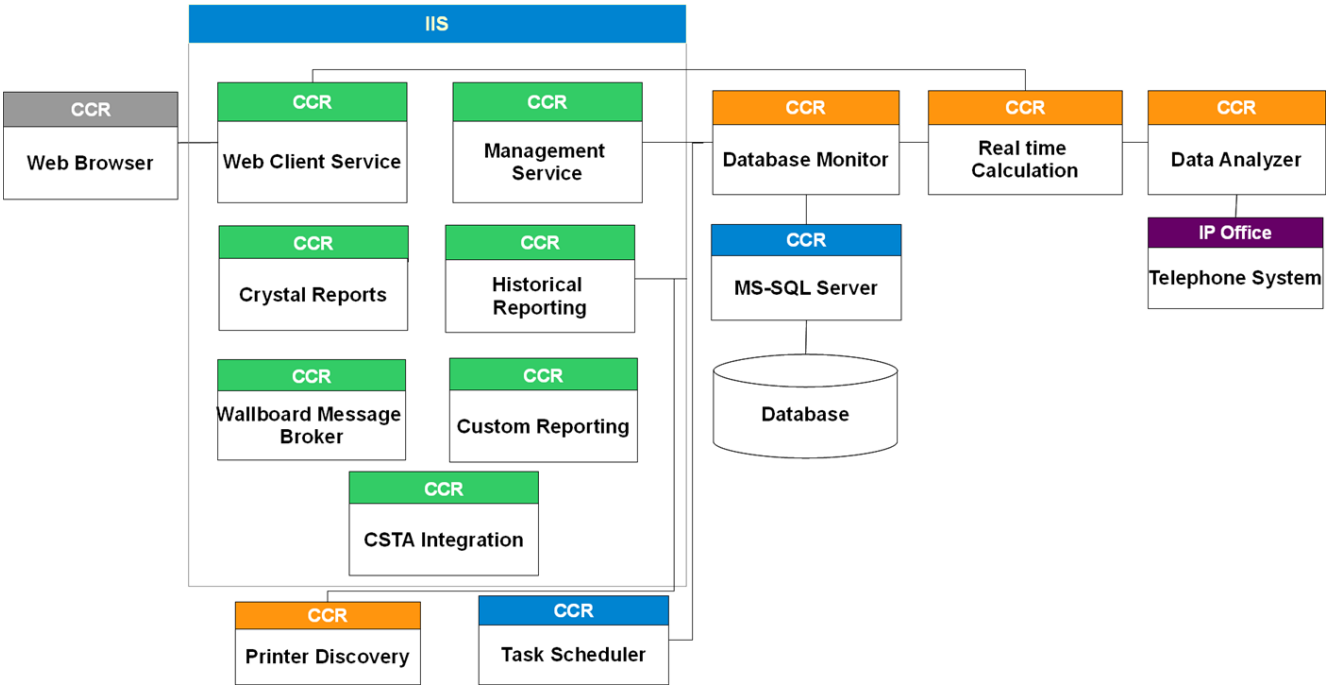


3. Select **Send reporting information**.
4. In the **Group name** field enter the name to associate with the action. This is the name that will be used in reports based on the Voicemail Report template. None of the other fields are used by IP Office Customer Center Reporter.
5. Click **OK**.

Chapter 5.
Maintenance and Diagnostics

5. Maintenance and Diagnostics

The diagram below gives a schematic view of the components of IP Office Customer Call Reporter.



The following are installed as Windows services:

- **Data Analyzer Service** *(Data Analyzer Service /DataAnalyser.exe)*
  This IP Office Customer Call Reporter component handles communication with the IP Office telephone system. It creates an SSI connection using an IP Office service user login name and password. It then uses that connection to receive data and passes that data to the Real Time Calculation service.
- **Real Time Calculation Service** *(Avaya IP Office Customer Call Reporter Real Time Service /AvayaSb IP Office Customer Call ReporterTService.exe)*
  This service receives data from the Data Analyzer service. It performs the required calculations on the raw data and then passes data to the Database Monitor and Web Client services.
- **Database Monitor** *(Avaya IP Office Customer Call Reporter Real Time Database Monitor)*
  This IP Office Customer Call Reporter service manages data request and inputs from other IP Office Customer Call Reporter components to the MS-SQL database.
  - Note that this is not the IP Office Customer Call Reporter Database component selected during IP Office Customer Call Reporter installation. That is an installation process that creates the IP Office Customer Call Reporter database structure.
- **Printer Discovery Service** *(Avaya IP Office Customer Call Reporter Printer Discovery Service / Avaya.Sbcc. Printer.Discovery.exe)*
  This component is used when creating reports and running reports to access any network printers available to the IP Office Customer Call Reporter server computer.
- **MS-SQL Service** *(MSQLServer or SQLExpress)*
  This service manages input and output to the database used by IP Office Customer Call Reporter.
- **Avaya IPOCCR Alarm Keep Alive Service**
  This service manages the continuous operation of real-time alarms, independent of Web Client activation.

The following are installed as Virtual Directories used by the IIS web server:

- **Web Client Service** *(IP Office Customer Call Reporter Web Client)*
  This components handles the provision of web pages in response from web clients (browsers). It can incorporate data from both the Real Time Calculation Service and Historical Reporting service.
- **Wallboard Message Broker Service**
  This broker service communicates scheduled and instant wallboard messages between the Web Client and active wallboards.
- **CSTA Integration Service**
  This service integrates the Web Client with a CSTA III compatible provider in order to provide control agent functions.
- **Management Service** *(IP Office Customer Call Reporter Management Service)*
  This components controls access to IP Office Customer Call Reporter.

- **Historical Reporting Service** *(IP Office Customer Call Reporter Historical Reporting Service)*
  This component is used to design and schedule reports.
- **Crystal Reports Viewer** *(Crystal Report Viewers)*
  This component is used to generate the visual layout of reports.
- **SQL Server Reporting Services**
  This component is used to generate the visual layout of customized reports.
- **Custom Reporting Web Service**
  This component is used to design and generate customized reports

Additional components:

- **Task Scheduler**
  This is a standard Windows application on the IP Office Customer Call Reporter server computer. Reports scheduled for automatic output appear as entries in its scheduled tasks. Note however that they are managed and controlled through IP Office Customer Call Reporter.
- **SQL Database**
  This is a Microsoft database used to store call records and system configuration.

5.1 Status Lamp

The status lamp (, , or) shown by the IP Office Customer Call Reporter web client is an indicator of the status of the overall IP Office Customer Call Reporter application.

- **Green**
  IP Office Customer Call Reporter is running.
- **Yellow**
  Some parts of IP Office Customer Call Reporter are still in the process of starting.
- **Red**
  There may be a problem in IP Office Customer Call Reporter. This may not be critical but should be investigated.

When a problem is indicated, the **Status** screen can be used to indicate which component is not operating correctly and, if required, restart the component.

- The Printer Discovery Service will show as red if the password for the administrator account it uses is changed. You can change the password 61 used by the service without having to reinstall IP Office Customer Call Reporter.

It is important to understand that the status lamp is not a monitor of the IP Office Customer Call Reporter application status. It is driven by the events that the IP Office Customer Call Reporter components write to the server computer's event log 76. If an event is missed, removed or did not occur in the expected order, it is possible for the status lamp to indicate that there is a problem even if the IP Office Customer Call Reporter application is operating correctly. To resolve this, clear the Windows Application event log and then restarting the component through the IP Office Customer Call Reporter's **System Settings** tab.

5.2 Printer Discovery Service Password Change

During IP Office Customer Call Reporter software installation 35 an administrator name and password is requested for use by the IP Office Customer Call Reporter's printer discovery service. If the password for that account is changed, the printer discovery service will not operate. The following process can be used to change the password used by the printer discovery service.

1. On the server computer, open the folder **Program Files\Avaya\CCR\CCRWebClient\CCRPrinterDiscoveryService**.
2. Locate and double-click **SBCCResetServicePassword.exe**.
3. In the menu that appears enter the new password that matches the one being used by the administrator account and click **Reset**.
4. Close the menu.
5. Log in to IP Office Customer Call Reporter as the administrator and restart the **Printer Discovery Service**.
6. Log out of IP Office Customer Call Reporter and then log in again.

5.3 Changing the IP Office IP Address

- **! WARNING**
  The IP Office's IP address is used to tag agent and queue data stored in the IP Office Customer Call Reporter database. If the IP Office's IP address or name is changed after installation, any existing data is still tagged with the previous IP address while new data will be tagged with the new IP address. This may result in reports including multiple entries for each agent and queue.

The details of the IP Office to which the IP Office Customer Call Reporter should connect are set and can be changed through the administrator's **Systems Settings** tab. See Editing the IP Office Switch Connection 40.

5.4 Upgrading CCR

The IP Office Customer Call Reporter components can be upgraded without requiring the previous version to be uninstalled. All data and settings are retained. However you must read the appropriate IP Office Technical Bulletins for the new IP Office Customer Call Reporter software and for the IP Office core software. They contain notes critical to the upgrade process.

- Verify that your system meets the Database Requirements 12 and the Software Requirements 20 before starting with an upgrade.
- During the upgrade, the username and password details used for the original database access are required.
- Backup the database 72 before starting with an upgrade.
- If the installer detects that it cannot upgrade the database due to size limitations (MS-SQL 2008 Express Edition R2 has a 10GB size limit), it displays a warning and cancels the installation. The options in this scenario are to either upgrade to the MS-SQL to a licensed version of MS-SQL or to remove data from the database.
- Following an upgrade, log in as the administrator and go to the **System Settings** tab. In the **Switches** section, select **Modify** and re-enter the IP Office switch details even if they have not changed.
- **! WARNING**
  Access to the IP Office Customer Call Reporter database should only be done by persons with MS-SQL experience. Avaya does not accept any liability or responsibility for loss of data or other problems resulting from direct database access. Changing the database may cause IP Office Customer Call Reporter to not function as expected.

Removing Data from the Database

Backup the database 72 before performing this process. In the ***Prerequisite\Tools*** folder of the IP Office Customer Call Reporter installation files, locate the SQL script file **PerformDeletion.sql**.

Copy the file to a location on the server computer and open the file for editing with a text editor. The file contains values that indicate the date for the oldest data to retain in the database when the script is run. Any earlier data will be removed.

Edit the values to the date required by editing the three values shown below. Enter the date correctly, as the SQL process does not apply any date validation logic.

```
SET @YEAR = 2009
SET @MONTH = 1
SET @DAY = 1
```

After editing the file, run the SQL script.

Upgrading to IP Office Customer Call Reporter 8.0

IP Office Customer Call Reporter 8.0 supports upgrade from only the previous two versions - 7.0 and 6.1. To upgrade earlier versions of IP Office Customer Call Reporter, you must first upgrade your setup to one of the two previous versions.

Note: You must upgrade the IP Office Customer Call Reporter database instance from SQL Server 2005 to SQL Server 2008 R2 Express with Advanced Services, SQL Server 2008 R2 Express, or any commercial edition of SQL Server 2008. Advanced Services are required to support the Custom Reporting feature introduced in the 8.0 release.

Upgrading Database Instance to SQL Server 2008 R2 Express with Advanced Services

1. Having logged in as a local administrator on the database server, locate the *CCR prerequisites* folder and run */x86/SQL Server 2008 R2/SQLEXPRADV_x86_ENU.exe* or */x64/SQL Server 2008 R2/SQLEXPRADV_x64_ENU.exe* depending on the operating system installed on the server.
   The **SQL Server Installation Center** window is displayed.
2. In the left pane of the **SQL Server Installation Center** window, click **Installation**.
3. In the right pane, click **Upgrade from SQL Server 2000, SQL Server 2005 or SQL Server 2008**.
   The **SQL Server 2008 R2 Setup** window is displayed.
4. Check the **I accept the license terms** checkbox, and click **Next**.
   The **Upgrade to SQL Server 2008 R2** window is displayed.
5. In the **Instance to upgrade** list, select the IP Office Customer Call Reporter database instance (typically, **SQLEXPRESS**), and click **Next**.
6. Click **Next**.
   The upgrade of the database instance begins.
7. Click **Close** to complete.

Note: You must uninstall any previous version of SQL Server Management Tools before installing the 2008 or 2008 R2 version of the tools.

5.5 Removing/Reinstalling CCR

IP Office Customer Call Reporter can be removed in the same was a most Windows applications. From the **Control Panel** select **Add or Remove Programs**. Select **IP Office Customer Call Reporter** and **Remove**.

The database is not removed and the software pre-requisites are not removed.

Note that when IP Office Customer Call Reporter is removed, it uses an aggressive removal process. All files in the application folder are removed and the folder is deleted.

When IP Office Customer Call Reporter is removed, the system will prompt you whether to remove housekeeping tasks. Select ***No*** only if you are planning to reinstall IP Office Customer Call Reporter and want to retain the current housekeeping tasks.

5.6 Custom Call Mapping

There are 2 main aspects to the IP Office Customer Call Reporter call map which can be customized:

- **Caller Location XML Files**
  These files used to match the caller's country, area and local area based on their caller ID number. The default files supplied with IP Office Customer Call Reporter cover all country codes, the major areas in most countries and local areas for major countries. The files are loaded when IP Office Customer Call Reporter is started. If any changes are made the server must be restarted to load the updated files.
  - The call matching for India and for the United States of America is done using requests to PTT services in those countries rather than the XML call mapping files described here.
- **Map Overlay KML Files**
  The call map is displayed over maps provided via Internet connection. In addition to this, an overlay can be included on the map on which the customer can mark locations significant to them or their own customers. The locations can be marked with custom pins, lines and areas. This is done using a file written in KML (Keyhole Markup Language) which is supported by most on-line mapping applications.

5.6.1 Call Mapping XML Files

The map files supplied with IP Office Customer Call Reporter match all calls to a country and for most countries will further match the call to a dialing area in that country. However, the files can be edited if required to add further details and to match local codes within areas.

Note that editing the files will require the IP Office Customer Call Reporter services to be restarted so that IP Office Customer Call Reporter updates the copies of the files that it holds in its cache memory.

- **USA and India Call Mapping**
  The call matching for India and for the United States of America is done using requests to PTT services in those countries rather than the XML call mapping files described here.
- **Internet Access**
  Call mapping uses Internet requests from both the IP Office Customer Call Reporter clients and the servers. When requests are made for location information, the IP Office Customer Call Reporter caches that data in order to reduce the need for future requests.
  - **! WARNING**
    Edit the map files only if you are confident with editing XML. Use an XML editor that provides functions for tag insertion and validation so that the file structure is maintained correctly. An incorrectly formatted XML file may cause call mapping lookups to fail.

The XML files used for the call map are stored in a compressed file on the IP Office Customer Call Reporter server. There are three main types of file as described below, their contents and how they are used are similar.

1. **Country_Codes.xml File**
   This file (there is only one) is used to match the calling number to a country code ***X***. The match is done using the first 4 digits excluding any leading zeros. When a match is found, the name and location information in the file is associated with the pin used to represent the call on the map.
2. **Area_Codes_*X*.xml Files**
   For each country code ***X***, an optional area codes file can be used to improve the location match down to area ***Y***. If the file is present, the first 5 remaining calling number digits are checked against it for a possible area match. If one is found, the associated information is added to the country code match.
3. **Local_Area_Codes_*X*_*Y*.xml Files**
   For each area code ***Y*** in country code ***X***, an optional file of local area codes can be used to further improve the location match. If the file is present, the first 10 remaining calling number digits are checked against it for a possible local area match. If one is found, the associated information is added to that from the area and country code matches.

Common XML Tags

The following XML tags are used in all three different file types.

Tag Example	Descriptions
`<Name>United Kingdom</Name>`	Sets the name to be shown by pins matching the entry. If the entry does not include <*Location*> and/or <*BestView*> information (see below), the name is used to as part of the information request sent to the external mapping service.

`<Location>`
`<Latitude>54.0710002183</Latitude>`
`<Longitude>-2.78399951756</Longitude>`
`</Location>`
	Sets the location to be used the calls matching the entry. The nested sub tags for <*Latitude*> and <*Longitude*> contain the geographic location information in degrees decimal.
	If the matched entry does not contain any <*Location*> information, the combined <*Name*> tag values of the country, area and local code matches are used for a location lookup as described above.

`<BestView>`
`<North>61.1023293435574</North>`
`<South>48.5473461449146</South>`
`<East>11.3827431946993</East>`
`<West>-17.72739328444</West>`
`</BestView>`
	Sets the positions of the boundaries for the map view when the Supervisor selects **Best View**. When there are multiple pins on the map, the boundaries are taken from the most southerly, northerly, easterly and westerly values.
	If the matched entry does not contain any <*BestView*> information, the combined <*Name*> tag values of the country, area and local code matches are used for a location lookup as described above.

5.6.1.1 Example Mapping File Operation

The example below shows how a call from 0044 113 203 3222 is matched against the call mapping XML files in order to resolve the location as being "Headingley, Leeds, United Kingdom".

1. Country Code Matching - The 'Country_Codes.xml' File

The first match uses the **Country_Codes.xml** file. The client looks for a match on the first 4 digits, ignoring any leading zeros. If no match is found, it looks for a match on the first 3 digits, then the first 2 digits and then the first digit until a match is found. The match provides a country name for the call and may also provide location and viewing information.

The <*Location*> information provides a location for the call pin. The <*BestView*> information provides boundaries for the map when best view is selected. When there are multiple call pins, the <*BestView*> for each call is used to resolve the most northern, eastern, southern and western boundaries for the view. If there is no <*Location*> or <*BestView*> information for the entry, the <*Name*> value is checked for a match with the external geolocation service to obtain <*Location*> and <*BestView*> information.

- **Example**
  Using the first 4 digits after any leading zeros, having not found a match for 4411 and then for 441, the 44 in 0044 113 203 3222 matches the <*CountryCode Code="44"*> entry **44** in the ***Country_Codes.xml*** file. That entry names the location as being the ***United Kingdom*** and provides location information.

```
<?xml version="1.0" encoding="utf-8" ?>
<CountryCodes>
<CountryCode Code="1">
 <Name>United States of America</Name>
</CountryCode>
 ...

<CountryCode Code="44">
 <Name>United Kingdom</Name>
 <Location>
  <Latitude>54.0710002183</Latitude>
  <Longitude>-2.78399951756</Longitude>
 </Location>
 <BestView>
  <North>61.1023293435574</North>
  <South>48.5473461449146</South>
  <East>11.3827431946993</East>
  <West>-17.72739328444</West>
 </BestView>
</CountryCode>
...

</CountryCodes>
```

2. Area Code Matching - The 'Area_Codes_44.xml' File

After matching a country code, the server looks for an area code match using the digit remaining after the matched country code. For example, having matched the country code **44**, the remaining digits are checked against the file **Area_Codes_44.xml**.

If no such files exist, the country code match is used as the best match and no further matching is attempted.

If the file exists, the server looks in it for a match, the using the first 5 remaining digits, the first 4 remaining digits and so on.

If no match occurs, the country code match is used as the best match and no further matching is attempted. If a match is found, its details are appended to those of the country code match.

Like the country codes file, the entries in this type of file can also have <*Location*> and <*BestView*> information. If not present Otherwise <*Name*> lookup is used to obtain that information. For the lookup, the <*Name*> values from the country code match and the area code match are combined.

- **Example**
  From 0044 113 230 3222, the leading zeroes and country code already matched are ignored.
  - From the remaining digits 113 230 3222, the first 5 are used for area code matching, starting with 5 digits, then 4, then 3 and so on.
  - In this case, having not found a match for 11323 or 1132, the 113 matches the ***<AreaCode Code="113">*** entry. This names the location as being ***Leeds*** and provides more accurate location information.

```
<?xml version="1.0" encoding="utf-8"?>
```

```
<AreaCodes>
<AreaCode Code="07">
 <Name>Mobile Network</Name>
</AreaCode>
...

<AreaCode Code="113">
 <Name>Leeds</Name>
 <Location>
  <Latitude>53.7944926321</Latitude>
  <Longitude>-1.54658854007</Longitude>
 </Location>
 <BestView>
  <North>53.8869423419237</North>
  <South>53.7018390744925</South>
  <East>-1.33942678570747</East>
  <West>-1.75375029444695</West>
 </BestView>
</AreaCode>
...

</AreaCodes>
```

3. Local Code Matching - The 'Local_Codes_44_113.xml' File

After matching an area code, the server looks for a local code match on the remaining digits. For example, having matched the country code **44** and area code **113**, the remaining digits checked for a match against the file **Local_Codes_44_113.xml**. If no such files exists then the previous matches are used as the best match.

If the file does exist, the server looks for a match, starting as before with the first 12 remaining digits. If no match occurs then the previous area code match is used as the best match.

Like the country codes and area codes files, the entries in this type of file can also have <*Location*> and <*BestView*> information or use <*Name*> lookup to obtain that information. For the lookup the <*Name*> values from the country code, area code and local area code matches are combined.

- **Example**
  From 0044 113 230 3222, the leading zeroes, country code and area code already matched are ignored. That leaves the remaining digits 230 3222.
  - The first 10 of the remaining digits are used for local code matching, starting with 10 digits, then 9, then 8 and so on.
  - In this case, having not found a match for 2303222 or 230322 or 23032, the 2303 matches the ***<LocalCode Code="2303">*** entry. This names the location as being ***Headingley***.

```
<?xml version="1.0" encoding="utf-8"?>
<LocalCodes>
 <LocalCode Code="2300">
  <Name>Adel Leeds</Name>
 </LocalCode>
 ...
 <LocalCode Code="2303">
  <Name>Headingley</Name>
 </LocalCode>
 ...

</LocalCodes>
```

4. Final Matching for Pin Location

Each match that has occurred for the call can include <Location> and or <BestView> information. Only the information from the last match is used. However if the last match does not contain either of those elements, the combined <Name> information for the from the matches is used to request location and viewing information.

- **Example**
  The last match for this call, the local codes match does not include an location or view information. The combined names, 'Headingley Leeds United Kingdom' are used to request that information. The results are cached for use with other calls from the same location in order to prevent successive requests.

5.6.1.2 Editing the Mapping Files

The call mapping files are found on the IP Office Customer Call Reporter server in the ***C:\Program Files\Avaya\IPOCCR\CCRWebClient\CallMapping*** folder. They are stored in the file ***CallMappingApplication.xap*** which is a zipped archive file.

The following tools are required to edit the files:

- **WinZip**
  This or a similar application is required to extract and replace files from the ***.xap*** file.
- **XML Editor**
  The XML files use UTF-8 character encoding to support characters with diacritic marks such as **ä**. Some older plain text file editors such as Notepad do not support this and would corrupt those characters. Use an editor that supports UTF-8.

Tips

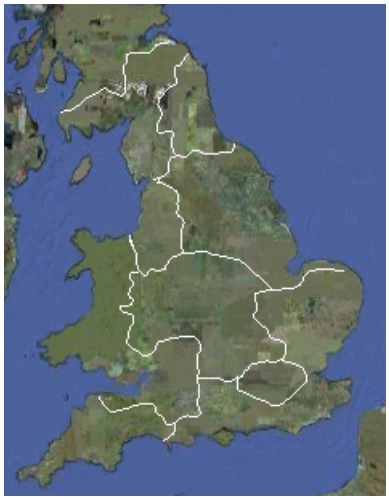
- The call mapping uses location information expressed in degrees decimal. If you only have access to the required values in Degrees, Minutes and Seconds, convert using the formula *Degrees + (Minutes/60) + (Seconds/3600)*.
  - Remember that longer numbers will be matched first. For example, if there are entries for 1141 and 114 and the digits to be matched are 11412, the match to 1141 will occur first.

Editing the Mapping Files

1. Start by making two copies of the ***CallMappingApplication.xap*** file in another folder location. One to be edited and one to be kept as a backup.
2. Change the name of the copy being kept as a backup to identify it as such.
3. Change the extension of the copy for editing from ***.xap*** to ***.zip***, ie. ***CallMappingApplication.zip***.
4. Using WinZip or similar, extract the files.
   - In this set of files, add any new XML file required or edit the existing files.
   - Maintain the correct XML tag structure for the file.
5. Using WinZip or similar, put the updated and new files into the ***CallMappingApplication.zip*** file.
6. Change the name of the file back to ***CallMappingApplication.xap***.
7. Use this file to replace the one in the **\CCRWebClient\CallMapping** folder.
8. Restart the IP Office Customer Call Reporter server.

5.6.2 The Map Overlay File

KML (Keyhole Markup Language) is an XML language used to add place markers and objects to online maps. It was originally developed by Google but is now a standard maintained by the Open Geospatial Consortium (OGC) (http://www.opengeospatial.org/standards/kml)and supported by many mapping applications.



IP Office Customer Call Reporter supports the display of a KML overlay on the customer map. For example, the customer below has an overlay that indicates the broadcast areas of different television companies. By using this overlay, the supervisor can visually gauge the effect of their advertising campaigns with the different broadcasters.

IP Office Customer Call Reporter supports two methods for adding an overlay. Whichever method is used, only the last overlay to be loaded is shown.

- A default KML file can be added to the file set on the server. That overlay will then be automatically loaded when a supervisor starts the customer map.
- Once a supervisor is running the customer map, they can click on the icon to browse to a local KML file and load that file.

A good tutorial for KML is provided by Google at http://code.google.com/apis/kml/documentation/kml_tut.html. There are also a wide range of tools, such as Google Earth and Scribble Maps, which can be used to create a KML file by drawing rather than having to manually code the file.

Though KML is a standard, the options that can be used and are displayed depend on which software is doing the mapping. However, in most cases, any XML tags used that are not supported by an application are simply ignored. This does mean that features added to a KML file that work in the tools used to create that KML may not work when the file is used by IP Office Customer Call Reporter or another application.

A summary of the major types of object that can be specified in a KML file are:

Feature	Description		IP Office Customer Call Reporter Support
Placemarkers	These are text labels and icons placed at a specific location. The placemarker can also include a description which is displayed when clicked.	Yes	• The <Description> element is not used. • Placemarkers do not display a default icon if no icon is specified. To add an icon it must be explicitly specified in the style settings applied to the placemarker. The icon image must be accessible via a web address specified in the placemarker entry. • By default, the placemarker icons are positioned centrally on the specified location. The central positioning causes icons such as pins or arrows to appear to be wrongly positioned or to be moving as you zoom in or zoom out. To overcome this, use icon images with a transparent background such that the visible pointer is at the center of the icon.
Paths	These are lines drawn that can be used to indicate a route or a boundary. For example you could add lines to the KML overlay dividing different sales areas.	Yes	• Polygons and paths are supported. However, since IP Office Customer Call Reporter only uses a direct overhead view, attributes such as altitude, extrude and tessellate are ignored.
Polygons	These are shapes that can be used to indicate the area of a building or some significant landmark.	Yes	
Ground Overlays	These are pictures which can be attached to a particular location.	No	• Ground overlays and screens overlays are not supported and so will not be displayed if present in the KML overlay file.
Screen Overlays	These are pictures that can be attached to a selected edge of the map display area.	No	• Ground overlays and screens overlays are not supported and so will not be displayed if present in the KML overlay file.

- IP Office Customer Call Reporter only supports a single overlay in the customer map view at any time. This will either be the default KML if created or one loaded by the individual customer map user.
- IP Office Customer Call Reporter does not support the compressed KMZ format or dynamic KML files.

Placemark Example

The XML below is an example of a placemarker useable with IP Office Customer Call Reporter. The <Style> section is used to specify the icon to use for the location. Note the comments in the table above regarding the use of icon images.




```
<Placemark>
 <name>IP Office TechPubs</name>
 <Style>
 <IconStyle>
   <scale>0.8</scale>
   <Icon>

<href>http://maps.google.com/mapfiles/kml/paddle/red-square.png</href>
   </Icon>
  </IconStyle>
 </Style>
 <Point>

<coordinates>-0.008836284947953965,52.05040885002961,0</coordinates>
 </Point>
</Placemark>
```

Path Example

A path can be used to add a line or lines to the map. These can be used to separate different areas of the map, for example to divide the map into different sales regions.



```
<Placemark>
<Style id="sh_ylw-pushpin">
</IconStyle>
<LineStyle>
<width>2.4</width>
</LineStyle>
</Style>
<LineString>
<coordinates>-2.680146289317991,51.57275436555602,0
-1.776984872718374,52.66416157063565,0  0.1170468810618597,52.89688880171811,0
</coordinates>
</LineString>
</Placemark>
```

Polygon Example

A polygon is a series of line which join to encompass an area and to which a fill color can be applied.



```
<Placemark>
<name>Luxoft</name>
<LookAt>
<longitude>-0.2272866330307488</longitude>
<latitude>51.80228560385747</latitude>
<altitude>0</altitude>
<range>156.1954261588477</range>
<heading>1.427702441655444</heading>
</LookAt>
<Polygon>
<outerBoundaryIs>
<LinearRing>
<coordinates>-0.2276117036078951,51.80266892039562,0 -0.2273490404018097,51.8017779
</LinearRing>
</outerBoundaryIs>
</Polygon>
</Placemark>
```

5.6.2.1 Editing the Default Overlay File

1. Start by making two copies of the ***CallMappingApplication.xap*** file in another folder location. One to be edited and one to be kept as a backup.
2. Change the name of the copy being kept as a backup to identify it as such.
3. Change the extension of the copy for editing from ***.xap*** to ***.zip***, ie. ***CallMappingApplication.zip***.
4. Using WinZip or similar, extract the files.
   - Replace the Default.kml file with your own file or edit the existing file.
   - Maintain the correct XML tag structure for the file.
5. Using WinZip or similar, put the updated and new files into the ***CallMappingApplication.zip*** file.

6. Change the name of the file back to ***CallMappingApplication.xap***.
7. Use this file to replace the one in the **\CCRWebClient\CallMapping** folder.
8. Restart the IP Office Customer Call Reporter server.

5.7 Database Actions

IP Office Customer Call Reporter 8.0 supports database backups run as a IP Office Customer Call Reporter housekeeping task. These can be configured by supervisors with **Self-Administer** rights. Refer to the IP Office Customer Call Reporter user guide for details.

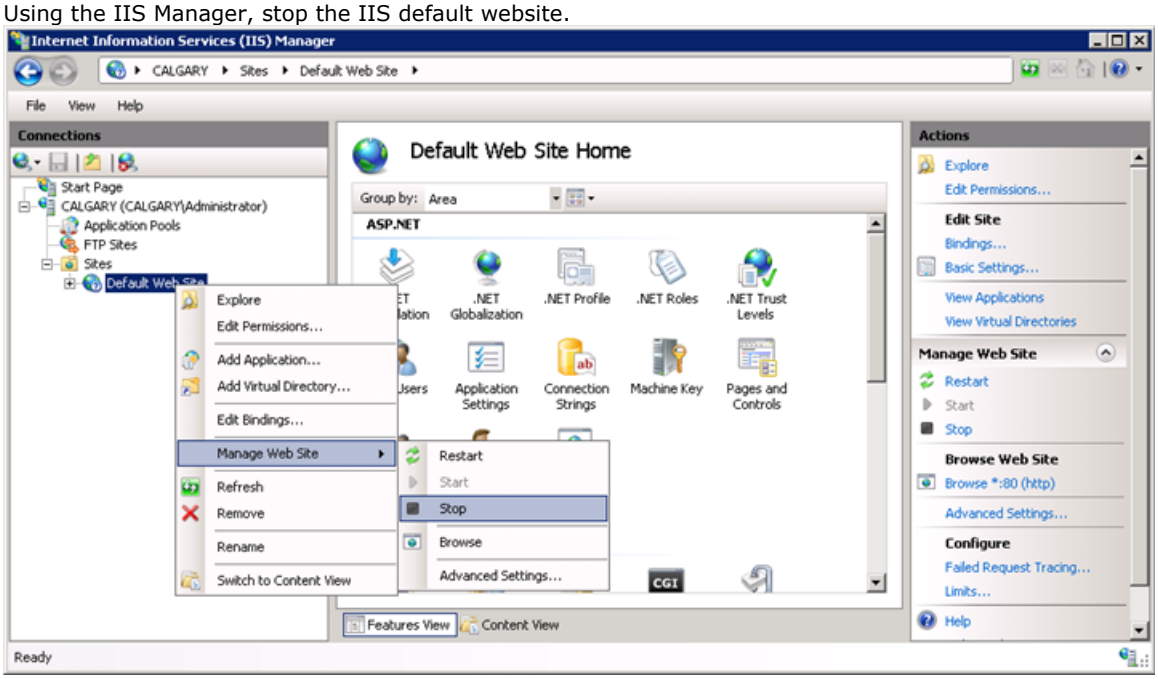
- **! WARNING**
  Access to the IP Office Customer Call Reporter database should only be done by persons with MS-SQL experience. Avaya does not accept any liability or responsibility for loss of data or other problems resulting from direct database access. Changing the database may cause IP Office Customer Call Reporter to not function as expected.

5.7.1 Database Restore

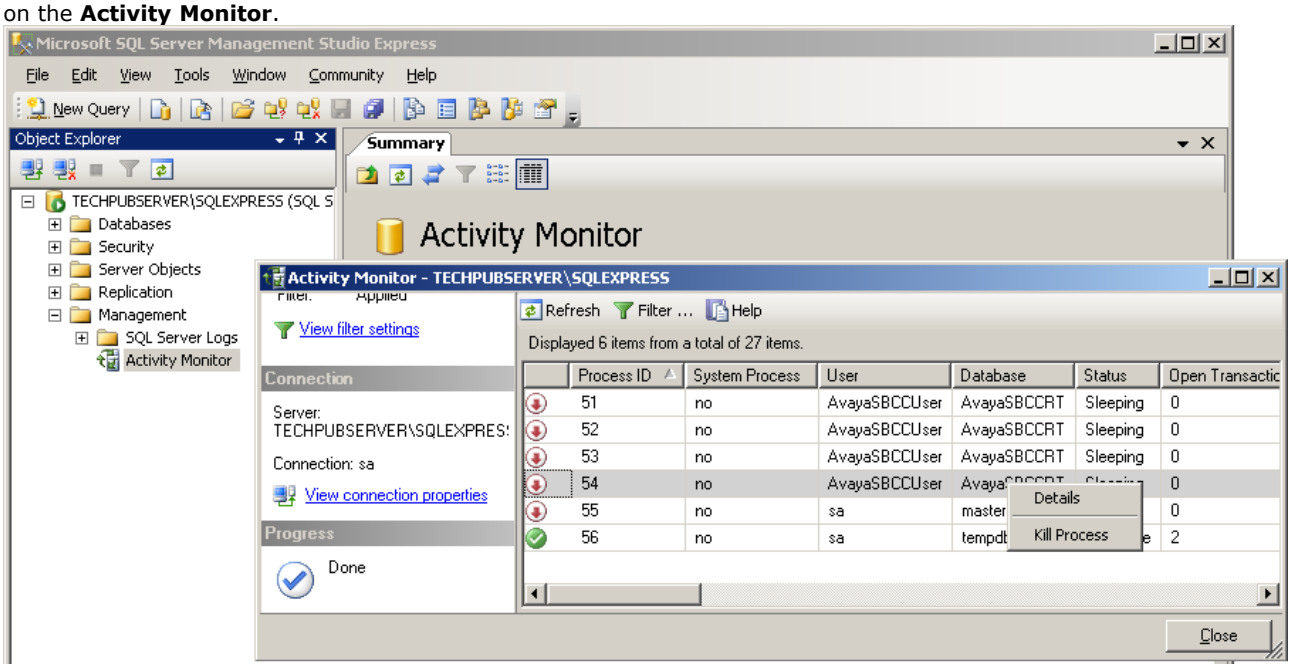
Use this process as the last resort to restore the IP Office Customer Call Reporter database from a previous backup. During this process, the IP Office Customer Call Reporter application and associated services including IIS will need to be stopped.

- **! WARNING**
  Access to the IP Office Customer Call Reporter database should only be done by persons with MS-SQL experience. Avaya does not accept any liability or responsibility for loss of data or other problems resulting from direct database access. Changing the database may cause IP Office Customer Call Reporter to not function as expected.

1. Stop the IP Office Customer Call Reporter services79.
2. Using the IIS Manager, stop the IIS default website.

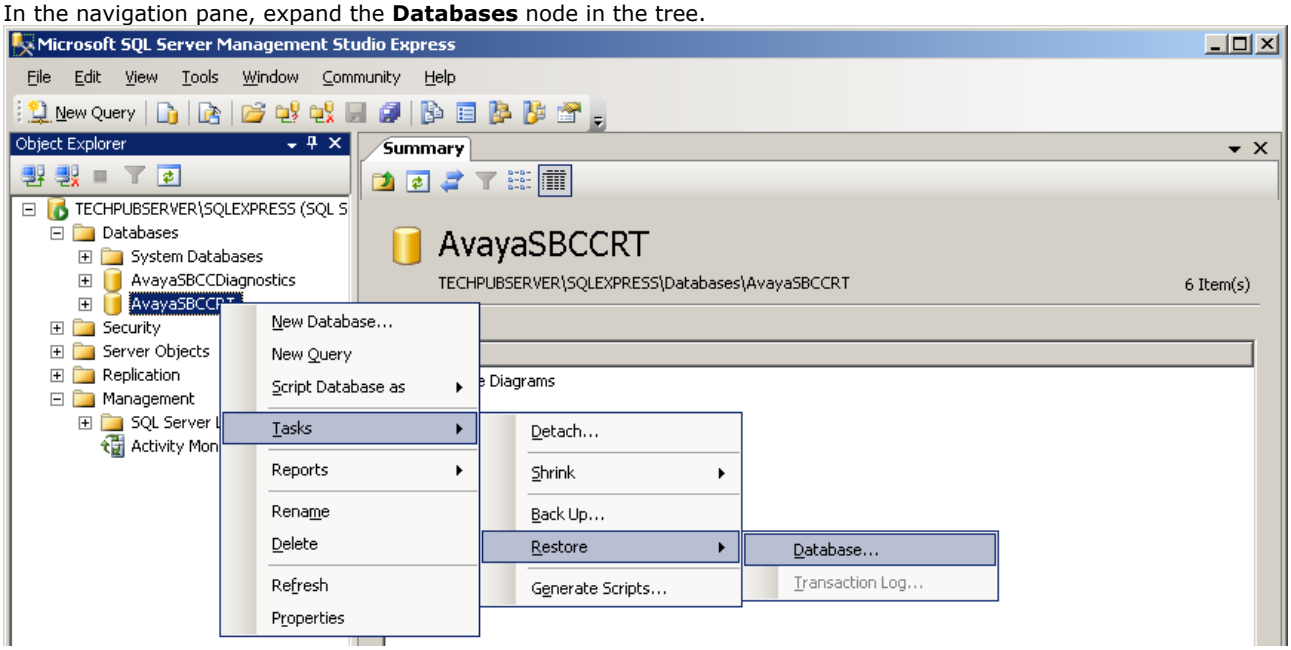


3. Start MS-SQL Server Management Studio Express. In the navigation pane, expand **Management** and double-click on the **Activity Monitor**.

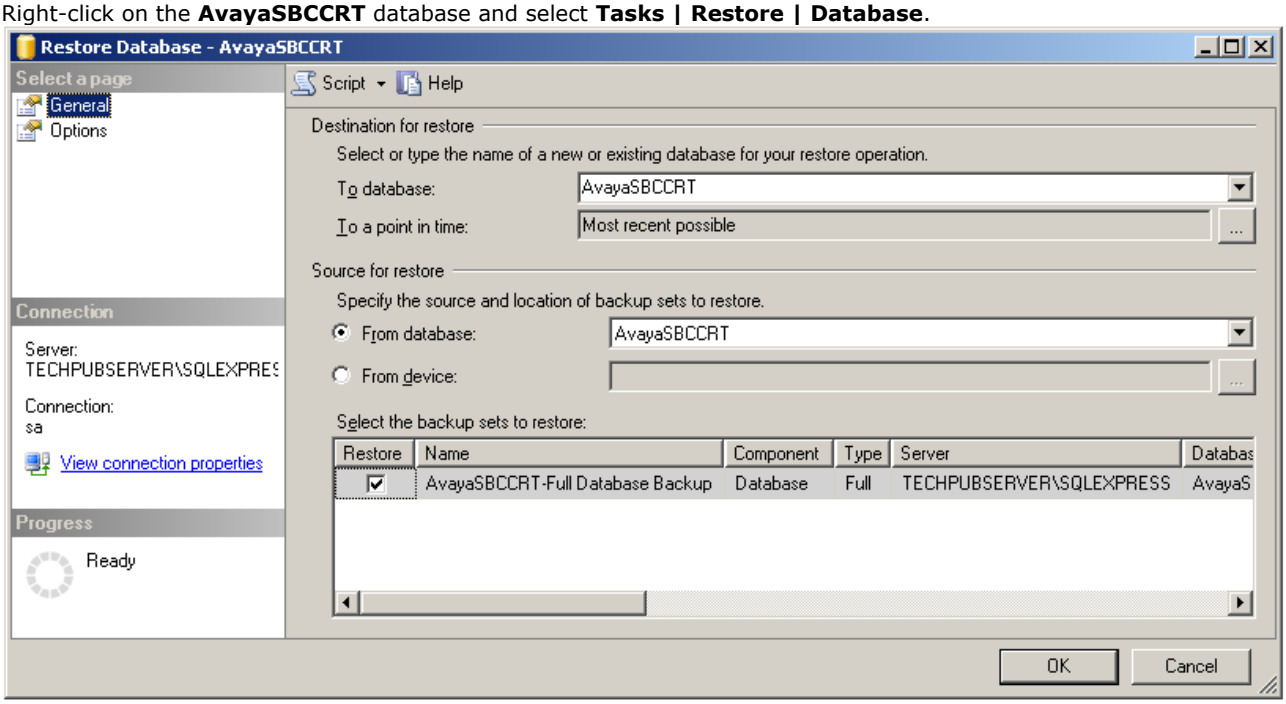


4. Right-click and kill the processes connected to the ***AvayaSBCCRT*** database. Click **Refresh** to check that the processes have stopped. Leave the Activity Monitor window open as it may be required to kill any process connections that automatically restart before the database restoration is completed.

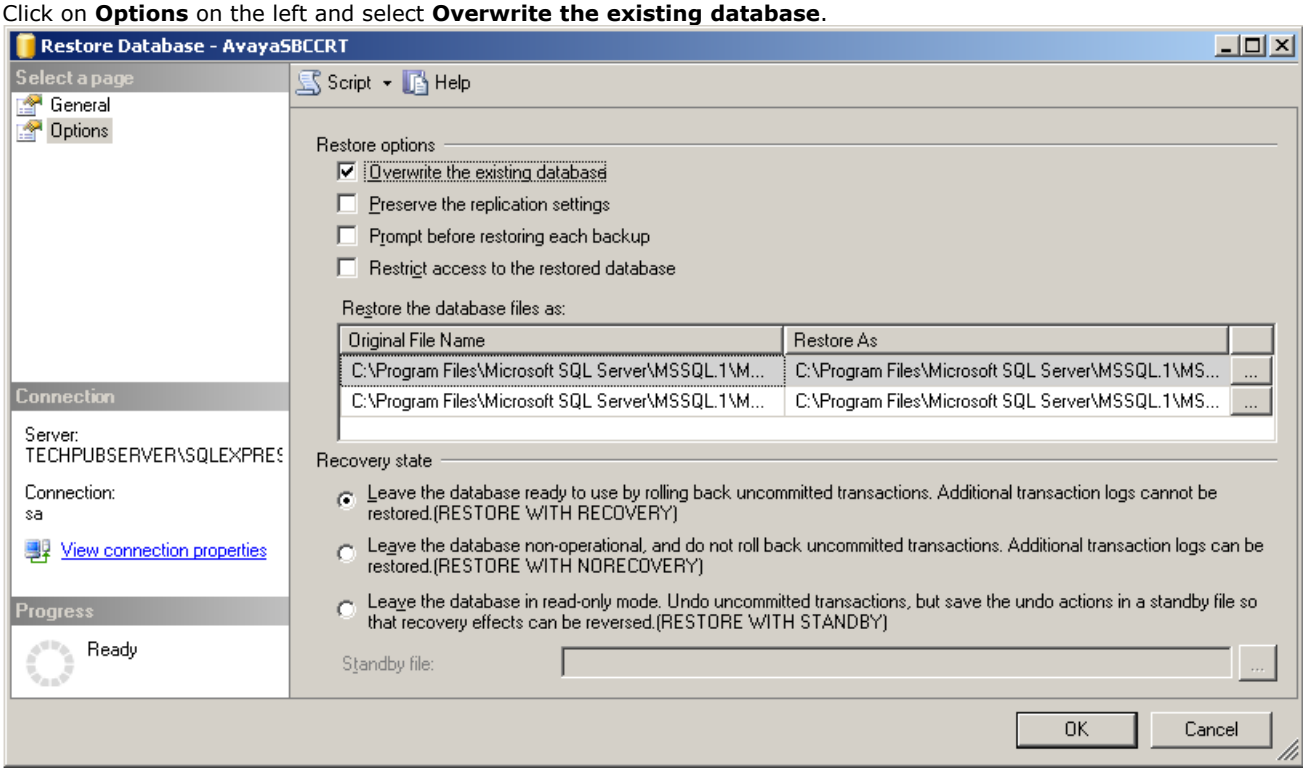
5. In the navigation pane, expand the **Databases** node in the tree.



6. Right-click on the **AvayaSBCCRT** database and select **Tasks | Restore | Database**.



7. Select the previous backup that you want to use for the restore action. Select the check box next to the backup.
8. Click on **Options** on the left and select **Overwrite the existing database**.



9. Click **OK**. The progress of the restoration will be indicated. If an error occurs stating that the restore cannot proceed due to connections to the database, recheck the activity monitor.
10. If the restore is used to move the database to a new or different install of SQL, you will also be required to restore the orphaned database users 75 before restarting the IP Office Customer Call Reporter server.
11. Once the restore has been completed, restart the IP Office Customer Call Reporter server.

5.7.2 Restoring Orphaned Database Users

During the installation of IP Office Customer Call Reporter, the IP Office Customer Call Reporter database is created in MS-SQL and 2 SQL users are created for use by the IP Office Customer Call Reporter services to read and write information from the database. The details of those database users are stored in the database. Those details include an SID that is specific to the particular installation of MS-SQL.

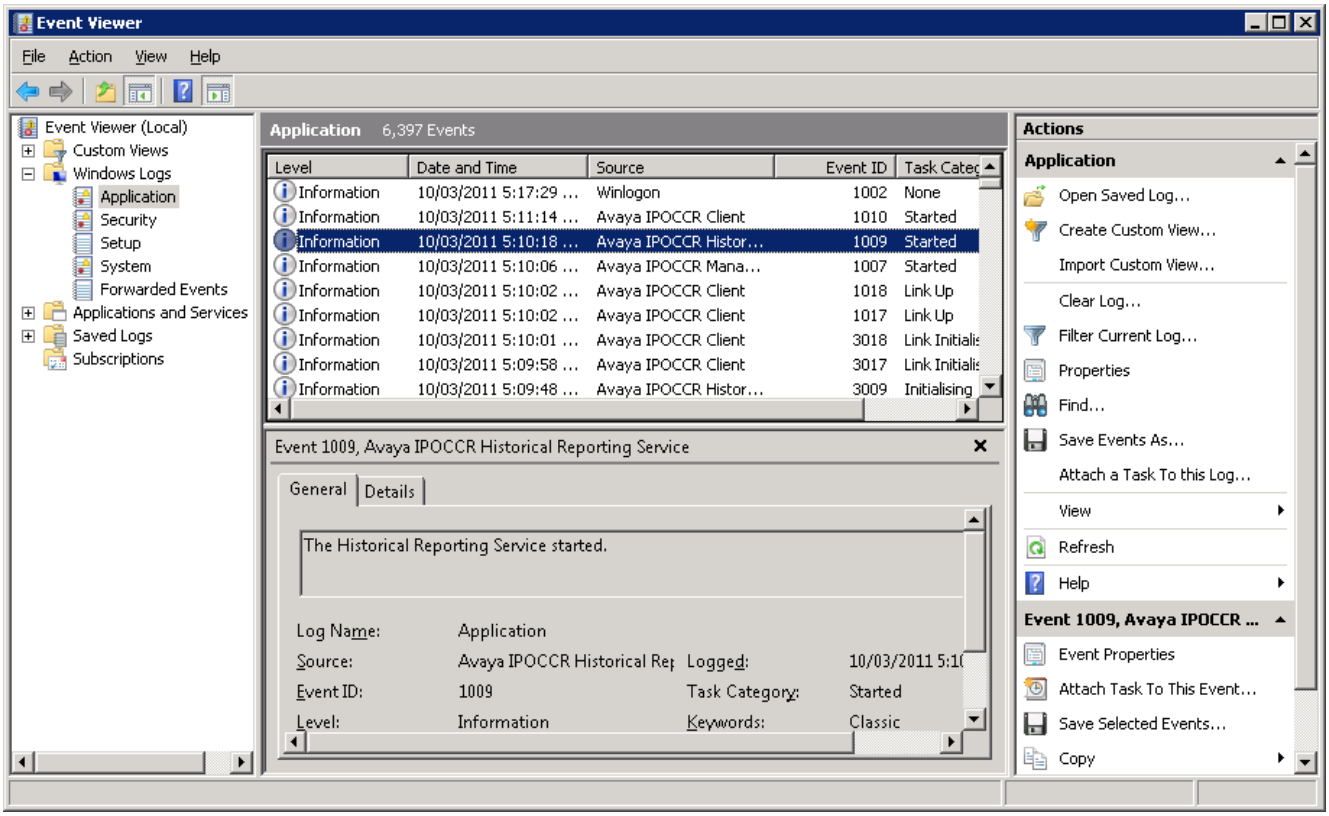
If the IP Office Customer Call Reporter database is moved to another installation of MS-SQL, the SID details stored with the 2 database users needs to be updated using the process below.

- **! WARNING**
  Access to the IP Office Customer Call Reporter database should only be done by persons with MS-SQL experience. Avaya does not accept any liability or responsibility for loss of data or other problems resulting from direct database access. Changing the database may cause IP Office Customer Call Reporter to not function as expected.

1. In Microsoft SQL Sever Management Studio Express, right-click on the **AvayaSBCCRT** database and select **New Query**.
2. Enter the query ***EXEC sp_change_users_login 'Report'*** and click on **Execute**.
3. The **Results** tab below the query window will list the orphaned users - ***AvayaSBCCUser***, ***AvayaSBCCManager***, and ***AvayaSBCCReader***.
4. In the query window change the query command to ***EXEC sp_change_users_login 'Auto_Fix', 'AvayaSBCCUser'*** and click **Execute**.
5. In the query window change the query command to ***EXEC sp_change_users_login 'Auto_Fix', 'AvayaSBCCManager'*** and click **Execute**.
6. In the query window change the query command to ***EXEC sp_change_users_login 'Auto_Fix', 'AvayaSBCCReader'*** and click **Execute**.
7. Complete the database restoration by restarting the IP Office Customer Call Reporter server.

5.8 Event Logging

The various components of IP Office Customer Call Reporter[59] write event messages to the server computer's event log. The tables below lists the application event log messages that may appear for IP Office Customer Call Reporter.



Information Events

Event	Description
1001	The Data Analyzer Service established communication with the IP Office.
1002	The Data Analyzer Service established communication with the Realtime Calculation Service.
1003	The Realtime Calculation Service established communication with the Database.
1004	The Historical Reporting Service established communication with the Database.
1005	The Management Service established communication with the Database.
1006	The Data Analyzer Service started.
1007	The Management Service started.
1008	The Realtime Calculation Service started.
1009	The Historical Reporting Service started.
1010	The Client started.
1011	The Report Scheduler Task started.
1012	The Printer Discovery Service started.
1013	The Report Scheduler Task established communication with the Historical Reporting Service.
1014	The Database Monitor Service started.
1015	The Client established communication with the Management Service.
1016	The Client established communication with the Historical Reporting Service.
1017	The Client established communication with the Printer Discovery Service.
1018	The Client established communication with the Realtime Calculation Service.
1019	The Report Scheduler Task stopped.
1020	The Database Monitor Service established communication with the Database.
1021	The Report Scheduler Task established communication with the Management Service.
2001	The Data Analyzer Service experienced communication failure with the IP Office.
2002	The Data Analyzer Service experienced communication failure with the Realtime Calculation Service.
2003	The Realtime Calculation Service experienced communication failure with the Database.
2004	The Historical Reporting Service experienced communication failure with the Database.
2005	The Management Service experienced communication failure with the Database.

Event	Description
2006	The Client experienced communication failure with the Management Service.
2007	The Client experienced communication failure with the Realtime Calculation Service.
2008	The Client experienced communication failure with the Historical Reporting Service.
2009	The Data Analyzer Service stopped.
2010	The Management Service stopped.
2011	The Realtime Calculation Service stopped.
2012	The Historical Reporting Service stopped.
2013	The Printer Discovery Service stopped.
2014	The Report Scheduler Task experienced communication failure with the Historical Reporting Service.
2015	The Database Monitor Service stopped.
2016	The Client experienced communication failure with the Printer Discovery Service.
2017	The Client stopped.
2018	The Database Monitor Service experienced communication failure with the Database.
2019	The Report Scheduler Task experienced communication failure with the Management Service.
3001	The Data Analyzer Service is initializing communication with the IP Office.
3002	The Data Analyzer Service is initializing communication with the Realtime Calculation Service.
3003	The Realtime Calculation Service is initializing communication with the Database.
3004	The Historical Reporting Service is initializing communication with the Database.
3005	The Management Service is initializing communication with the Database.
3006	The Data Analyzer Service is initializing.
3007	The Management Service is initializing.
3008	The Realtime Calculation Service is initializing.
3009	The Historical Reporting Service is initializing.
3010	The Client is initializing.
3011	The Report Scheduler Task is initializing.
3012	The Printer Discovery Service is initializing.
3013	The Report Scheduler Task is initializing communication with the Historical Reporting Service.
3014	The Database Monitor Service is initializing.
3015	The Client is initializing communication with the Management Service.
3016	The Client is initializing communication with the Historical Reporting Service.
3017	The Client is initializing communication with the Printer Discovery Service.
3018	The Client is initializing communication with the Realtime Calculation Service.
3019	The Database Monitor is initializing communication with the Database.
3020	The Report Scheduler Task is initializing communication with the Management Service.

5.9 Windows Task Scheduler

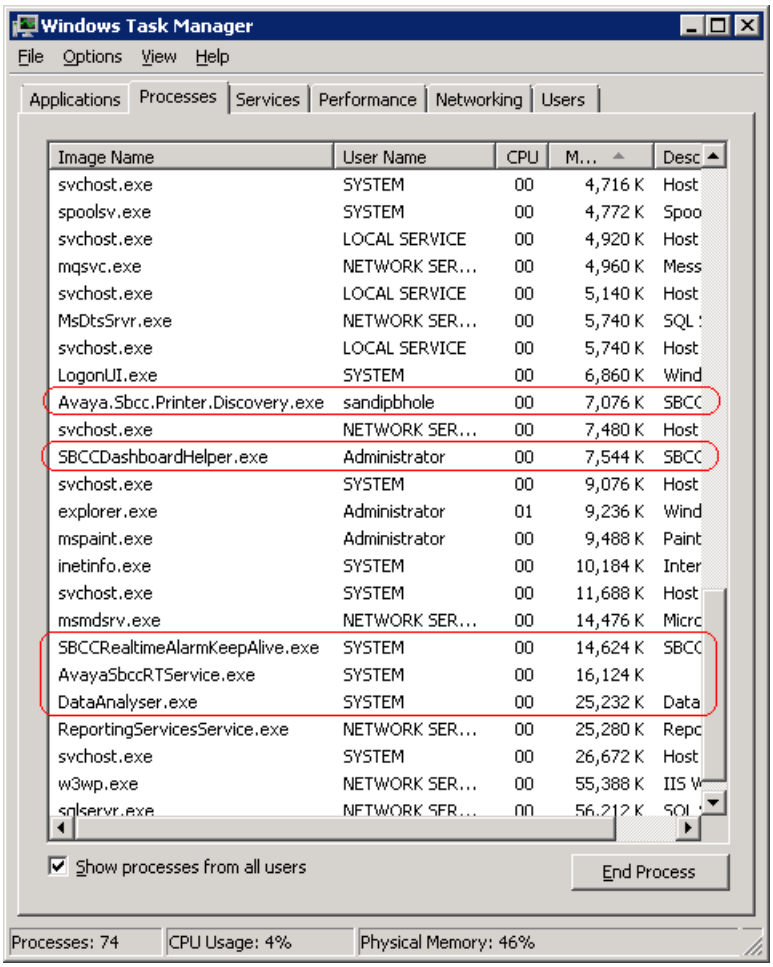
Reports and tasks scheduled by IP Office Customer Call Reporter supervisors appear both in the supervisor's Scheduler tab and in the Windows Scheduled Tasks windows on the IP Office Customer Call Reporter server computer.

While the report tasks can be amended or deleted in the Windows Scheduled Tasks windows those changes will be overwritten by the IP Office Customer Call Reporter application.

If IP Office Customer Call Reporter is removed, scheduled reports and tasks are not necessarily removed from the Widows task scheduler. These should be deleted manually. If these orphaned tasks are not removed and IP Office Customer Call Reporter is then reinstalled, those orphaned tasks can cause a communication failure to be reported by the Historic Reporting service.

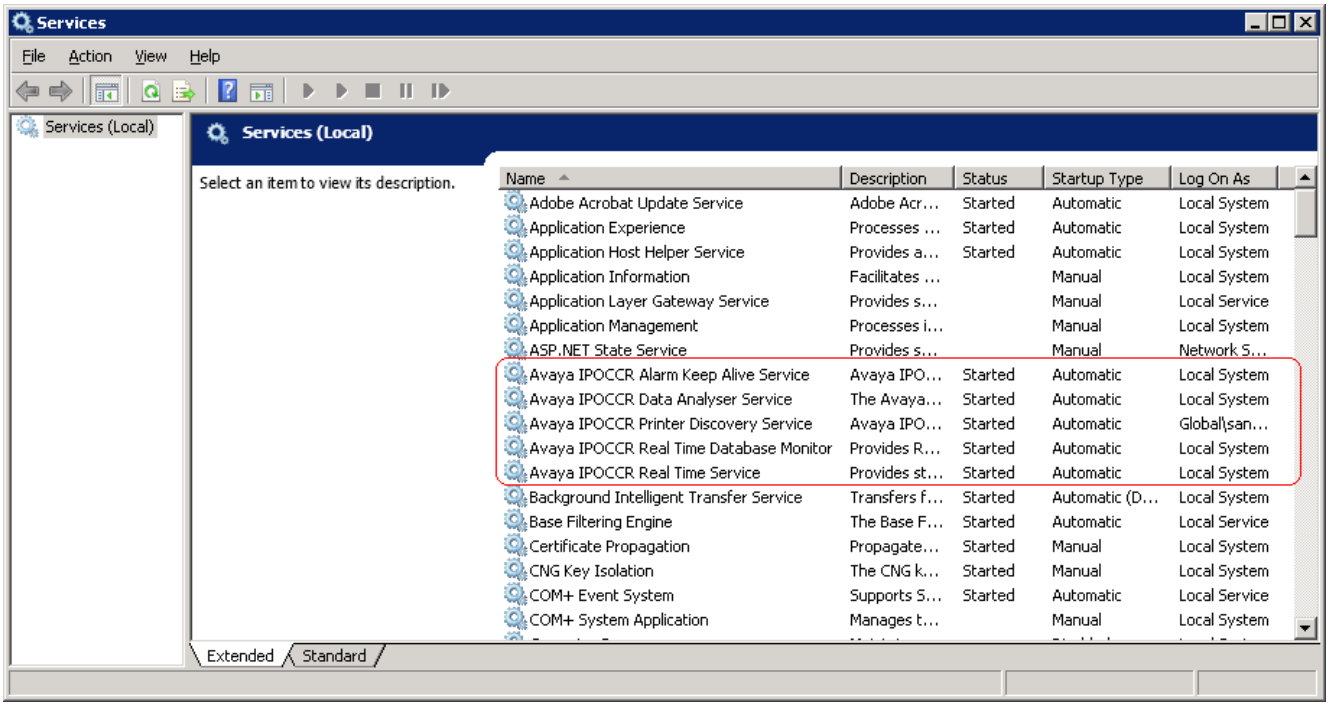
5.10 Windows Task Manager

The screen-shot below shows the IP Office Customer Call Reporter components that appear in the Windows Task Manager on the IP Office Customer Call Reporter server computer. To stop and restart any of these, restart the appropriate Windows Services [79].



5.11 Services

The following services are installed and run by IP Office Customer Call Reporter. The services are also shown in the web client's Status screen. Use the web client to restart services when such an action is required. Refer to the IP Office Customer Call Reporter user guide.



- **Avaya IP Office Customer Call Reporter Real Time Service**
  Restarting this service will reset all view statistics for all agents and supervisors.

Service Notes

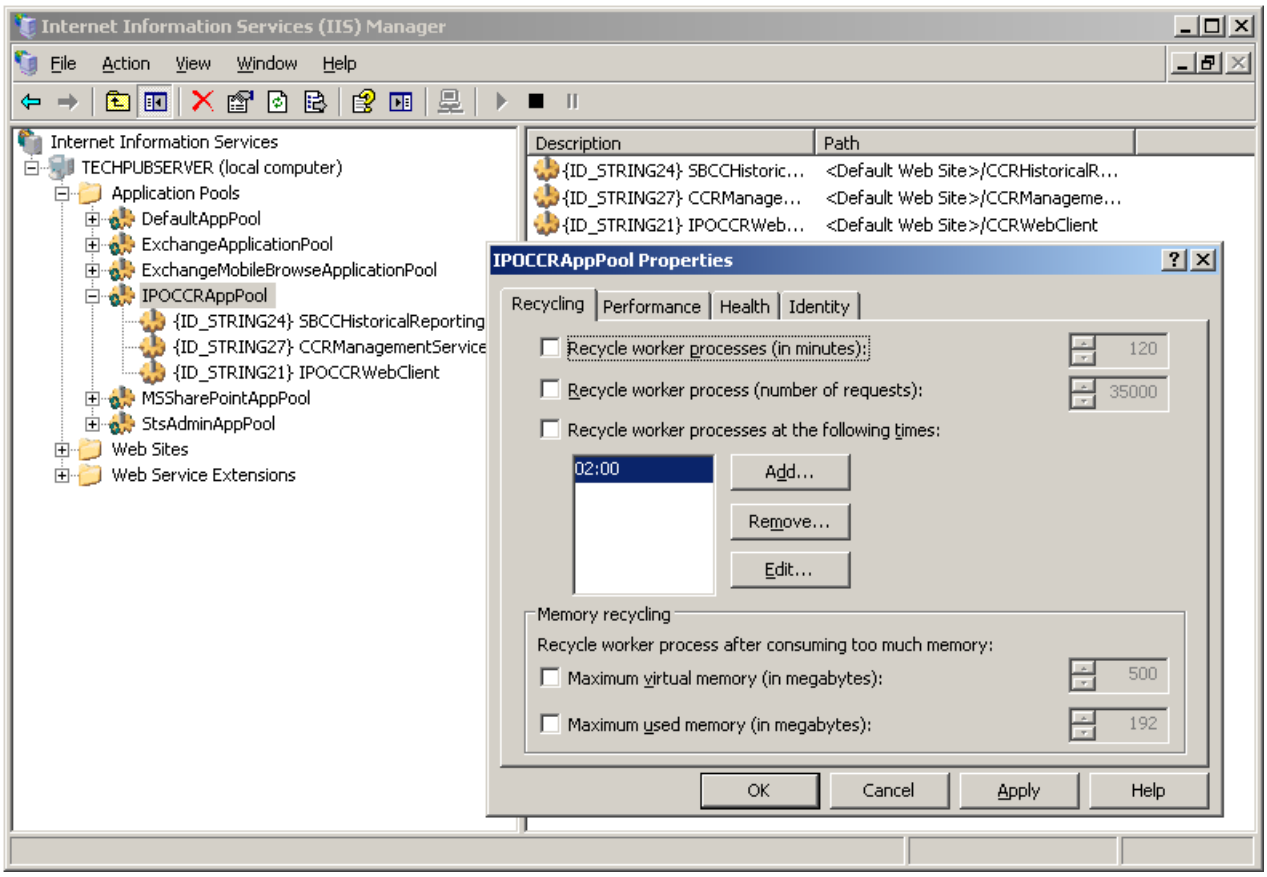
- **Printer Discovery Service**
  If the **Printer Discovery Service** account details are changed then reports can no longer be scheduled. This is because the account details are stored by the service on installation and has no provision for a potential change.

5.12 Using HTTPS

If secure access is required for IP Office Customer Call Reporter the IIS can be configured to use HTTPS. This can be configured through the IIS Manager. For details refer to http://learn.iis.net/page.aspx/144/how-to-set-up-ssl-on-iis-7-and-above/.

5.13 IIS Application Pool

During installation, a separate application pool is created in IIS for the IP Office Customer Call Reporter services. The settings of this application pool should only be adjusted if you are familiar with IIS administration.



Chapter 6.
Appendix

6. Appendix

6.1 History

The following sections summarize recent changes to the IP Office Customer Call Reporter application.

6.1.1 What Was New in IP Office Customer Call Reporter 7.0

This version of IP Office Customer Call Reporter is supported with IP Office Release 7.0.

- **Statistics**
  The following changes have been made for the statistics:
  - **SYSTEM Values**
    In addition to using statistics to display queue or agent values, for many statistics a system value can also be displayed. The value will be the total or weighted average for all the IP Office Customer Call Reporter queues and agents. System statistics can be used in the dashboard and as a row in monitor views. Alarms and warnings are not applied to system statistics.
  - **Display Accuracy/Standardization**
    Many statistics were previously displayed to two decimal points. These are now rounded to a single decimal point. This change applies to statistic display in the dashboard, monitor, wallboard and reports. Time values are standardized as hours:minutes:seconds except average speed of answer (just seconds).
- **Wallboard**
  The following changes have been made to wallboards:
  - **Wallboard Logout**
    The wallboard display now includes a log out icon that can be used to return to the IP Office Customer Call Reporter login screen.
  - **Wallboard Animation Settings**
    The Silverlight animation settings can be accessed and adjusted to optimize CPU usage on PCs that are not dedicated to wallboard display only.
- **Reports**
  The following changes have been made to reports:
  - **Inline Display**
    When manually viewing a report, the report results are displayed in the main IP Office Customer Call Reporter windows rather than requiring a pop up window. Use of a separate popup window can be enabled if desired.
  - **Saved Reports**
    When reports are run manually, a copy of the report results are saved with a time and date stamp. These saved reports are kept for a period (up to 12 months) set in the supervisors account settings. The saved reports can be viewed again at any time without having to reprocess the data.
  - **Daily Reports On/Off**
    For automatic reports scheduled to run daily, an additional scheduling option is available to disable the running of a daily report at weekends.
- **one-X Portal for IP Office Agent Control Gadget**
  IP Office Customer Call Reporter agents who also use the one-X Portal for IP Office now have an Agent Control gadget displayed in their portal. This gadget allows them to:
  - change their state between Available, After Call Work and Busy Not Available.
  - select a **Reason Code** when entering **Busy Not Available**.
  - see and select which of their queue memberships are currently enabled or disabled. The IP Office administrator can configure for which queues an agent can change their membership status.

6.1.2 What Was New in IP Office Customer Call Reporter 6.1

This version of IP Office Customer Call Reporter is supported with IP Office Release 6.1.

- **Microsoft SQL 2008 Support**
  IP Office Customer Call Reporter is now supported using Microsoft SQL 2008.
- **Visual Redesign**
  Some elements of the browser display have been redesigned.
  - Many of the tabs used by Supervisors to move between the available pages have been replaced by icons.
  - The color used for warnings has been changed from yellow to orange.
- **New Supervisor Pages**
  Supervisors are able to access two new pages of call information in addition to the monitor views that they share with their agents.
  - **Dashboard Display**
    The dashboard display is the default page displayed to a supervisor when they login. They can customize it to display a combination of up to three graphs and data display elements.

    - **Customer Map**
      Supervisors can display and configure a map that will plot calls based on caller ID numbers. The map can be used to show a combination of historical and realtime calls on a geographic map.

- **Control Agent State**
  Supervisors can now force a change to an agent's status. For example, to log an agent out or enable/disable an agent's queue membership. The IP Office Customer Call Reporter administrator configures which supervisors have this function. This feature requires the IP Office Customer Call Reporter server to have access to a one-X Portal for IP Office integration. It does not require the agent or supervisor to be one-X Portal for IP Office users.
- **New Statistics**
  The following new statistics are available for use in views.
    - **Agent Productivity**
    - **Talk Average**
    - **Talk Inbound**
    - **Talk Inbound Average**
    - **Talk Internal**
    - **Talk Outbound**
    - **Talk Outbound Average**
    - **Talk Total**
- **Report Templates**
  The follow changes have been made for historical reporting.
    - The **Call Summary Report** now includes ***Average Answer Time*** when reporting on agents (previously this value was blank when reporting on an agent or agents).
    - A new template called the **Agent Report Card** template has been added. It provides historical reporting on the ***Performance*** and ***Talk Time*** statistics.
- **Message Color**
  When scheduling a wallboard message, supervisors can now select the color for the message.
- **IP Office Customer Call Reporter Help**
  IP Office Customer Call Reporter help is now also available in French and Latin Spanish.
- **Wallboard Controls**
  The wallboard Background and Content Settings now include options to adjust the animation effect applied to changing statistic values and the aspect ratio used for the display of the wallboard elements.

6.1.3 What Was New in IP Office Customer Call Reporter 1.2

This version is supported with IP Office Release 5 and IP Office Release 6 core software. It adds the following new features:

- **Windows 2008 Server Support**
  Support for installation on Windows Server 2008 systems. That includes both 32-bit and 64-bit systems.
- **IP Office Switch Configuration**
  IP Office switch discovery and selection is no longer part of the IP Office Customer Call Reporter software installation. Instead the IP Office switch details can be edited manually by the IP Office Customer Call Reporter administrator after software installation.
- **Maximum Database Size Configuration**
  The maximum MS-SQL database size can now be set by the IP Office Customer Call Reporter administrator. The IP Office Customer Call Reporter will then provide warnings and take housekeeping actions when the actual database size approaches the configured maximum size.
- **Supervisor Scheduled Housekeeping Tasks**
  Through the scheduler tab previous used for historical reports, supervisors with **Self Administer** rights can now also configure a number of house keeping tasks. Housekeeping tasks configured by one supervisor can be seen by other supervisors. Each task can be configured to run with a specified frequency or just once. The housekeeping tasks include:
    - **Reset Realtime Statistic**
      Reset the statistics shown in all supervisor, agent and wallboard views.
    - **Re-Index Database**
      By default this task is already scheduled and occurs at 23:00. Re-indexing the database allows reports to run faster, however during the actual re-indexing the response of IP Office Customer Call Reporter is slowed.
    - **Reset Web Services**
      By default this task is already scheduled and occurs at 02:30.
    - **Update Database Statistics**
      This task is similar to **Rebuild Database Indexes** but does not include the database re-indexing part of that action. Following this, action reports will run slightly faster, however while the action is being performed it has less of an effect on the response of IP Office Customer Call Reporter than the **Rebuild Database Indexes** action.
    - **Backup Database**
      The backup database is placed into the default MS-SQL backups folder with a date and time prefix to the file name.

- **Wallboard Display Mode**
  In addition to creating supervisor accounts, the administrator can also add wallboard accounts. When a browser is logged in using a wallboard account it displays real-time data on queues and agents in a style intended for display on large screen monitors being used a wallboards.
  - Each IP Office Customer Call Reporter supervisor license instance enables one supervisor login and also one wallboard login.
  - The wallboard display mode requires the web browser being used to support Microsoft Silverlight.
  - The wallboard display can include combinations of queue and agents statistics from all IP Office Customer Call Reporter queues and agents. For each statistic displayed, alarm and warning settings can be applied and, where appropriate, inclusion of internal and or external calls can be selected.
  - In addition to IP Office Customer Call Reporter statistics, a number of other items can be selected for the wallboard display such as:
    - **Title**
      A customizable text title can be added to the wallboard display.
    - **Logo**
      A logo picture file can be uploaded for display in the wallboard.
    - **Agent League Table**
      A dynamic table showing the top, the bottom or a combination of the top and bottom agents for a selected queue and statistic.
    - **Graph**
      Display a graph of a selected queue statistic over time.
    - **Supervisor Messages**
      IP Office Customer Call Reporter supervisors can configure scheduled messages which appear in the message bar of selected wallboards.
- **Report Changes**
  The following changes have been made to the historical report templates:
  - **IP Office Connection Loss Reporting**
    If the data analyzer component of IP Office Customer Call Reporter is unable to connect to the IP Office system, it will record details in the IP Office Customer Call Reporter database. Any reports run that cover the same period as a lose of connection will include details of the connectionless period in the report.
  - **Call Summary Report Template Changes**
    In the Call Summary Report template, the ***Total Calls*** column is now ***Call Interactions*** and does not include ***No Answer*** calls. An additional column, ***Customer Calls***, which is the number of unique calls has been added.
  - **Call Details Report Template Change**
    In the Call Details Report template, the summary sections now include totals for ***Customer Calls*** and ***Call Interactions***.

6.1.4 What Was New in IP Office Customer Call Reporter 1.1

Supported with IP Office Release 5 core software only. Added support for the web client running in German.

6.1.5 What Was New in IP Office Customer Call Reporter 1.0

First release version of IP Office Customer Call Reporter. Supported with IP Office 4.2 Q2 2009 and higher versions of IP Office 4.2 core software.

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