IP Office

Customer Call Reporter Installation

15-601133 Issue 1c - (22 May 2009)

© 2009 Avaya All Rights Reserved.

Notice
While reasonable efforts were made to ensure that the information in this document was complete and accurate at the time of printing, Avaya Inc. can assume no liability for any errors. Changes and corrections to the information in this document may be incorporated in future releases.

Documentation Disclaimer
Avaya Inc. is not responsible for any modifications, additions, or deletions to the original published version of this documentation unless such modifications, additions, or deletions were performed by Avaya.

Link Disclaimer
Avaya Inc. is not responsible for the contents or reliability of any linked Web sites referenced elsewhere within this Documentation, and Avaya does not necessarily endorse the products, services, or information described or offered within them. We cannot guarantee that these links will work all of the time and we have no control over the availability of the linked pages.

License
USE OR INSTALLATION OF THE PRODUCT INDICATES THE END USER'S ACCEPTANCE OF THE TERMS SET FORTH HEREIN AND THE GENERAL LICENSE TERMS AVAILABLE ON THE AVAYA WEBSITE AT http://support.avaya.com/LicenseInfo/ ("GENERAL LICENSE TERMS"). IF YOU DO NOT WISH TO BE BOUND BY THESE TERMS, YOU MUST RETURN THE PRODUCT(S) TO THE POINT OF PURCHASE WITHIN TEN (10) DAYS OF DELIVERY FOR A REFUND OR CREDIT.
Avaya grants End User a license within the scope of the license types described below. The applicable number of licenses and units of capacity for which the license is granted will be one (1), unless a different number of licenses or units of capacity is specified in the Documentation or other materials available to End User. "Designated Processor" means a single stand-alone computing device. "Server" means a Designated Processor that hosts a software application to be accessed by multiple users. "Software" means the computer programs in object code, originally licensed by Avaya and ultimately utilized by End User, whether as stand-alone Products or pre-installed on Hardware. "Hardware" means the standard hardware Products, originally sold by Avaya and ultimately utilized by End User.
License Type(s): Designated System(s) License (DS).
End User may install and use each copy of the Software on only one Designated Processor, unless a different number of Designated Processors is indicated in the Documentation or other materials available to End User. Avaya may require the Designated Processor(s) to be identified by type, serial number, feature key, location or other specific designation, or to be provided by End User to Avaya through electronic means established by Avaya specifically for this purpose.
Copyright
Except where expressly stated otherwise, the Product is protected by copyright and other laws respecting proprietary rights. Unauthorized reproduction, transfer, and or use can be a criminal, as well as a civil, offense under the applicable law.

Third-Party Components
Certain software programs or portions thereof included in the Product may contain software distributed under third party agreements ("Third Party Components"), which may contain terms that expand or limit rights to use certain portions of the Product ("Third Party Terms"). Information identifying Third Party Components and the Third Party Terms that apply to them is available on Avaya's web site at: http://support.avaya.com/ThirdPartyLicense/

Avaya Fraud Intervention
If you suspect that you are being victimized by toll fraud and you need technical assistance or support, call Technical Service Center Toll Fraud Intervention Hotline at +1-800-643-2353 for the United States and Canada. Suspected security vulnerabilities with Avaya Products should be reported to Avaya by sending mail to: securityalerts@avaya.com.
For additional support telephone numbers, see the Avaya Support web site (http://www.avaya.com/support).

Trademarks
Avaya and the Avaya logo are registered trademarks of Avaya Inc. in the United States of America and other jurisdictions. Unless otherwise provided in this document, marks identified by "®," "™" and "SM" are registered marks, trademarks and service marks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners.

Documentation information
For the most current versions of documentation, go to the Avaya Support web site (http://www.avaya.com/support) or the IP Office Knowledge Base (http://marketingtools.avaya.com/knowledgebase/).

Avaya Support
Avaya provides a telephone number for you to use to report problems or to ask questions about your contact center. The support telephone number is 1 800 628 2888 in the United States. For additional support telephone numbers, see the Avaya Web site: http://www.avaya.com/support.

Contents

1. IP Office Customer Call Reporter

1.1 Summary 9
1.2 Database Requirements 10
1.3 Server PC 11
1.4 Licenses 12
1.5 CCC and Delta Server 12
1.6 Small Community Network (SCN) 12
1.7 Voicemail Pro 12
1.8 Distributed Installation 13

2. Installation

2.1 CCR Server PC Requirements 17
2.2 Information Requirements 18
2.3 Software Requirements 19
2.4 IP Office Connection 21
2.5 IIS Setup 22
2.6 Windows Software Updates 23
2.7 MS-SQL 2005 Installation 24
2.8 CCR License Installation 30
2.9 Agent and Queue Configuration 31
2.10 SMTP Email Testing 33
2.11 CCR Software Installation 34
2.12 CCR Administrator Creation 39
2.13 MS-SQL Configuration 40
2.14 Firewall Settings 41
2.15 Network Printers 41

3. IP Office Configuration

3.1 Agent Configuration 46
3.2 Hunt Group (Queue) Configuration 47
3.3 Reason Codes 48
3.4 After Call Work Controls 49
3.5 IP Office Short Codes 50
3.6 Button Programming 50
3.7 Voicemail Report Setup 51

4. Maintenance and Diagnostics

4.1 Status Lamp 55
4.2 Upgrading CCR 56
4.3 Removing CCR 56
4.4 Event Logging 57
4.5 Database Backup 59
    4.5.1 Manual Database Backup 60
    4.5.2 Automatic Database Backup 63
4.6 Windows Task Scheduler 66
4.7 Windows Task Manager 66
4.8 Services 66
4.9 Using HTTPS 67
4.10 IIS Application Pool 67

5. The CCR Database

5.1 Database Part 1 70
5.2 Database Part 2 71
5.3 Database Part 3 72
5.4 Database Part 4 73
Index 75

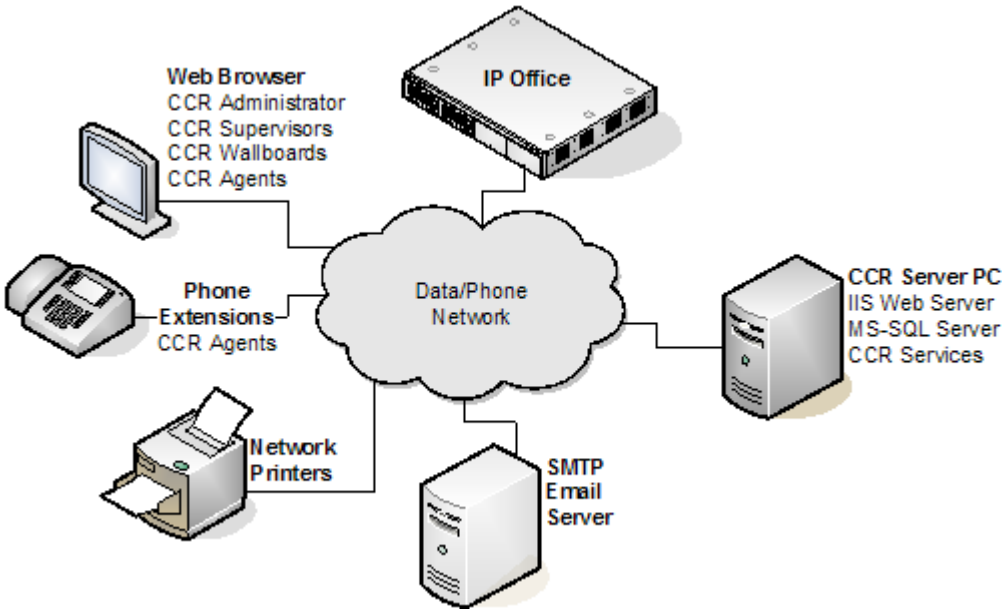
Chapter 1.

IP Office Customer Call Reporter

1. 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 1.0 is supported by all IP Office control units running IP Office 4.2 Q2 2009. 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 PC**
  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 V6 on the IP Office Customer Call Reporter server PC. The IIS must be enabled and configured before IP Office Customer Call Reporter is installed.
  - **Microsoft SQL 2005 Database (MS-SQL 2005)**
    The IP Office Customer Call Reporter server stores information in an MS-SQL database. Typically the database will be on the same PC as the IP Office Customer Call Reporter server application, however an MS-SQL database located on another server can be supported 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 10 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 PC. For more advance installations some may be installed on separate server PC's, see Distributed Installation 13.
- **SMTP Email Server**
  Access to an SMTP email server is required for the emailing of reports and use of the forgotten password function.
- **Networked Printer**
  Reports can be viewed in a web browser or emailed to a user, either option allows the user to view and then print to any printer they can access from their PC. 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**
  Users access IP Office Customer Call Reporter using web browsers. The user's name and password determines their role. Full details of what the administrator, supervisors and agents can do through the web browser are detailed in the IP Office Customer Call Reporter User Guide.
  - **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 supervisors. Their is only one administrator account which is 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 (up to 30 supported) is controlled by IP Office licenses.

- **Agents**
  Once an agent logs in to a phone 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)

- **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 (up to 30 supported).

- **Voicemail Server** 12
  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 17 voicemail ports.

1.1 Summary

Feature		
Web Browsers	• Google Chrome. • Mozilla Firefox 3.0. • Windows Safari 2.0. • Internet Explorer 8. • Internet Explorer 7[2].	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. 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 plugin is required for user's browsers. Use either Quick Time (Non IE browsers) or Windows Media Player/Center (IE).
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 4.2 Q2 2009	A single IP Office. Minimum software level 4.2 Q2 2009. IP Office Customer Call Reporter is only supported in an IP Office Small Community Network of IP Office 4.0+ systems. IP Office Customer Call Reporter itself does not support SCN features such as remote hot desking of agent or distributed hunt groups. It 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.
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. Note that this also means that SSA cannot be run from the same server PC as the IP Office Customer Call Reporter Data Analyzer. • **Note: IP Office IP Address** 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 is changed after installation of IP Office Customer Call Reporter, new data for the existing queues and agents will be tagged with the new IP address. This will 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**, **Italian**, **Brazilian Portuguese**, **Russian** and **Spanish**. For embedded help the languages are **English**, **Brazilian Portuguese** and **Italian**.	
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 PC as the IP Office Customer Call Reporter applications, however in that scenario support is limited to 16 voicemail ports.	

1. IP Office Customer Call Reporter is currently not supported with T3 Series and T3 IP Series phones. It is also not supported with non-Avaya H323 phones.
2. IE7 is supported for only 100 statistics values in any section of a view. That is up to 100 statistic values for queues and up to 100 statistic values for the agents in the currently selected queue.
3. 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.

1.2 Database Requirements

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

- **Microsoft SQL 2005 Express Edition**
  This is the free to use edition of MS-SQL 2005 which can be downloaded from Microsoft at http://www.microsoft.com/downloads.
- **Microsoft SQL 2005**
  The licensed version of MS-SQL 2005 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/2005/en/us/compare-features.aspx.

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

Feature		MS-SQL 2005 Express Edition	MS-SQL 2005
Licensing		Free	Licensed
Location	**On the IP Office Customer Call Reporter Server PC**	Yes	Yes
	On separate server PC	No	Yes
Supported Call Limit		500,000	No limit.[1]
Maximum Database Size[2]		4GB	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 2005 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 2005.

Regardless of which edition of MS-SQL 2005 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 2005 is used as part of the IP Office Customer Call Reporter installation.

What Happens When the Database Size Limit is Reached?

Once the database has reached 75% of its maximum size, an alarm will be generated and displayed when users log in to IP Office Customer Call Reporter.

At 80% an alarm will be generated and the IP Office Customer Call Reporter application will begin to take actions necessary to allow it to continue recording new data. The warning messages and the action taken depend on the edition of MS-SQL being used.

- **MS-SQL 2005 Express Edition**
  When the database size limit is approached IP Office Customer Call Reporter will start providing warnings. When the 80% limit is reached it will automatically erase the oldest 10% of data.
- **Licensed MS-SQL 2005 Editions**
  When the database size limit is approached IP Office Customer Call Reporter will start providing warnings. When the 80% limit is reached it will increase the set database size limit.

1.3 Server PC

This section details the minimum requirements for IP Office Customer Call Reporter server PC's.

- **Windows Operating System**
  The IP Office Customer Call Reporter services are supported on the following operating systems. Only 32-bit versions are supported.
  - Microsoft Windows Server 2003 SP2.
  - Microsoft Windows Server 2003 R2.
  - Microsoft Windows Small Business Server 2003 R2.

- **Hardware Requirements**
  The following are the recommended minimum requirements for the PC 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
  - **Free Hard Disk Space:** 30GB.
    - If the IP Office Customer Call Reporter Data Analyzer component is installed onto a separate PC, the hardware requirements for that PC are the same except for 1GB RAM and 1GB free hard disk space.
  - **Additional:** CD or DVD drive for software installation.
  - If installing a licensed edition of MS-SQL 2005 on the IP Office Customer Call Reporter server PC the separate requirements of the MS-SQL 2005 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.

1.4 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.

License	Function
CCR Sup	The presence of at least one **IP Office Customer Call Reporter Sup** license is required to use IP Office Customer Call Reporter. The license is available in 1, 5, 10, 15 and 25 supervisor versions. Multiple licenses can be added to achieve the number of supervisors required up to 30 supervisors. One license instance is consumed for each supervisor configured on the IP Office Customer Call Reporter system, regardless of whether the Supervisor is logged in to IP Office Customer Call Reporter.
CCR Agent	Enables support for IP Office Customer Call Reporter agents. The license is available in 1, 5, 10, 20, 50 and 75 agent versions. 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 IP Office Customer Call Reporteragent configured on the IP Office system, regardless of whether the Agent is logged in to an extension or to IP Office Customer Call Reporter.
CCR CCC UPG	This license allows existing CCC licenses to be used for IP Office Customer Call Reporter, see Upgrading from CCC 12. The CCC licenses are used as follows: • **CCC Server -** Enables 1 supervisor and 5 agents. • **CCC Supervisors -** Enables the equivalent number of supervisors. • **CCC Agents -** Enables the equivalent number of agents.

Note also that on IP500 systems, IP Office Customer Call Reporter V1.0 requires the IP500 to have an ***IP500 Upgrade Standard to Professional*** license.

1.5 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 12.
- 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.

1.6 Small Community Network (SCN)

IP Office Customer Call Reporter is only supported in an IP Office Small Community Network of IP Office 4.0+ systems.

IP Office Customer Call Reporter itself does not support SCN features such as remote hot desking of agent or distributed hunt groups. It 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.

Calls received from other parts of the IP Office SCN are currently reported as inbound external calls by IP Office Customer Call Reporter.

1.7 Voicemail Pro

In a Small Community Network, for Voicemail Reports 51, the Voicemail Pro must be associated with the same IP Office system as the IP Office Customer Call Reporter server PC. It does not necessarily have to be installed on the same PC as the IP Office Customer Call Reporter sever, however that can be done, see below.

Note that assisted transfers from the voicemail server to a queue or agent are not supported.

The IP Office Customer Call Reporter server can be installed on the same server as the IP Office VoiceMail Pro application. However this is only supported for up to 16 voicemail ports.

If ContactStore 7.2 is also required, it must be installed, configured and tested before the installation of the MS-SQL 2005 and IP Office Customer Call Reporter software.

1.8 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 PC.

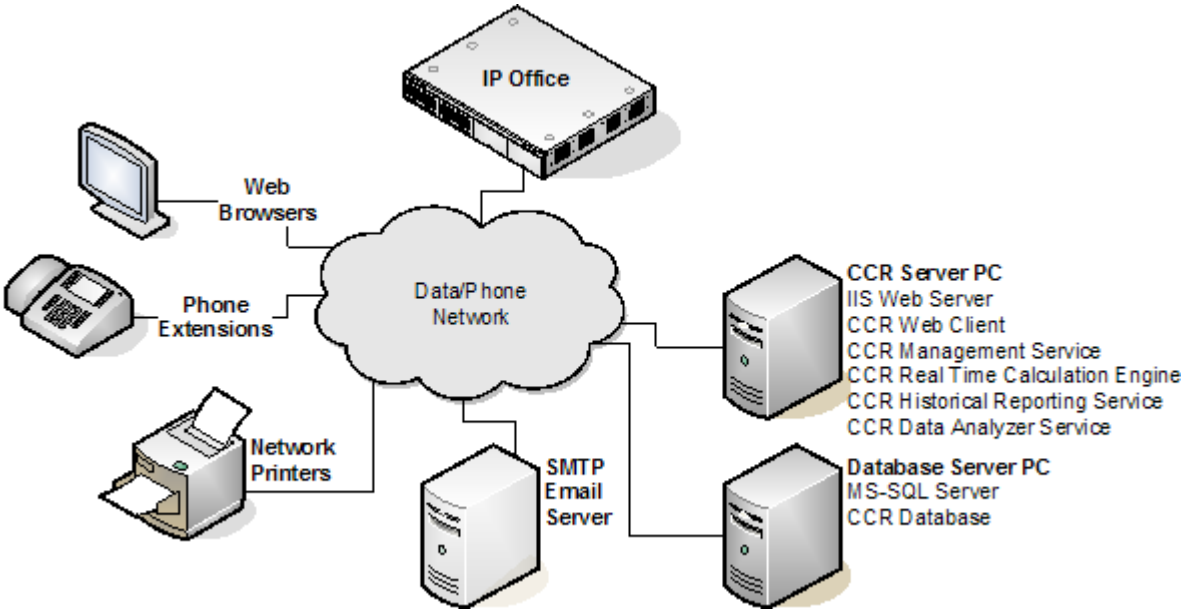
For advanced scenarios some components can be installed on other PC's. The IP Office Customer Call Reporter application components listed in Maintenance and Diagnostics 54.

Currently, for IP Office Customer Call Reporter version 1.0, the only supported scenario for a distributed installation are scenarios where MS-SQL 2005 is installed on a separate server PC.

Separate Database Server

In this scenario the MS-SQL used is a licensed edition of MS-SQL 2005 installed on another server PC. This requires the IP Office Customer Call Reporter Database component to be installed on the same PC as the MS-SQL 2005 database server before the remaining IP Office Customer Call Reporter components are installed on the IP Office Customer Call Reporter server PC.

Typically this type of installation would be used when the customer already has a server PC with a licensed edition of MS-SQL 2005 installed.



Chapter 2. Installation

2. Installation

You must read and understand this documentation in full before attempting an 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 necessary to complete the installation.

1. **IP Office Customer Call Reporter Server PC Requirements** 17
2. **Information Requirements** 18
3. **Software Requirements** 19
4. **IP Office Connection** 21
5. **IIS Setup** 22
6. **Windows .NET Updates** 23
7. **MS-SQL 2005 Express Edition Installation** 24
8. **IP Office Customer Call Reporter License Installation** 30
9. **Agent and Queue Configuration** 31
10. **SMTP Email Testing** 33
11. **IP Office Customer Call Reporter Software Installation** 34
12. **IP Office Customer Call Reporter Administrator Creation** 39
13. **MS-SQL Service Configuration** 40
14. **Firewall Settings** 41
15. **Network Printers** 41

This installation process assumes that the IP Office system is already installed and has been tested for correct operation.

- **Note: IP Office IP Address**
  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 is changed after installation of IP Office Customer Call Reporter, new data for the existing queues and agents will be tagged with the new IP address. This will 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** 48.
2. **Configuring IP Office Customer Call Reporter Agents** 46.
3. **Configuring IP Office Customer Call Reporter Queues** 47.
4. **Configuring After Call Work Controls** 49.
5. **IP Office Short Codes** 50.
6. **Button Programming** 50.
7. **Voicemail Report Setup** 51.

2.1 CCR Server PC Requirements

This section details the minimum requirements for IP Office Customer Call Reporter server PC's.

- **Windows Operating System**
  The IP Office Customer Call Reporter services are supported on the following operating systems. Only 32-bit versions are supported.
  - Microsoft Windows Server 2003 SP2.
  - Microsoft Windows Server 2003 R2.
  - Microsoft Windows Small Business Server 2003 R2.

- **Hardware Requirements**
  The following are the recommended minimum requirements for the PC 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
  - **Free Hard Disk Space:** 30GB.
    - If the IP Office Customer Call Reporter Data Analyzer component is installed onto a separate PC, the hardware requirements for that PC are the same except for 1GB RAM and 1GB free hard disk space.
  - **Additional:** CD or DVD drive for software installation.
  - If installing a licensed edition of MS-SQL 2005 on the IP Office Customer Call Reporter server PC the separate requirements of the MS-SQL 2005 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.

2.2 Information Requirements

In addition to general customer details, the following information should be obtained before attempting to install IP Office Customer Call Reporter.

Category	Information
Documentation	The following are available from the Avaya Support web site (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 4.2 Q1 2009 or higher. 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 PC	• ☐ Name and password for account with full administrator rights log on. • ☐ PC IP address details.
SMTP Email Details	• ☐ SMTP Server Hostname • ☐ SMTP Server Port • ☐ Originator Email Address and Name. • ☐ Server User Name (optional) • ☐ Server Password (optional)
Database Details	
Supervisor Details	Login names and email 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.

2.3 Software Requirements

A number of software items are required to complete the IP Office Customer Call Reporter installation. These are not all are provided as part of the IP Office Customer Call Reporter installation package and so you should ensure that you have all the items listed below before proceeding with 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 PC is also a validation of connectivity between that PC 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 CD or DVD**
	This will be used to install the following onto the IP Office Customer Call Reporter server PC. 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	During installation, if the IIS 6 web server has not already been installed it may be necessary to have operating system disks available that match the IP Office Customer Call Reporter server PC's operating system. • ☐ **Microsoft Windows Server 2003 SP2.** • ☐ **Microsoft Windows Server 2003 R2.** • ☐ **Microsoft Windows Small Business Server 2003 R2.**

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 3.5 Service Pack 1 (dotnetfx35.exe)**
	Ensure that IIS is installed 22 and accessible before installing the .NET package. This ensures that additional .NET components for IIS are installed during the .NET installation.
	• ☐ **Microsoft .NET Framework 3.5 Family Updates (KB959209):**
	The following updates are required after the .NET 3.5 Service Pack 1 has been installed. They can be downloaded and installed. Alternatively, after installing the .NET 3.5 Service Pack 1, allow the server to go through the Windows Update process while connected to the Internet.
	  • ☐ **NDP20SP2-KB958481-x86.exe**
	  • ☐ **NDP30SP2-KB958483-x86.exe**
	  • ☐ **NDP35SP1-KB958484-x86.exe**
	• ☐ **Visual J# 2.0 Runtime (vjredist.exe)**
	
	For all the above:
	• Ensure that you 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, ensure that you obtain the full redistribution package.
	• Ensure that IIS is installed 22 and accessible before installing the .NET package. This ensures that additional .NET components for IIS are installed during the .NET installation.

MS-SQL 2005	• Either:
	  • ☐ A licensed copy of **MS-SQL 2005**
	  • ☐ Access details to an existing **MS-SQL 2005** server PC on the same network.
	  • ☐ A free copy of **MS-SQL 2005 Express Edition**. This can be obtained from the Microsoft download site as listed above.
	• Optional:

Software	Details
	• ☐ A copy of **SQL Server Management Studio Express** is also recommend 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 for formats. To view these users will require an application that is able to display files in that format. • Adobe Acrobat. • Crystal Reports • Microsoft Word • Microsoft Excel

2.4 IP Office Connection

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

The IP Office Customer Call Reporter server uses a username and password for a SSI service user on the IP Office system. It can use an existing service user account, however we recommend a specific account is created on the IP Office system so that the accounts purpose is clearly identifiable for maintenance purposes.

- **Number of 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.
- **SSA Connection from the IP Office Customer Call Reporter Server PC**
  Once IP Office Customer Call Reporter is installed and running, the IP Office Customer Call Reporter Data Analyzer component creates an SSI connection from the IP Office to the PC on which it is installed.

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 ensure that ***Read all configuration*** is selected.
   - On the **System Status** tab ensure 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 such as IP Office Customer Call Reporter.
   - **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 PC to the IP Office.

- Note: Once IP Office Customer Call Reporter is installed and running, use of the IP Office System Status Application from the PC running the Data Analyzer components of IP Office Customer Call Reporter is not possible as they use the same ports for communication with the IP Office.

1. On the IP Office Customer Call Reporter server PC, 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.

2.5 IIS Setup

IP Office Customer Call Reporter requires Microsoft IIS version 6 or higher to be installed and running on the IP Office Customer Call Reporter server PC.

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.

Testing IIS Connection (Basic)

1. On the IP Office Customer Call Reporter server PC start Internet Explorer.
2. Enter the address http://127.0.0.1.
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. From other PC's on the customer network, using the server PC's IP address check that IIS can be browsed.
6. From other PC's on the customer network, using the server PC's domain name check that IIS can be browsed. 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 on **Checking the IIS Settings** below.

Installing/Enabling IIS

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

1. Open the **Windows Control Panel**.
2. Double click the **Add/Remove Programs** icon.
3. Click the **Add/Remove Windows Components** button.
4. Select **Application Server**.
5. Click the **Details** button.
6. Make sure that **ASP.NET** is selected.
7. Make sure that **Internet Information Services (IIS)** is checked and highlighted.
8. Click the **Details** button.
9. Ensure that **World Wide Web Server** is selected and click **OK**.
10. Click the **Details** button.
11. Ensure that **World Wide Web Server** is checked.
12. Click **OK** several times and then click **Next** to begin installation.

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. Start IIS Manager (select **Start | All Programs | Administrative Tools | Internet Information Services (IIS) Manager**).
2. Click on **Web Service Extensions**.
3. Check that the **ASP.NET** services are listed as ***Allowed***. If necessary right click on each and select ***Allowed***.

2.6 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 3.5 Service Pack 1 (dotnetfx35.exe)**
  Ensure that IIS is installed 22 and accessible before installing the .NET package. This ensures that additional .NET components for IIS are installed during the .NET installation.
- ☐ **Microsoft .NET Framework 3.5 Family Updates (KB959209):**
  The following updates are required after the .NET 3.5 Service Pack 1 has been installed. They can be downloaded and installed. Alternatively, after installing the .NET 3.5 Service Pack 1, allow the server to go through the Windows Update process while connected to the Internet.
  - ☐ **NDP20SP2-KB958481-x86.exe**
  - ☐ **NDP30SP2-KB958483-x86.exe**
  - ☐ **NDP35SP1-KB958484-x86.exe**
- ☐ **Visual J# 2.0 Runtime (vjredist.exe)**

For all the above:

- Ensure that you 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, ensure that you obtain the full redistribution package.
- Ensure that IIS is installed 22 and accessible before installing the .NET package. This ensures that additional .NET components for IIS are installed during the .NET installation.

2.7 MS-SQL 2005 Installation

MS-SQL 2005 must be installed before attempting to install any of the IP Office Customer Call Reporter application components. During installation of the IP Office Customer Call Reporter application, access information for the database will be requested and tested in order to complete IP Office Customer Call Reporter installation.

This can either be the free MS-SQL 2005 Express Edition or a licensed edition of MS-SQL 2005. For details of the differences see Database Requirements 10.

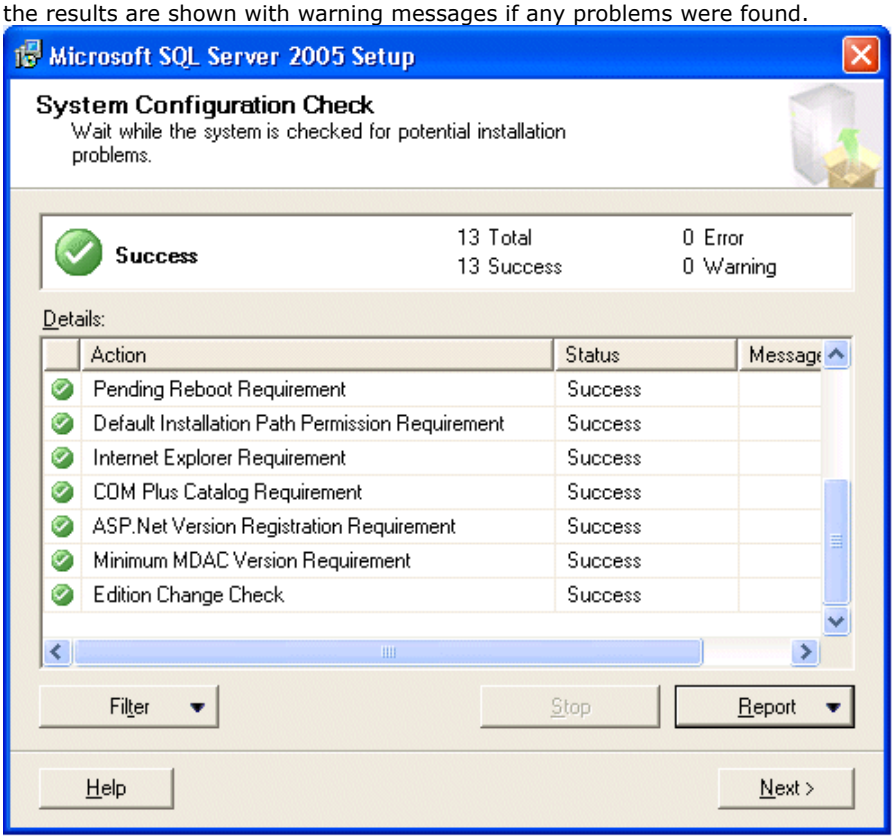
- If using MS-SQL 2005 Express Edition it must be installed on the same PC as the main IP Office Customer Call Reporter application components.
- If using a licensed edition of MS-SQL 2005 it can be installed on the IP Office Customer Call Reporter server PC or on a separate PC on the network. If installed on a separate PC then the IP Office Customer Call Reporter Database component must also be installed on that PC separate from the other IP Office Customer Call Reporter components. Refer to Distributed Installation 13.

Installing a Licensed Edition of MS-SQL 2005

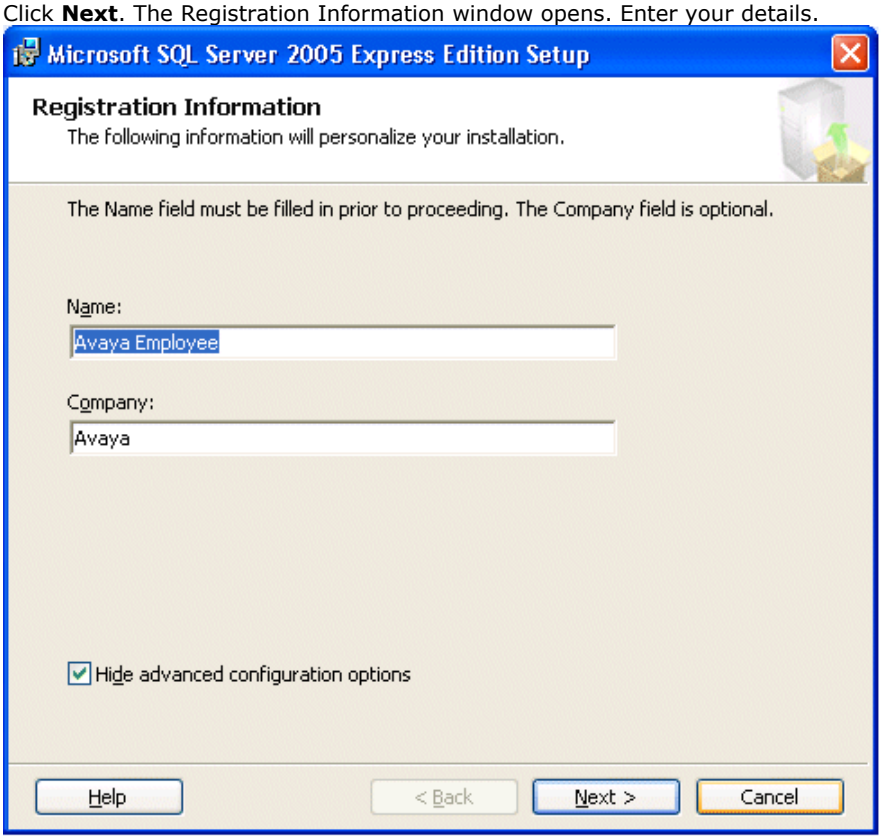
If installing Microsoft SQL 2005 refer to the installation instruction provided with the software. Note that IP Office Customer Call Reporter requires the MS-SQL Server to support **Mixed Mode (Windows Authentication and SQL Server Authentication)** access.

Installing Microsoft SQL 2005 Express Edition

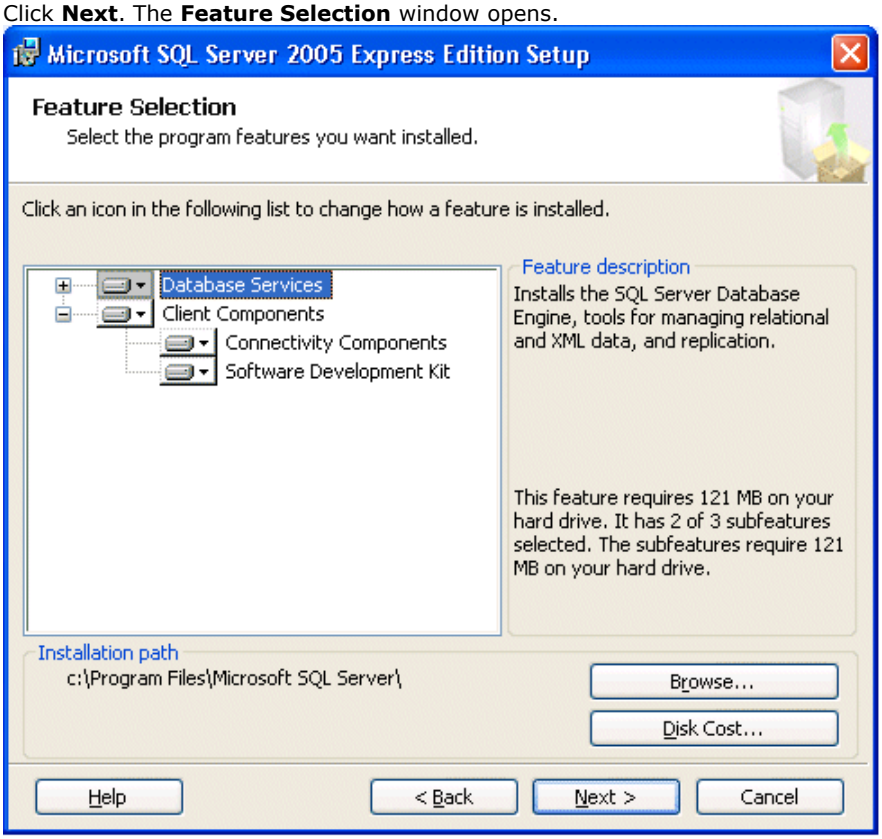
1. Locate the software installation package you have obtained (see Software Requirements 19).
2. Click on the installation package to start installation.
3. If asked, select to run the file. Files are extracted onto your server. When all the files have been extracted the **End User License Agreement** window opens.
4. Read the license agreement. If satisfactory check the option *"I accept the licensing terms and conditions"*.
5. Click **Next**. The **Installing Prerequisites** window opens and lists the software components that are required to be installed if any before the installation of the SQL server. Click **Install**.
6. Once all the required components are installed click **Next**.
7. The **System Configuration Check** window opens. When your system has been checked the **Welcome to the Microsoft SQL Server Installation Wizard** opens.
8. Click **Next**. The System Configuration Check is run to check for any potential installation problems. When finished the results are shown with warning messages if any problems were found.



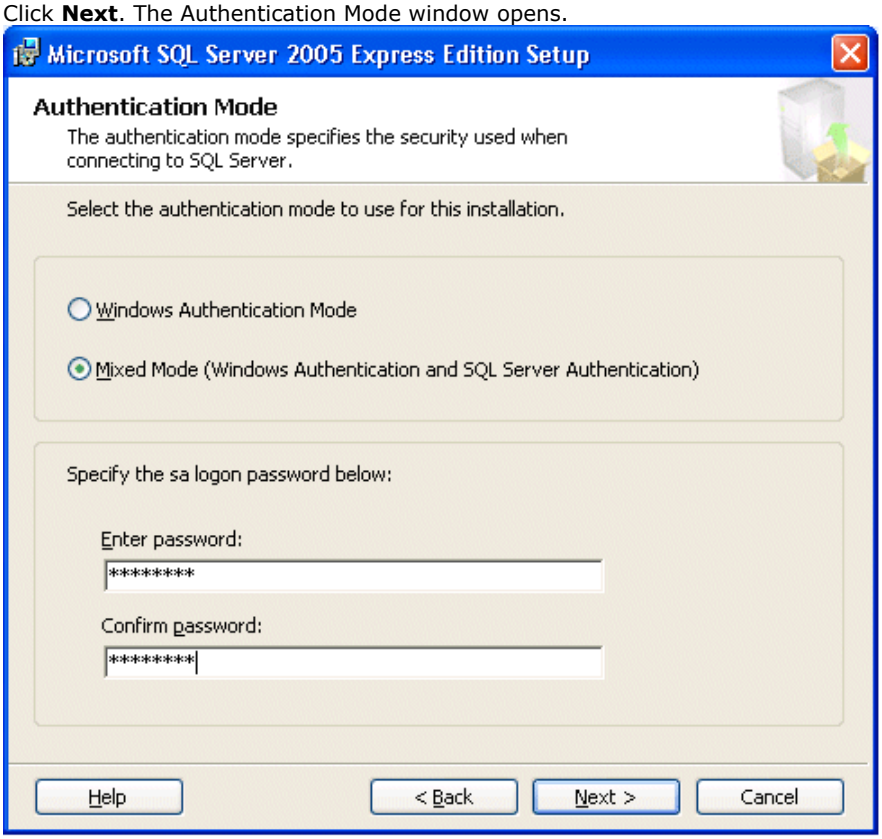
9. Click **Next**. The Registration Information window opens. Enter your details.



10. Click **Next**. The **Feature Selection** window opens.

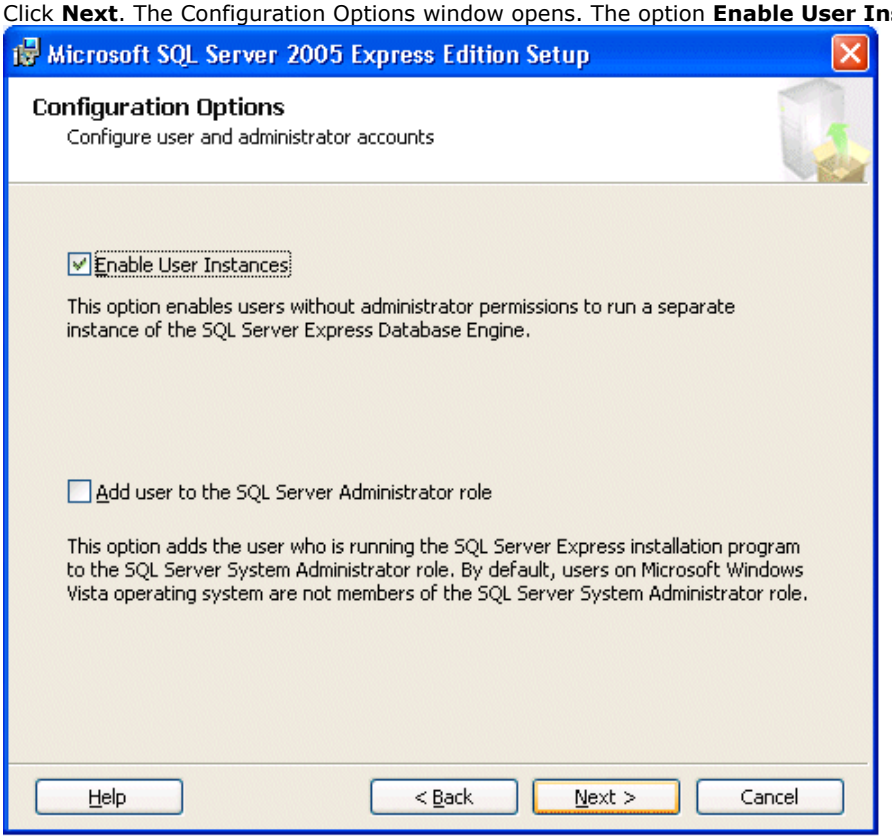


11. Select the following features
    - **Database Services**
      Installs the SQL Server database engine, tools for managing relational and XML data and replication. This feature requires 121MB on your hard drive.
        - The sub features **Data Files** (creates the data folder in the destination shown under installation path) and **Shared Tools** (installs the shared tools in the destination shown under installation path) should also be installed.
    - **Client Components**
      Installs command line tools , connectivity components, programming models, management tools and development tools. This feature requires 40MB on your hard drive.
        - The sub features **Connectivity Components** (installs components for communication between clients and servers, including network libraries for ODBC and OLE DB) and **Software Development Kit** (installs software development kits containing resources for model designers and programmers) should also be installed.
12. Click **Next**. The Authentication Mode window opens.

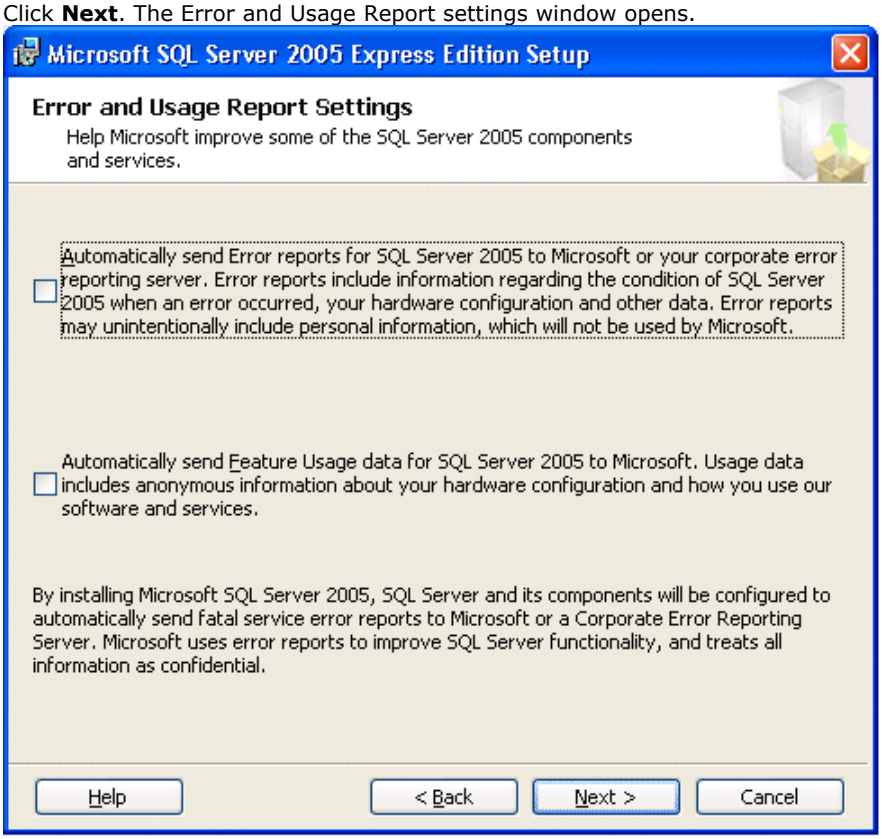


13. Select **Mixed Mode (Windows Authentication and SQL Server Authentication)** and enter a password for the sa logon.
    - **Important**
      Ensure that you securely record this password. It will be required during the installation of the IP Office Customer Call Reporter application components and for future maintenance and upgrades of IP Office Customer Call Reporter.

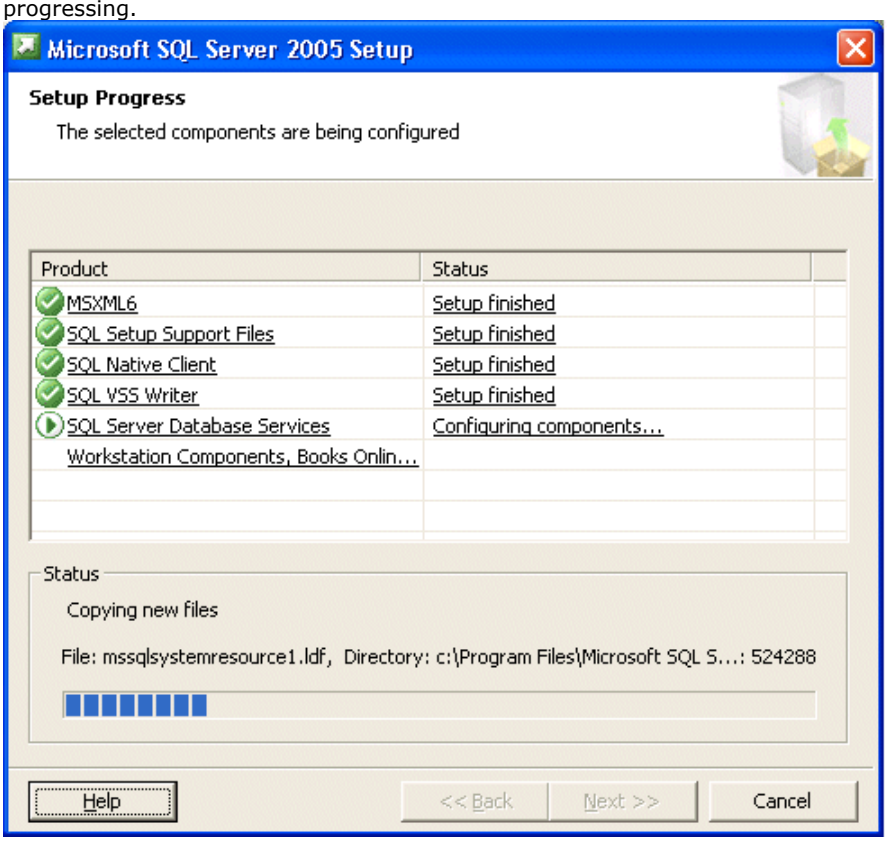
14. Click **Next**. The Configuration Options window opens. The option **Enable User Instances** should be selected.



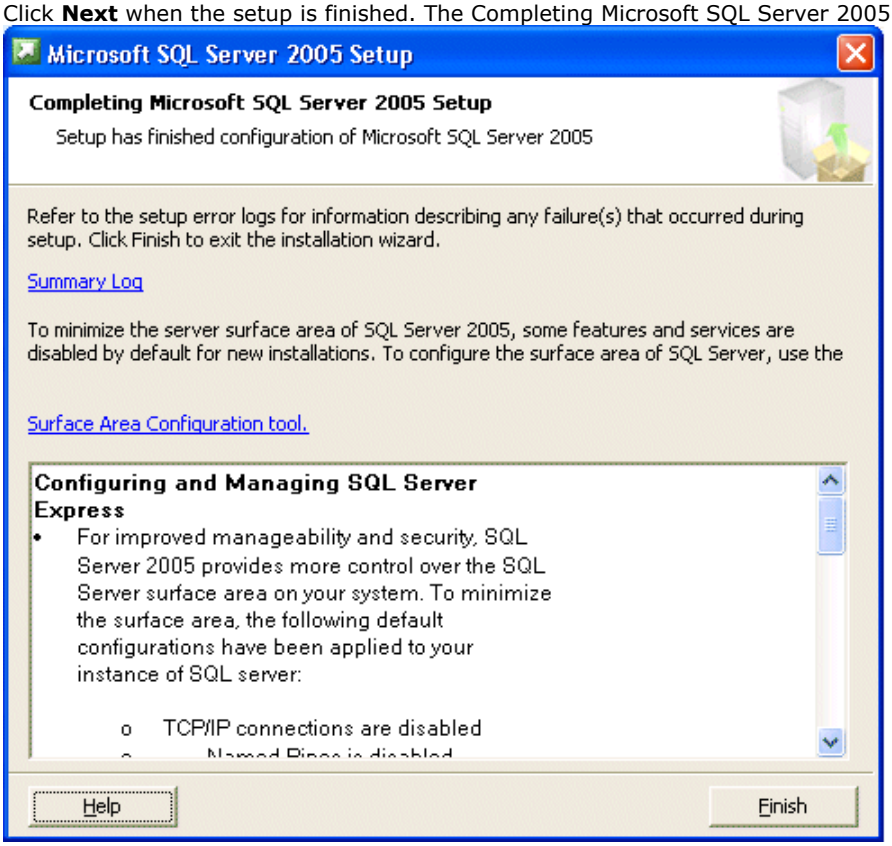
15. Click **Next**. The Error and Usage Report settings window opens.



16. Click **Next**. The Ready to install window opens.
17. To proceed with the installation click **Install**. The setup progress window opens to show you how the installation is progressing.



18. Click **Next** when the setup is finished. The Completing Microsoft SQL Server 2005 Setup window opens.

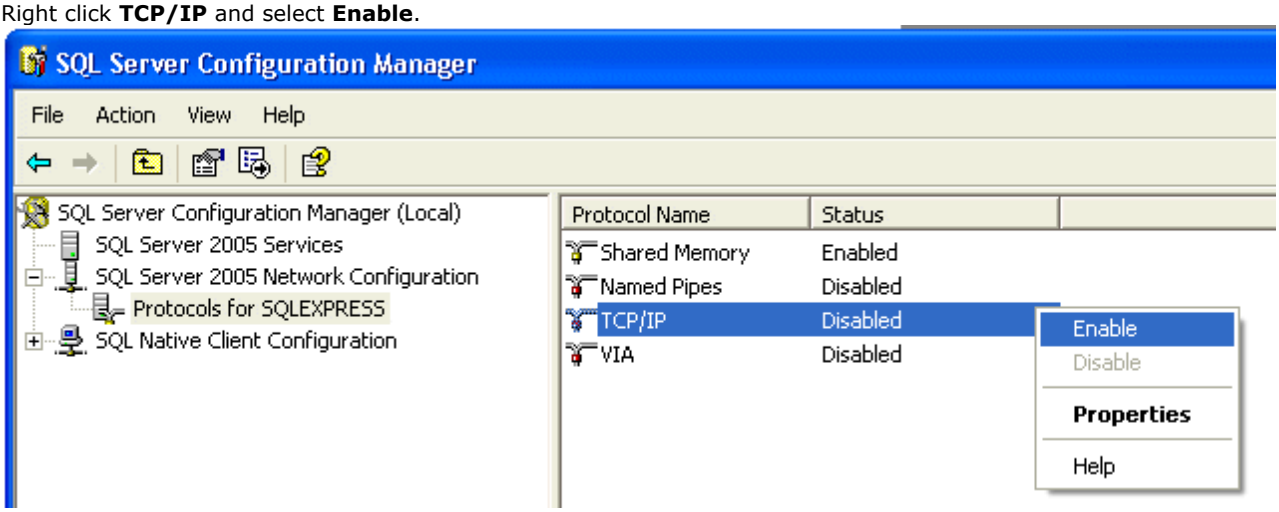


19. Click **Finish** to complete the installation.

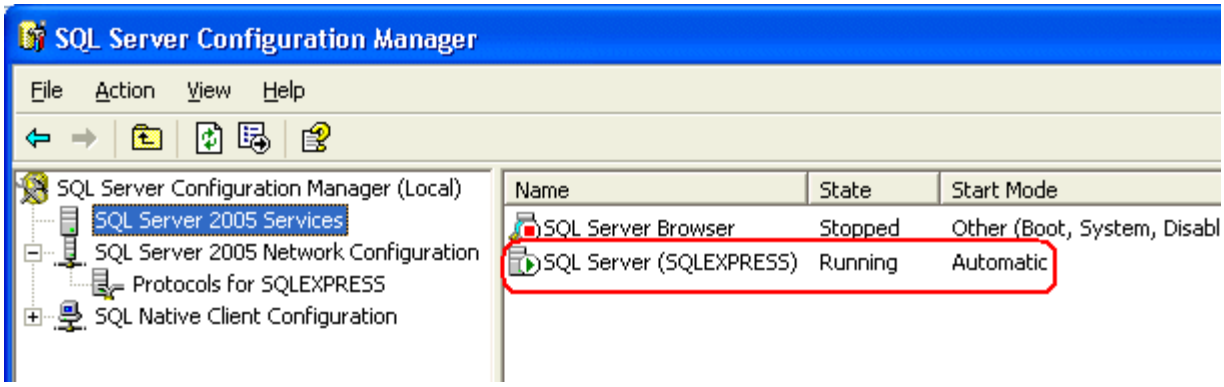
Configuring SQL Server 2005 Express

Some settings need to be configured using the SQL server Configuration Manager before the database is ready to be used with IP Office Customer Call Reporter.

1. Open the application **SQL Server Configuration Manager**.
2. Enable TCP/IP for protocols by:
   - Double click **SQL Server Network Configuration**.
   - Select **Protocols for SQLEXPRESS**.
   - Right click **TCP/IP** and select **Enable**.



   - The warning *"Any changes made will be saved; however, they will not take effect until the service is stopped and restarted"* will open. Click **OK**.
3. Set the start mode for SQLExpress to being automatic by:
   - Click **SQL Service 2005 Services**.
   - Right click **SQL Server (SQLEXPRESS)** and select **Properties**.
   - The SQL Server Express Properties window opens. Select the **Service** tab.
   - Change the **Start Mode** to ***Automatic***.
   - Click **Apply**.
   - Click **OK**.



4. Restart the **SQL Server Browser** and **SQL Server (SQLEXPRESS)** services.

2.8 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:

License	Function
CCR Sup	The presence of at least one **IP Office Customer Call Reporter Sup** license is required to use IP Office Customer Call Reporter. The license is available in 1, 5, 10, 15 and 25 supervisor versions. Multiple licenses can be added to achieve the number of supervisors required up to 30 supervisors. One license instance is consumed for each supervisor configured on the IP Office Customer Call Reporter system, regardless of whether the Supervisor is logged in to IP Office Customer Call Reporter.
CCR Agent	Enables support for IP Office Customer Call Reporter agents. The license is available in 1, 5, 10, 20, 50 and 75 agent versions. 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 IP Office Customer Call Reporteragent configured on the IP Office system, regardless of whether the Agent is logged in to an extension or to IP Office Customer Call Reporter.
CCR CCC UPG	This license allows existing CCC licenses to be used for IP Office Customer Call Reporter, see Upgrading from CCC 12. The CCC licenses are used as follows: • **CCC Server -** Enables 1 supervisor and 5 agents. • **CCC Supervisors -** Enables the equivalent number of supervisors. • **CCC Agents -** Enables the equivalent number of agents.

Note also that on IP500 systems, IP Office Customer Call Reporter V1.0 requires the IP500 to have an ***IP500 Upgrade Standard to Professional*** license.

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 PC 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 PC 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***.

2.9 Agent and Queue Configuration

During installation of IP Office Customer Call Reporter, it is recommended that at least one CCR Group containing one CCR Agent is created within the IP Office configuration.

Agent Configuration

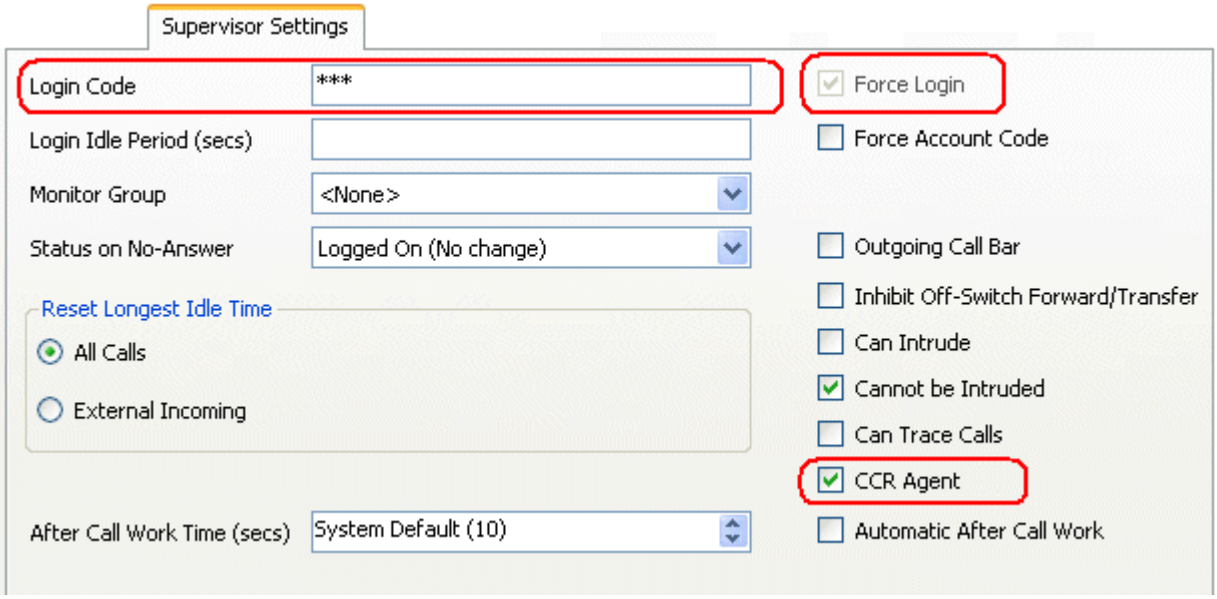
IP Office Customer Call Reporter agents are also IP Office users and are configured through their matching user entry in the IP Office configuration.

The number of users who can be configured as IP Office Customer Call Reporter agents is limited by the number of IP Office Customer Call Reporter Agent licenses also entered into the 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 to be 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 **CCR Agent**.
7. If you are already familiar with After Call Work (ACW) 49 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 being created you may be asked *"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 **CCR Agent Group** should only contain users who have been configured as **IP Office Customer Call Reporter Agents** 46. 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 an **IPOCCR 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 **CCR Agent 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.

2.10 SMTP Email Testing

Simple SMTP Test

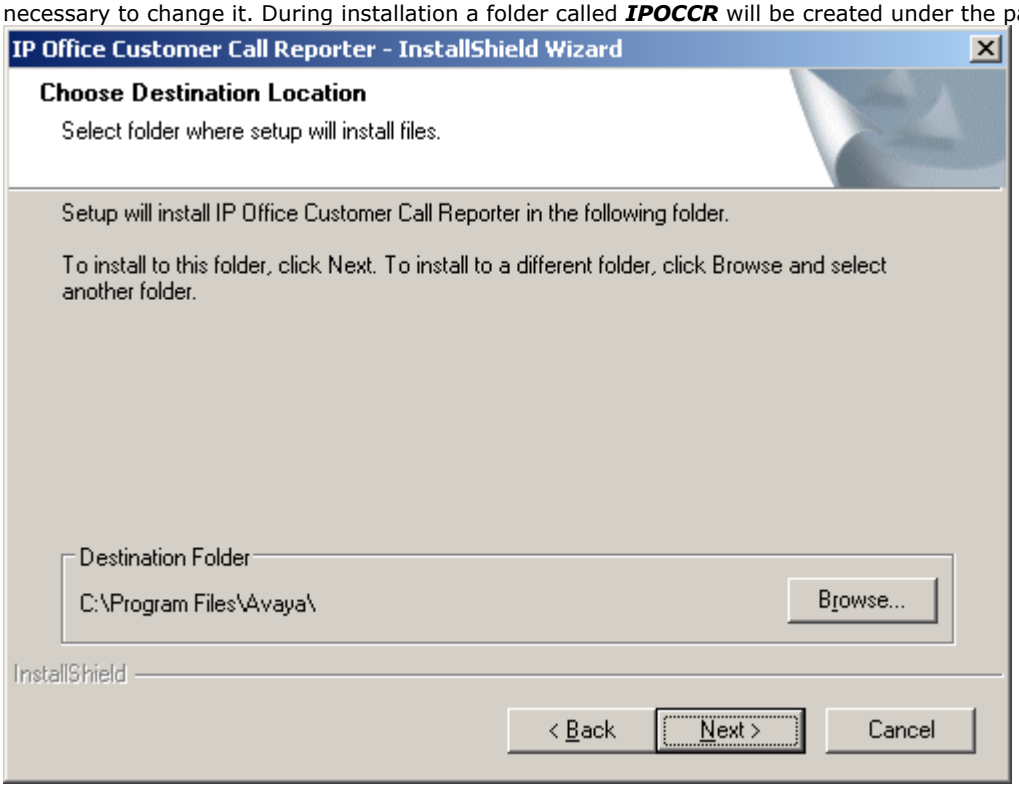
This quick test simply establishes that an SMTP server is listening on the default port (25) for SMTP email sending.

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.

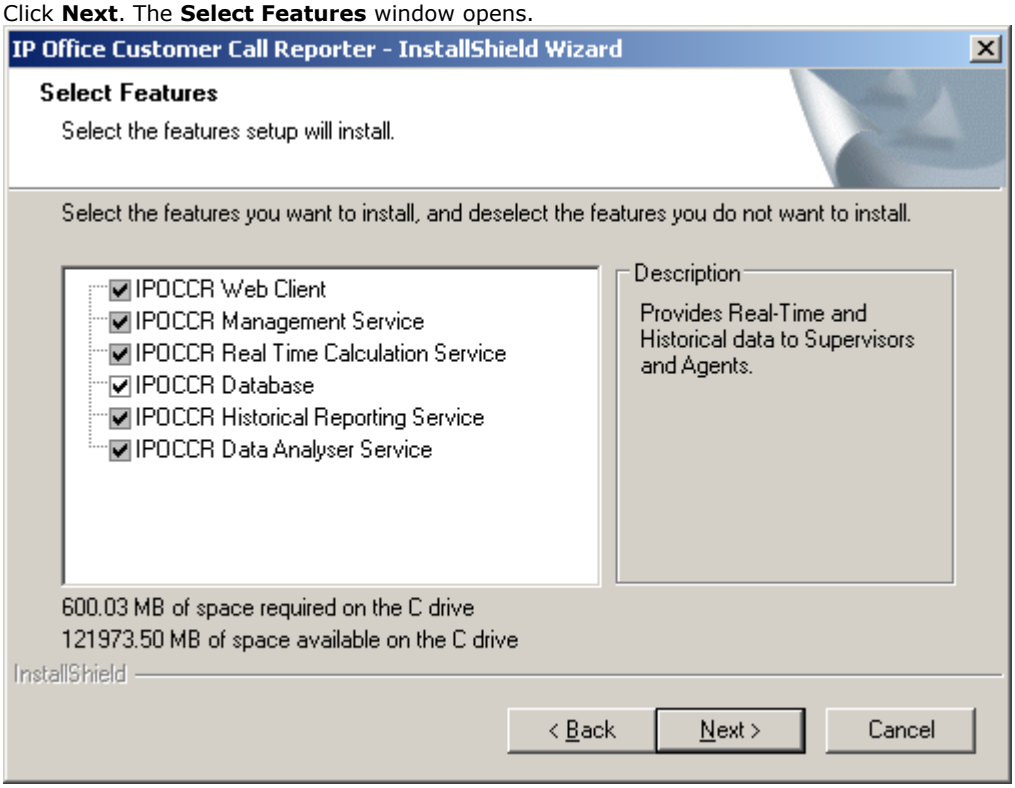
2.11 CCR Software Installation

To install the IP Office Customer Call Reporter Server Application:

1. Check that the software requirements have been met, especially for IIS 22 and the necessary pre-installed applications 23.
2. Log on to the server PC 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 PC requirements have not been met.
5. When completed, the welcome menu appears. Click **Next**.
6. The **Choose Destination Location** window opens. Leave the directory setting at default unless absolutely necessary to change it. During installation a folder called ***IPOCCR*** will be created under the path selected.



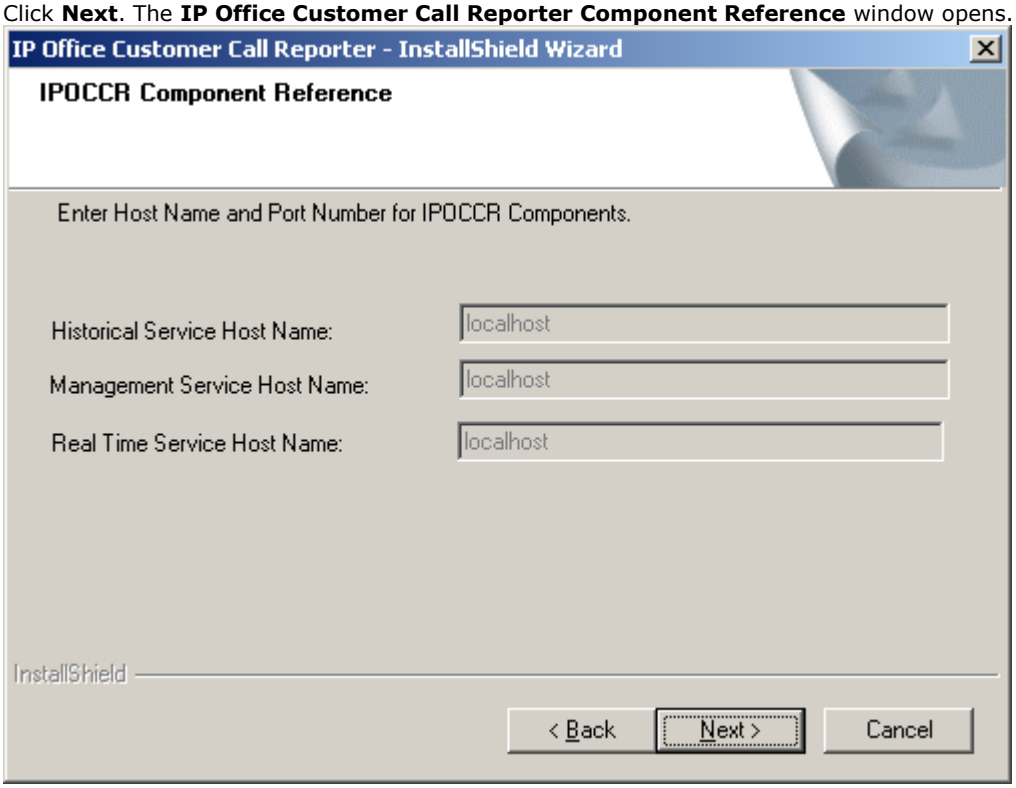
7. Click **Next**. The **Select Features** window opens.



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.

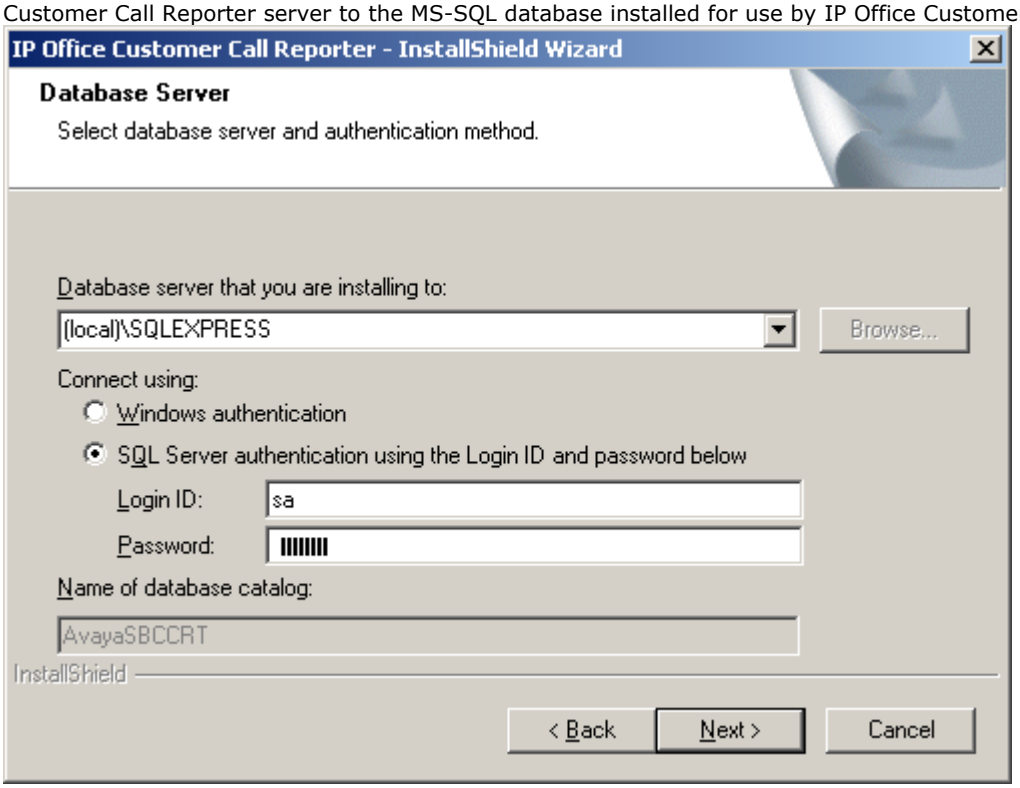
Feature	Installation Notes
IPOCCR Database	This IP Office Customer Call Reporter component must be run on the same PC as the MS-SQL server software. • When installing on the same server PC as the MS-SQL, select the **IPOCCR Database** component. The **Browse** button on the later **Database Server** installation screen will be greyed out as the local MS-SQL servers will be listed in the drop-down list. • When installing on a different server PC 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.
IPOCCR Web Client	For IP Office Customer Call Reporter version 1.0, these components must be installed on the IP Office Customer Call Reporter server PC hosting the IIS application.
IPOCCR Management Service	
IPOCCR Real Time Calculation Service	
IPOCCR Historical Reporting Service	
IPOCCR Data Analyzer Service	

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



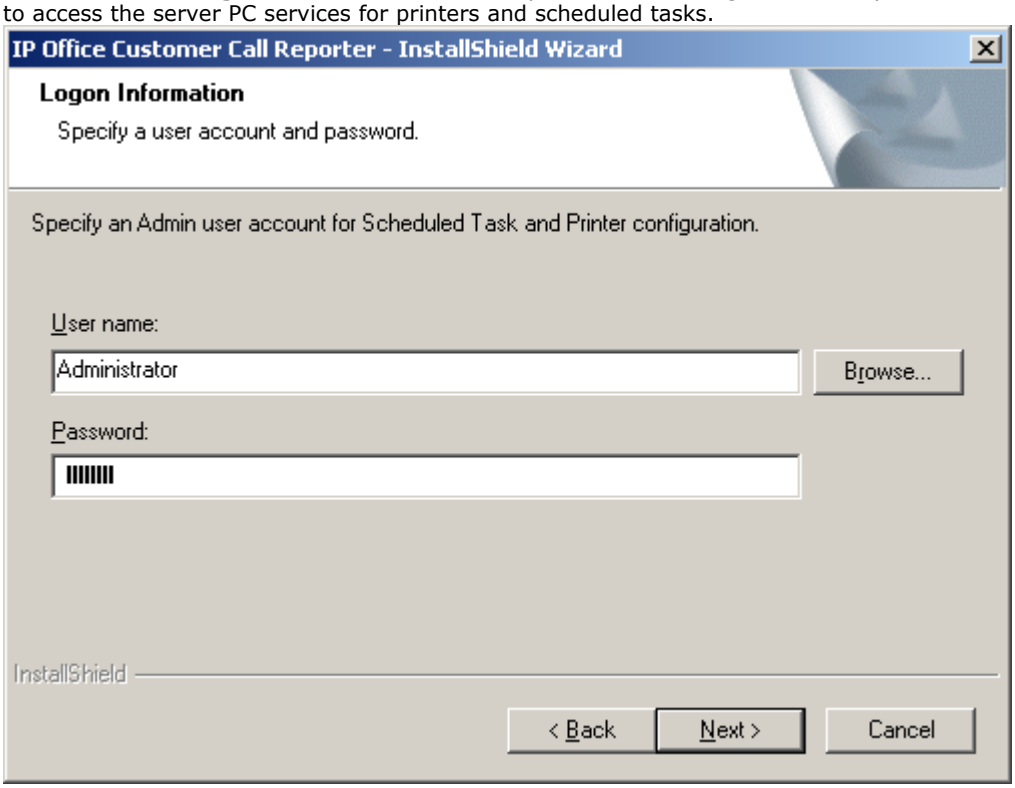
10. Enter any host names required. Note that host names must be used and not IP addresses.

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.



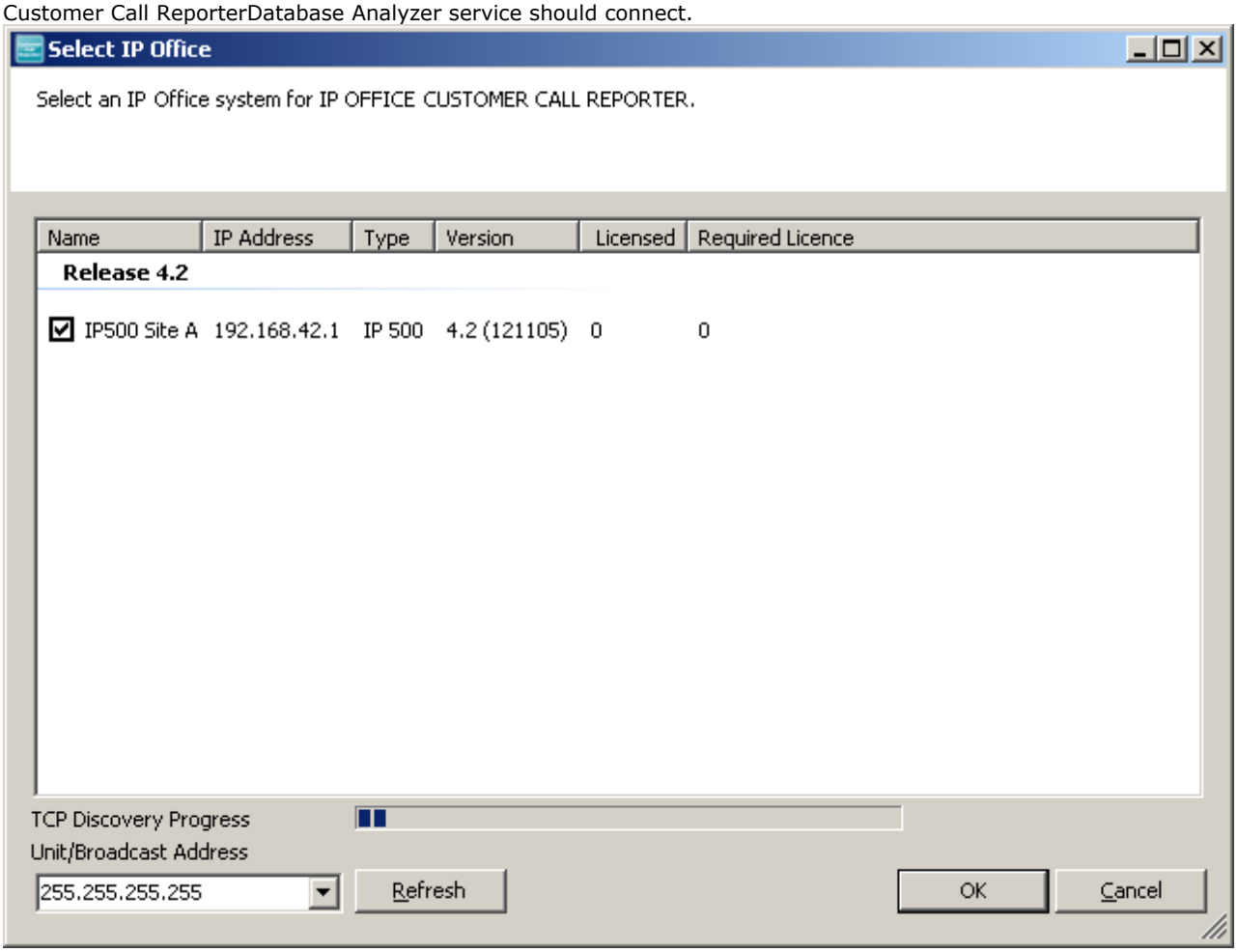
- If you selected to install the **IPOCCR Database** component onto the PC in the earlier installation screen, then the **Browse** button is disabled. In this case use the drop-down list to select the local MS-SQL database instance that you installed for use by IP Office Customer Call Reporter.
- If 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 PC, 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 24.

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

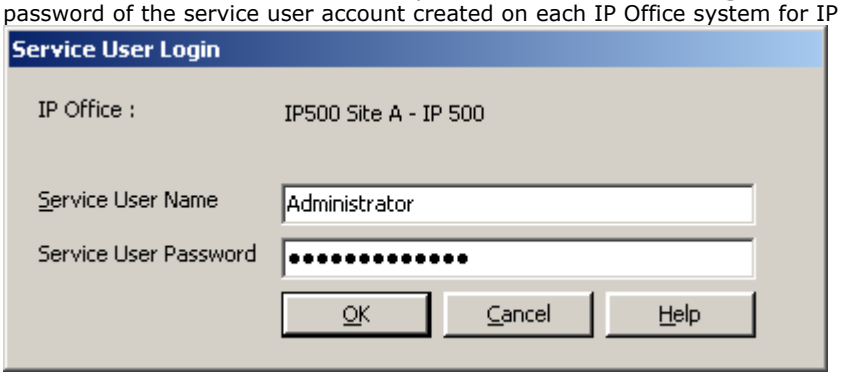


13. Enter a name and password of an administrator rights account on the server PC. The **Browse** button can be used to select an existing account name.

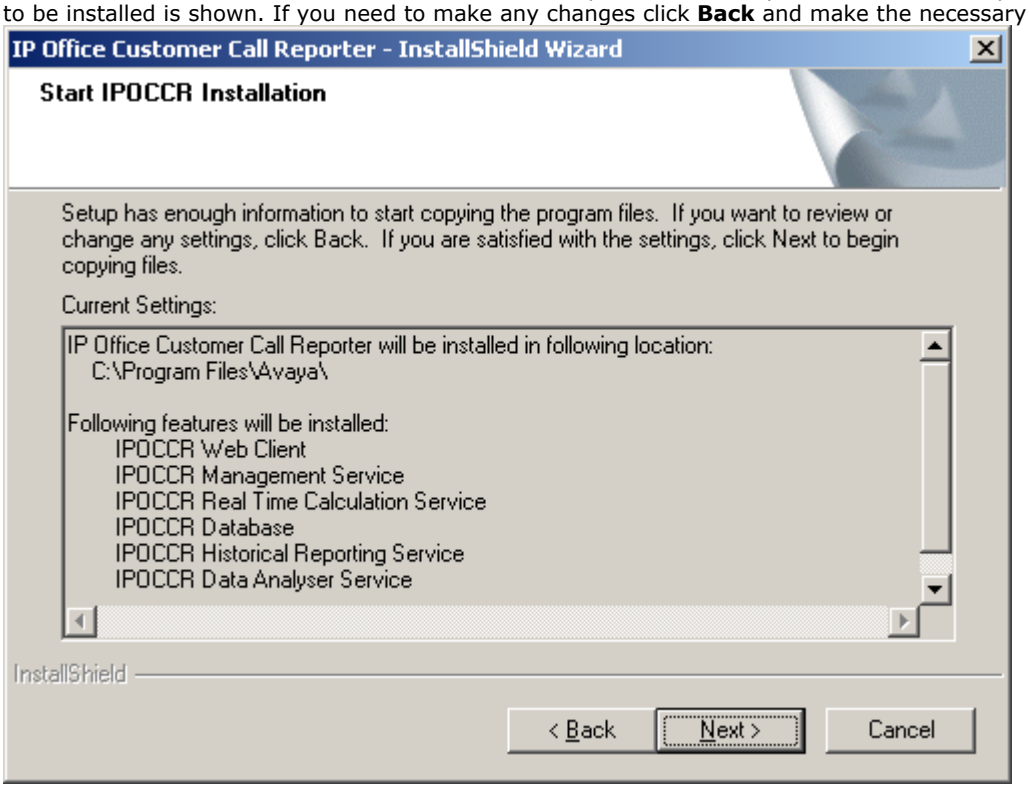
14. Click **Next**. The **Select IP Office** window opens. This is used to indicate the IP Office system which the IP Office Customer Call ReporterDatabase Analyzer service should connect.



15. Click **OK**. For the selected IP Office system, the **Service User Login** window is displayed. Enter the name and password of the service user account created on each IP Office system for IP Office Customer Call Reporter usage.

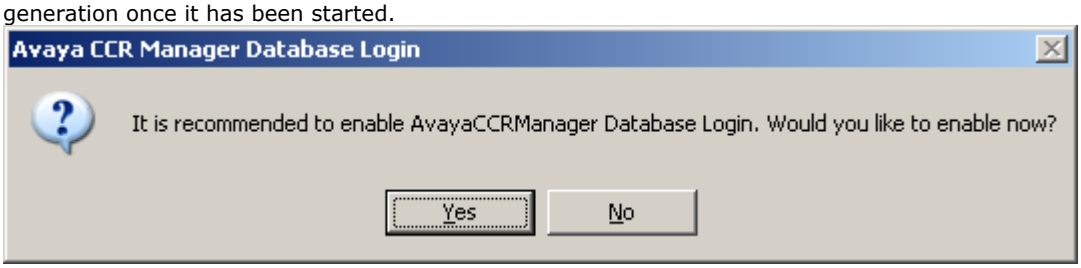


16. Click **OK**. The **Start IPOCCR Installation** window opens. A summary of the selected components that are about to be installed is shown. If you need to make any changes click **Back** and make the necessary changes.



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

18. 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.



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

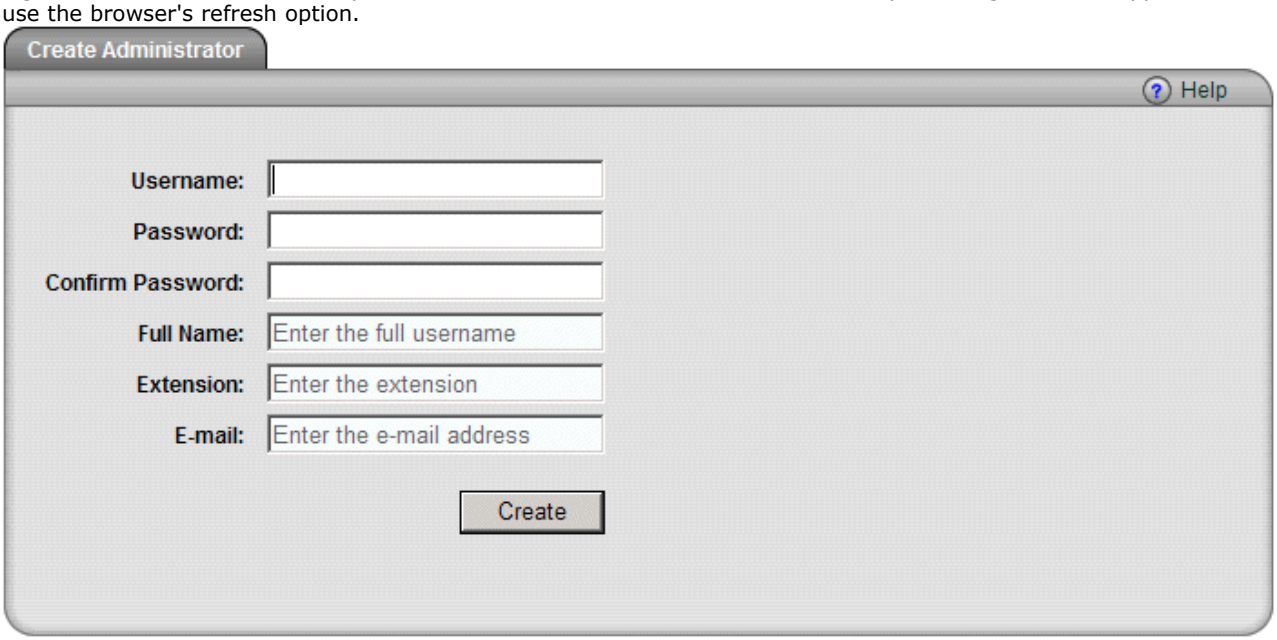
20. Click **Finish**.

21. 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 39.

2.12 CCR Administrator Creation

The following section relates to the default screen that should appear following installation of the IP Office Customer Call Reporter application components on the IP Office Customer Call Reporter server PC.

1. When the installation is complete the default local browser will be run to display the IP Office Customer Call Reporter. The page that appears 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. If the standard IP Office Customer Call Reporter Log In screen appears, use the browser's refresh option.



2. Enter the details for the IP Office Customer Call Reporter administrator:

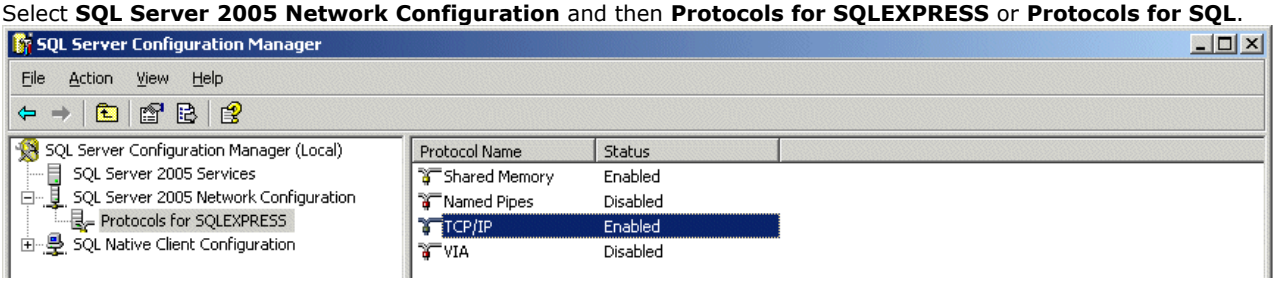
   - **Username**
     The logon name for the IP Office Customer Call Reporter administrator account.
   - **Password** & **Confirm Password**
     Enter and confirm the password that the administrator will use.
   - **Full Name**
     This name is used for information display within IP Office Customer Call Reporter.
   - **Extension**
     Enter the telephone extension number associated with the administrator. This is for information only.
   - **E-mail**
     Enter the email address associated with the administrator. This is used for IP Office Customer Call Reporter functions such as the **Forgotten Password** function.

1. Click **Create**. The administrator account is created and you will be logged in to IP Office Customer Call Reporter as the administrator.
2. Click on System Settings. You should see a list of the IP Office switches that were detected on the network. The system to which the IP Office Customer Call Reporter is connected will be listed as True in the Connected column with the other systems listed as False.
3. Click on **Show Preference Details...**.
4. The key details required here to complete installation are the SMTP email server details. Enter the details as configured earlier for the SMTP server and for the account to be used by the IP Office Customer Call Reporter.
5. Click **Update**.
6. The new details will be save by the IP Office Customer Call Reporter and the screen will change to show the normal IP Office Customer Call Reporter login screen.

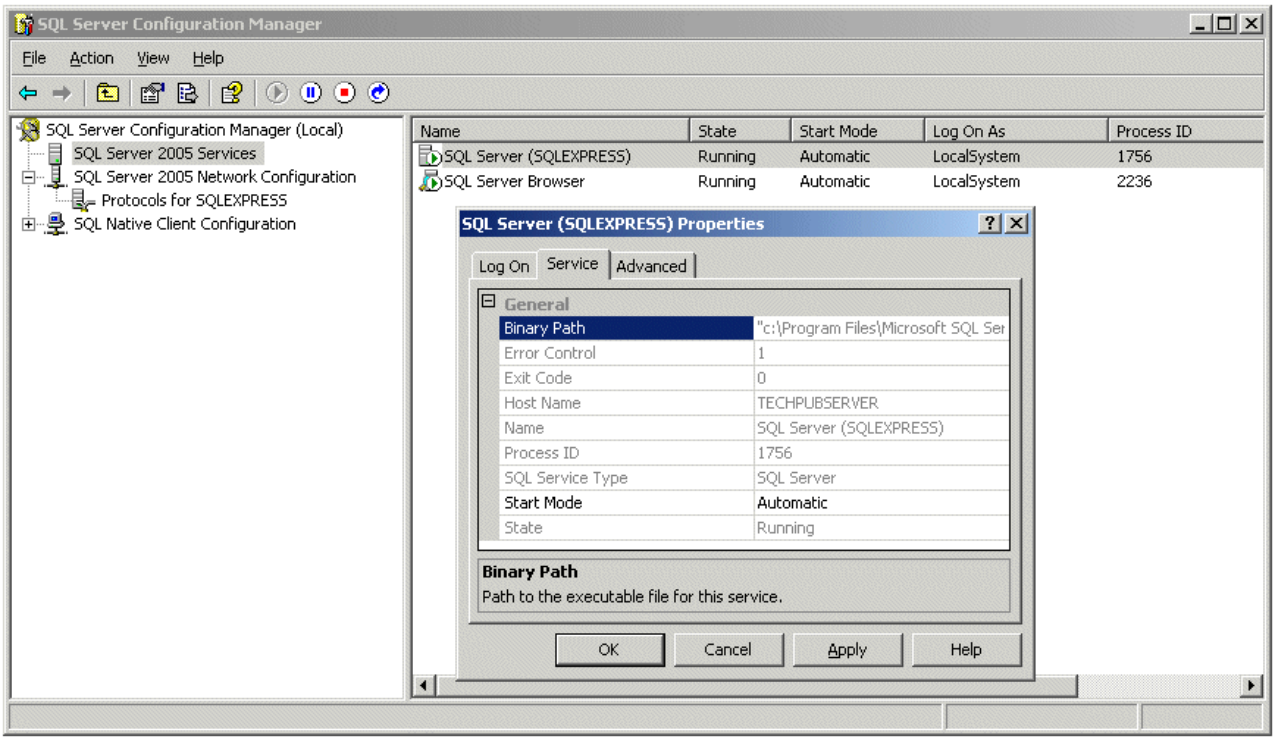
2.13 MS-SQL Configuration

After installation of the MS-SQL and IP Office Customer Call Reporter components, the follow steps have to be followed 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 2005 | Configuration Tools | SQL Server Configuration Manager**).
2. Select **SQL Server 2005 Network Configuration** and then **Protocols for SQLEXPRESS** or **Protocols for SQL**.



3. Right click on **TCP/IP** and select ***Enable***.
4. Select **SQL Server 2005 Services**.
5. Right click on **SQL Server(SQLEXPRESS)** and select **Properties**. Select the **Service** tab and set the **Start Mode** to ***Automatic***. Click **OK**.



2.14 Firewall Settings

If the server is running a firewall then traffic on some additional ports may need to be allowed. The detail here cover the addition of those ports for the default Windows firewall.

1. Access the **Widows Firewall** settings (**Start | Control Panel | Windows Firewall**).
2. Select the **Exceptions** tab.
3. Click **Add Port...**.
   - Enter a name to describe the function such as ***IPOCCR SQL Access***.
   - Set the **Port** to ***1433*** and ***TCP***.
4. Repeat the above operation but for ***UDP*** port ***1434***.
5. Click **OK**.

2.15 Network Printers

The schedule reporting features of IP Office Customer Call Reporter can either email reports to users or print them 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 PC.

1. Check that the IP Office Customer Call Reporter server PC has been setup for printing to the customers network printers (select **Start | Printers and Faxes**). Use the **Add Printer** wizard if necessary to add a networked printer.
2. For each network printer, right-click on the printer and select **Properties**.
3. Check that the server PC's default page setup is set to the appropriate paper size used by the printer. If this needs changing 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 3.
IP Office Configuration

3. IP Office Configuration

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** 48.
2. **Configuring IP Office Customer Call Reporter Agents** 46.
3. **Configuring IP Office Customer Call Reporter Queues** 47.
4. **Configuring After Call Work Controls** 49.
5. **IP Office Short Codes** 50.
6. **Button Programming** 50.
7. **Voicemail Report Setup** 51.

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.

- **Note: IP Office IP Address**
  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 is changed after installation of IP Office Customer Call Reporter, new data for the existing queues and agents will be tagged with the new IP address. This will 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.

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.

3.1 Agent Configuration

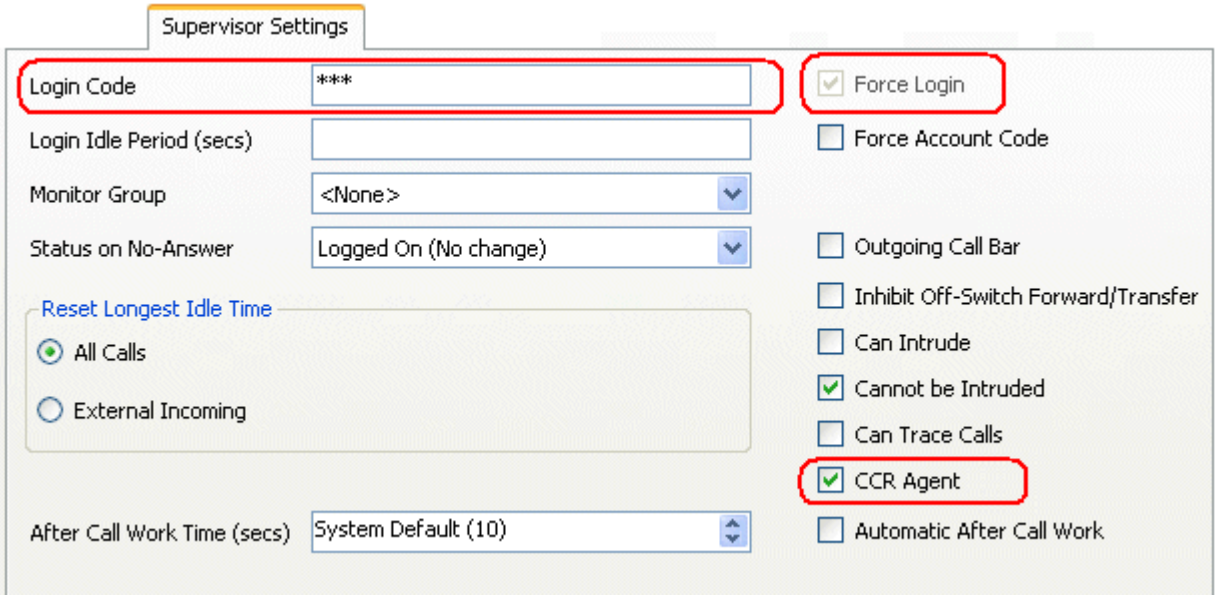
IP Office Customer Call Reporter agents are also IP Office users and are configured through their matching user entry in the IP Office configuration.

The number of users who can be configured as IP Office Customer Call Reporter agents is limited by the number of IP Office Customer Call Reporter Agent licenses also entered into the 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 to be 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 **CCR Agent**.
7. If you are already familiar with After Call Work (ACW) 49 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 being created you may be asked *"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.

3.2 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 **CCR Agent Group** should only contain users who have been configured as **IP Office Customer Call Reporter Agents** 46. 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 an **IPOCCR 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 **CCR Agent 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.

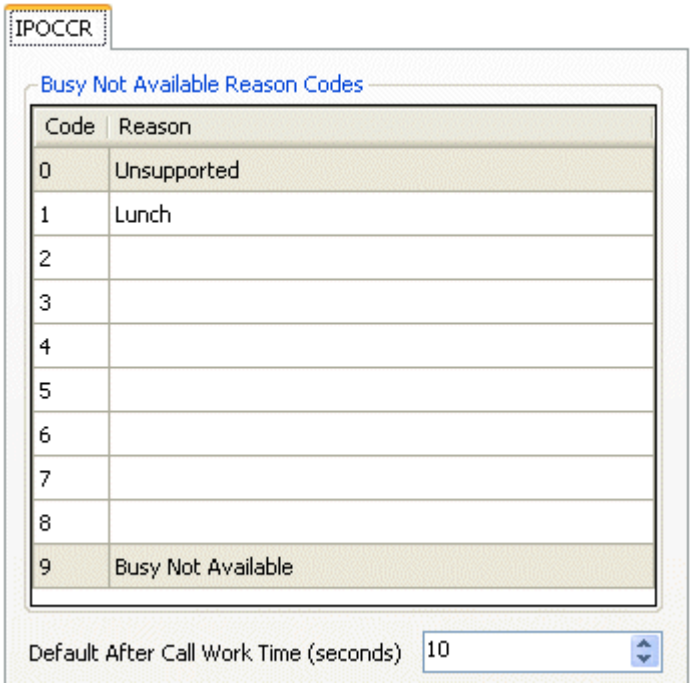
3.3 Reason Codes

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

When agent on suitable phones (2410, 5410, 2420, 5420, 4610, 5610, 5620, 5621, 4620, 4621, 4625, 1608, 1616) select Busy NA using a programmable button 46, the phone 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.

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. It is recommended to 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 phone. Reason codes ***0*** and ***9*** are fixed and are used as follows:
   - **0: Unsupported**
     This reason code is used for agents using phones 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 phone 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 NA using a short code or Phone Manager or is forced into Busy NA 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.

3.4 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 phone, 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, it is recommended that they have a programmable button configured 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 50.

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**

3.5 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.

3.6 Button Programming

If the agent is going to be logging in at Avaya phones 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.

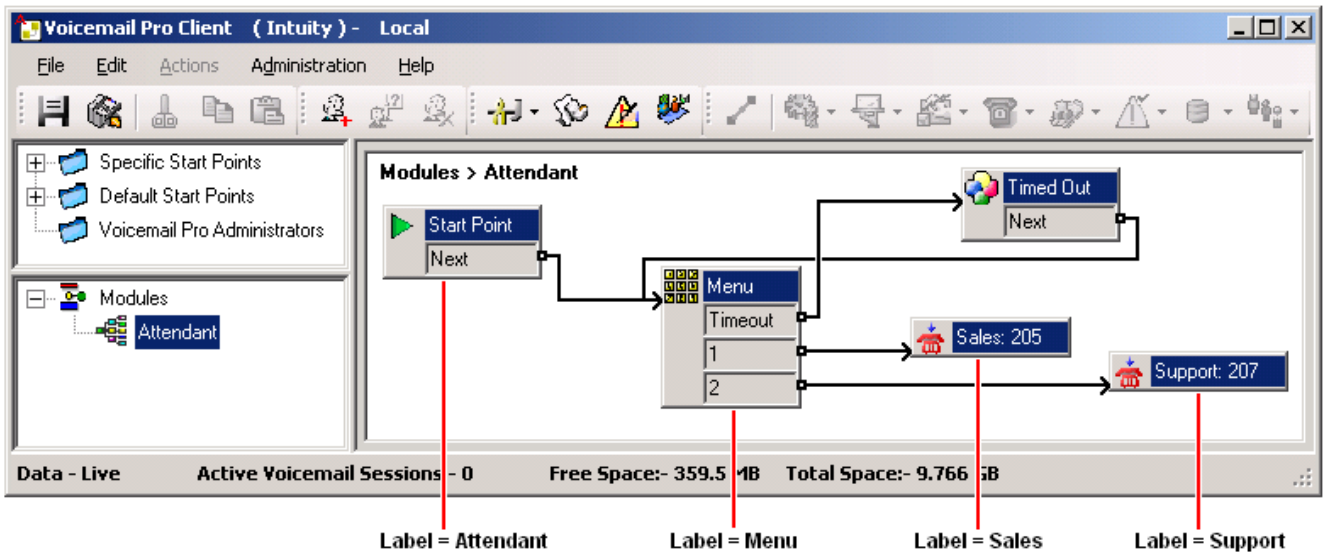
Recommended buttons, in addition to the default **Call Appearance** buttons, are:

- **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 NA (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 an button on the following phones will be requested to select a reason code 48 if any have been set: 2410, 5410, 2420, 5420, 4610, 5610, 5620, 5621, 4620, 4621, 4625, 1608, 1616.
- **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.

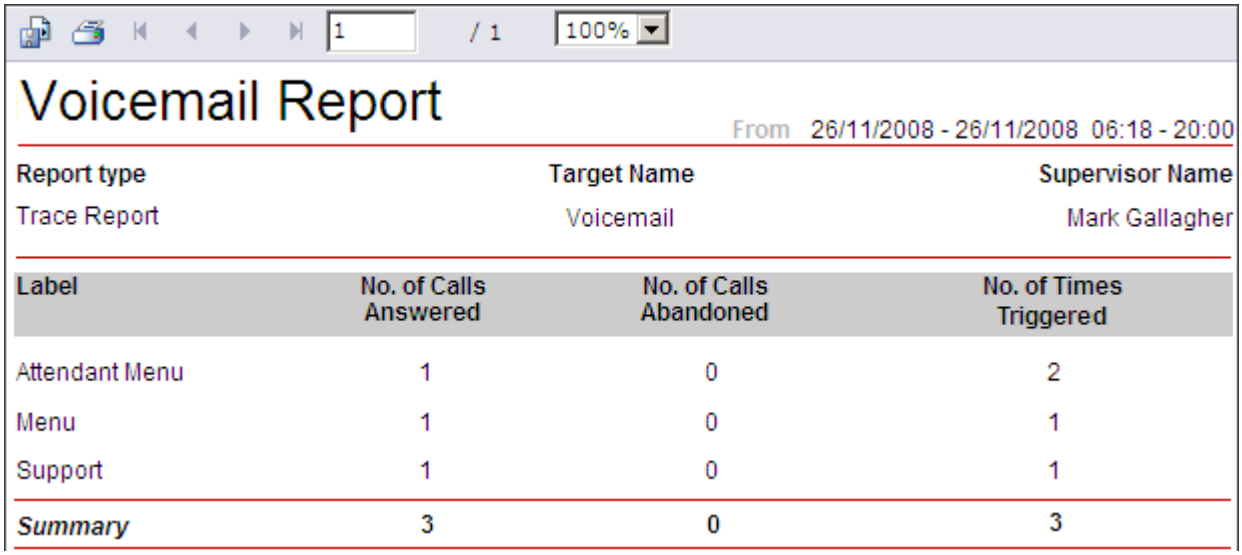
3.7 Voicemail Report Setup

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 12. 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 Name to an Action below). 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

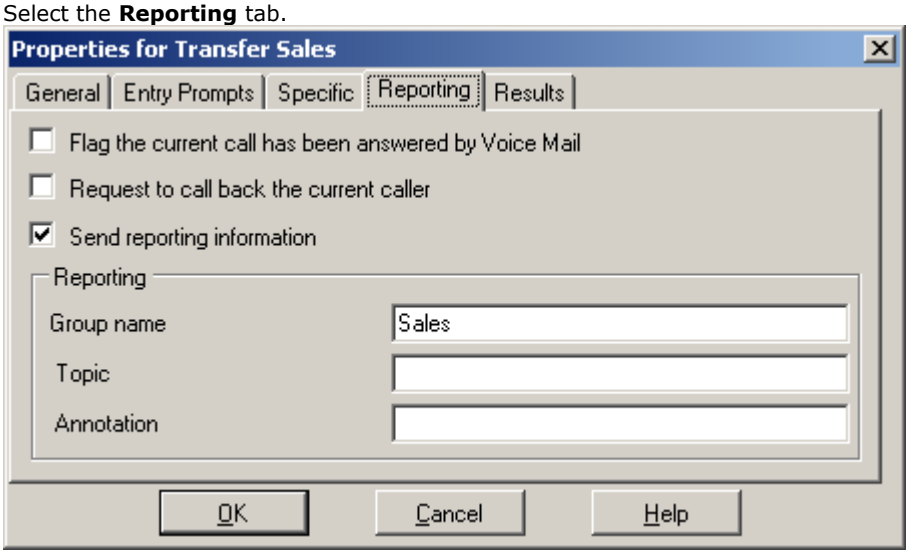
Report type	Target Name	Supervisor Name
Trace Report	Voicemail	Mark Gallagher

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 may want to 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.

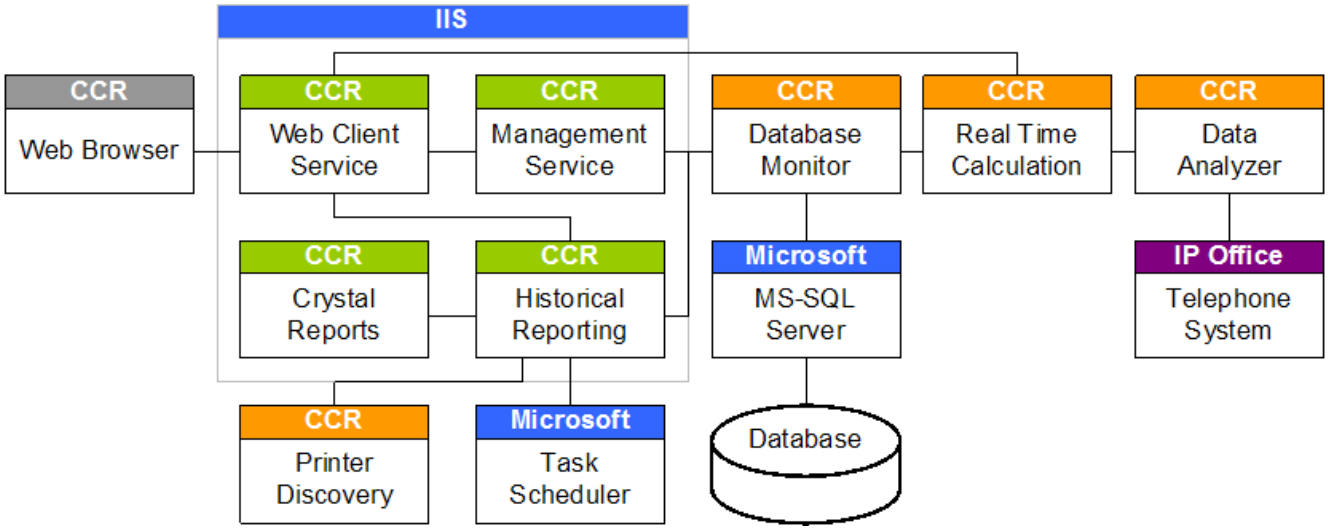


3. Select **Send reporting information**.
4. In the **Group name** field enter the name to associate with the action. This is the name that will be used in reports based on the the Voicemail Report template. None of the other fields are used by IP Office Customer Center Reporter.
5. Click **OK**.

Chapter 4.
Maintenance and Diagnostics

4. 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 /AvayaSbIP Office Customer Call ReporterTService.exe)*
  This service receives data from the Data Analyzer service. It performs necessary 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 PC.
- **MS-SQL Service** *(MSQLServer or SQLExpress)*
  This service manages input and output to the database used by IP Office Customer Call Reporter.

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.
- **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.

Additional components:

- **Task Scheduler**
  This is a standard Windows application on the IP Office Customer Call Reporter server PC. 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.

4.1 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 Circle - On**
  IP Office Customer Call Reporter is running.
- **Yellow Bars - Slow Flash**
  Some parts of IP Office Customer Call Reporter are still in the process of starting.
- **Red Box - Flash**
  There may be a problem in IP Office Customer Call Reporter.

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

It is important to understand that the status lamp is not an monitor of the IP Office Customer Call Reporter application status. It is simply driven by the events that the IP Office Customer Call Reporter components write to the server PC's event log 57. 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 appears to be operating correctly. Clearing the Windows Application event log may correct the status mireporting.

4.2 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 ensure that you have read the appropriate IP Office Technical Bulletins for the new IP Office Customer Call Reporter software and for the IP Office core software. They may contain notes critical to the upgrade process.

During the upgrade, the username and password details used for the original database access are required.

It is recommended that you backup the database 59 before starting an upgrade.

4.3 Removing 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**.

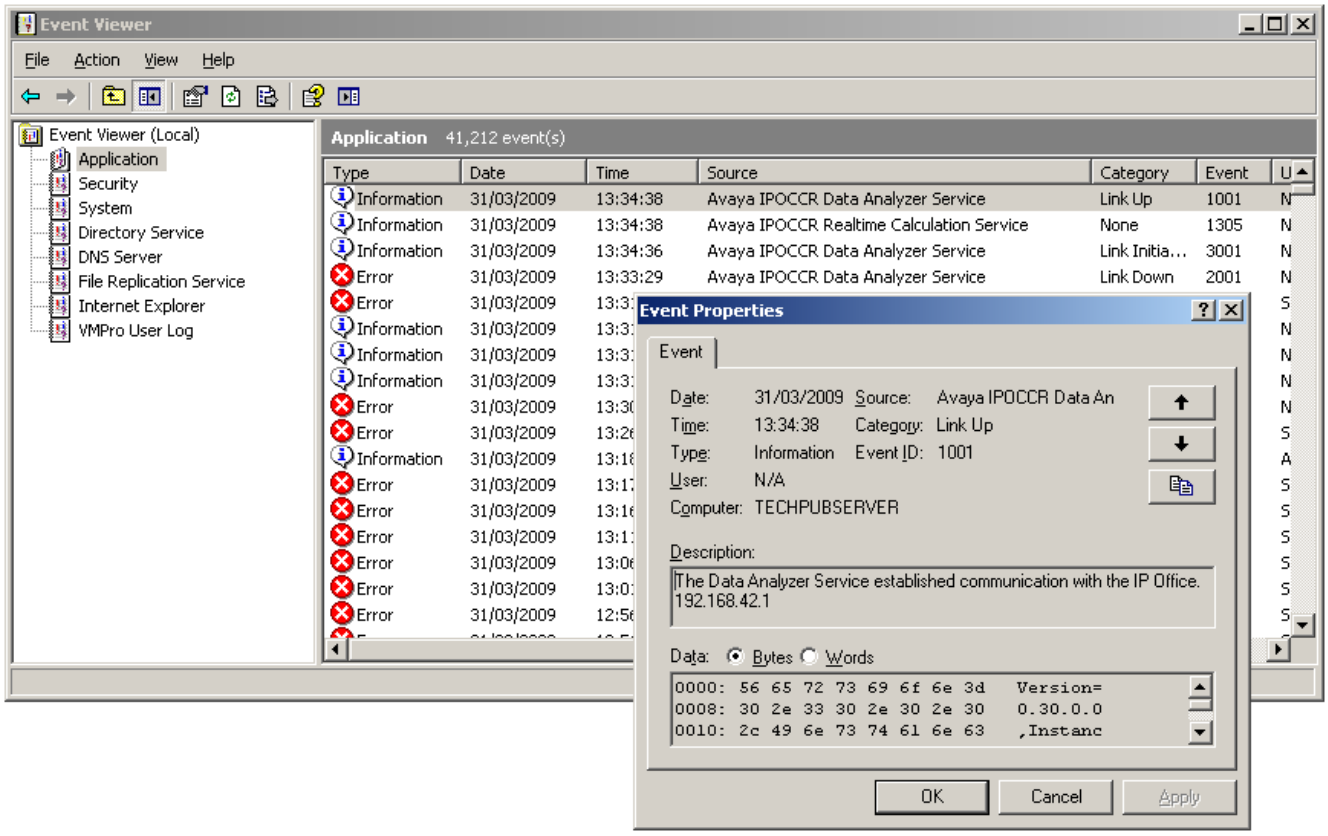
The database is not removed and the software pre-requisites are not removed.

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.

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

4.4 Event Logging

The various components of IP Office Customer Call Reporter [54] write event messages to the server PCs 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.

Event	Description
2004	The Historical Reporting Service experienced communication failure with the Database.
2005	The Management Service experienced communication failure with the Database.
2006	The Client experienced communication failure with the Management Service.
2007	The Client experienced communication failure with the Realtime Calculation Service 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.

4.5 Database Backup

MS-SQL 2005 Express Edition does not include any backup or restore functions. However the free download MS-SQL Server Management Studio Express can be used to perform a range of manual tasks including backing up and restoring databases.

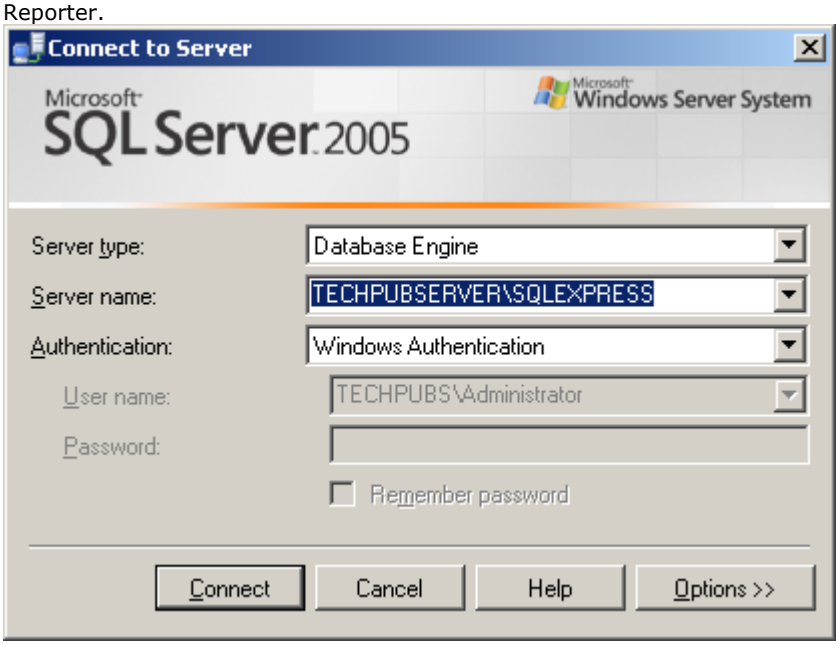
In addition, Studio Express will display the SQL command script used for actions like backup. That script can then be used in a number of software tools to perform those actions including automatic database backups if required.

- **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 lose of data or other problems resulting from direct database access.

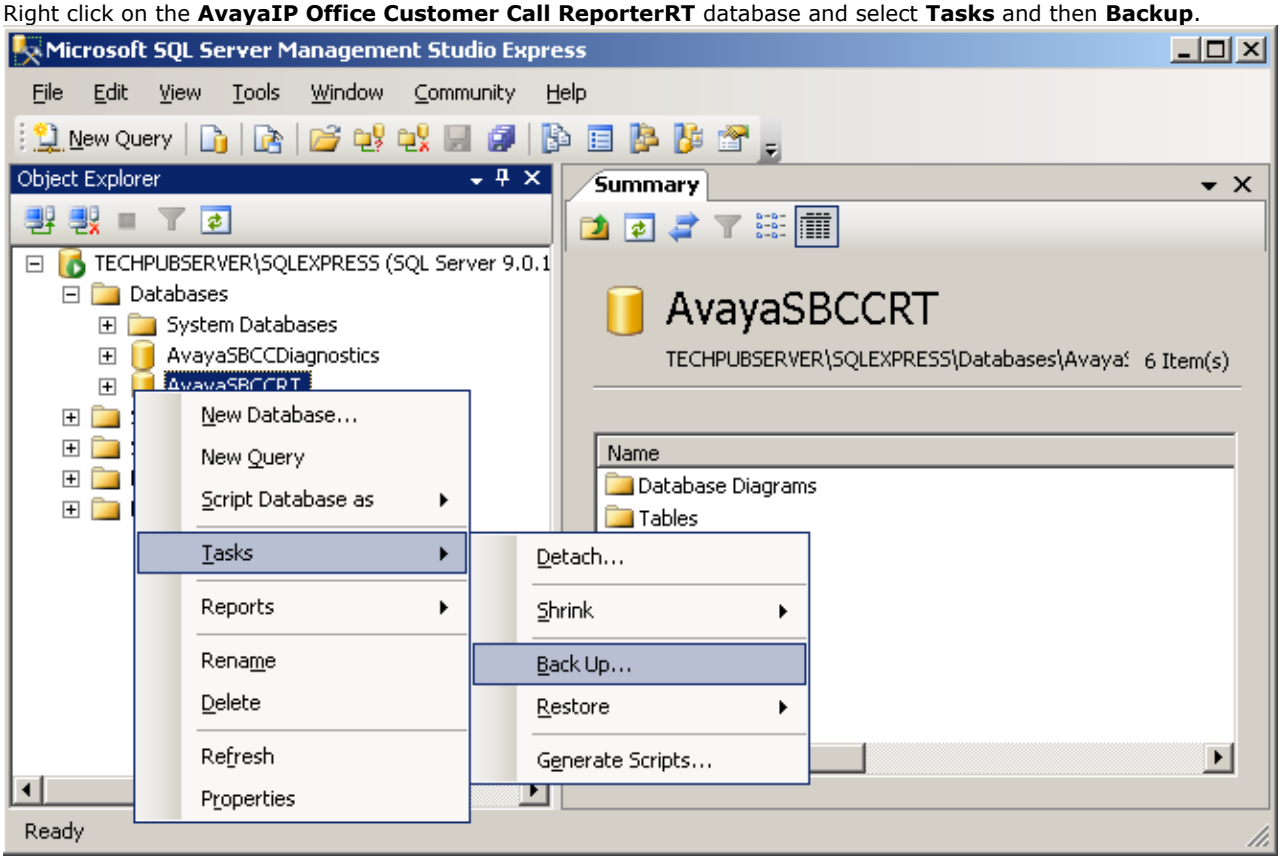
4.5.1 Manual Database Backup

- **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 lose of data or other problems resulting from direct database access.

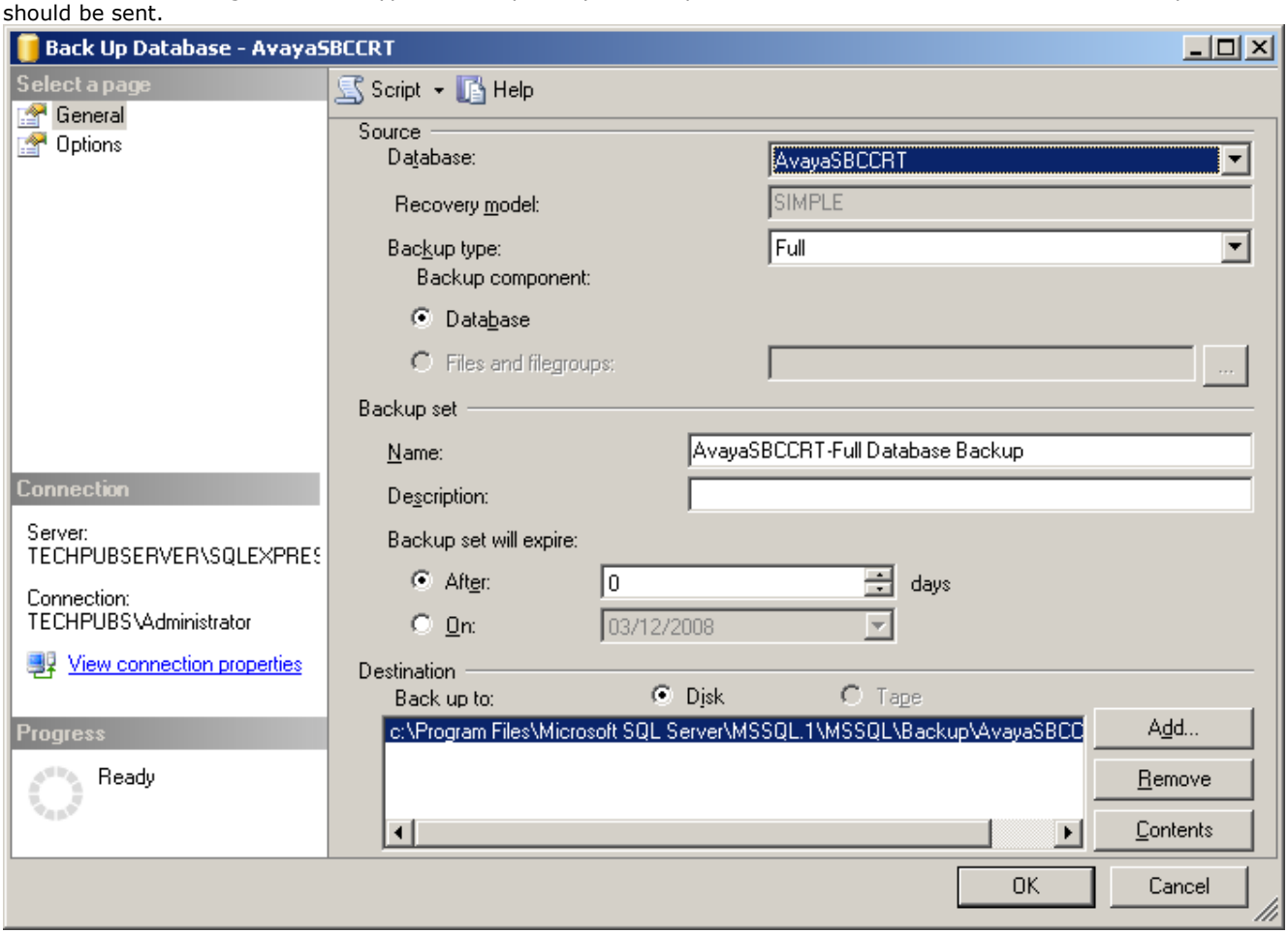
1. Start SQL Server Management Studio Express and connect to the database being used for IP Office Customer Call Reporter.



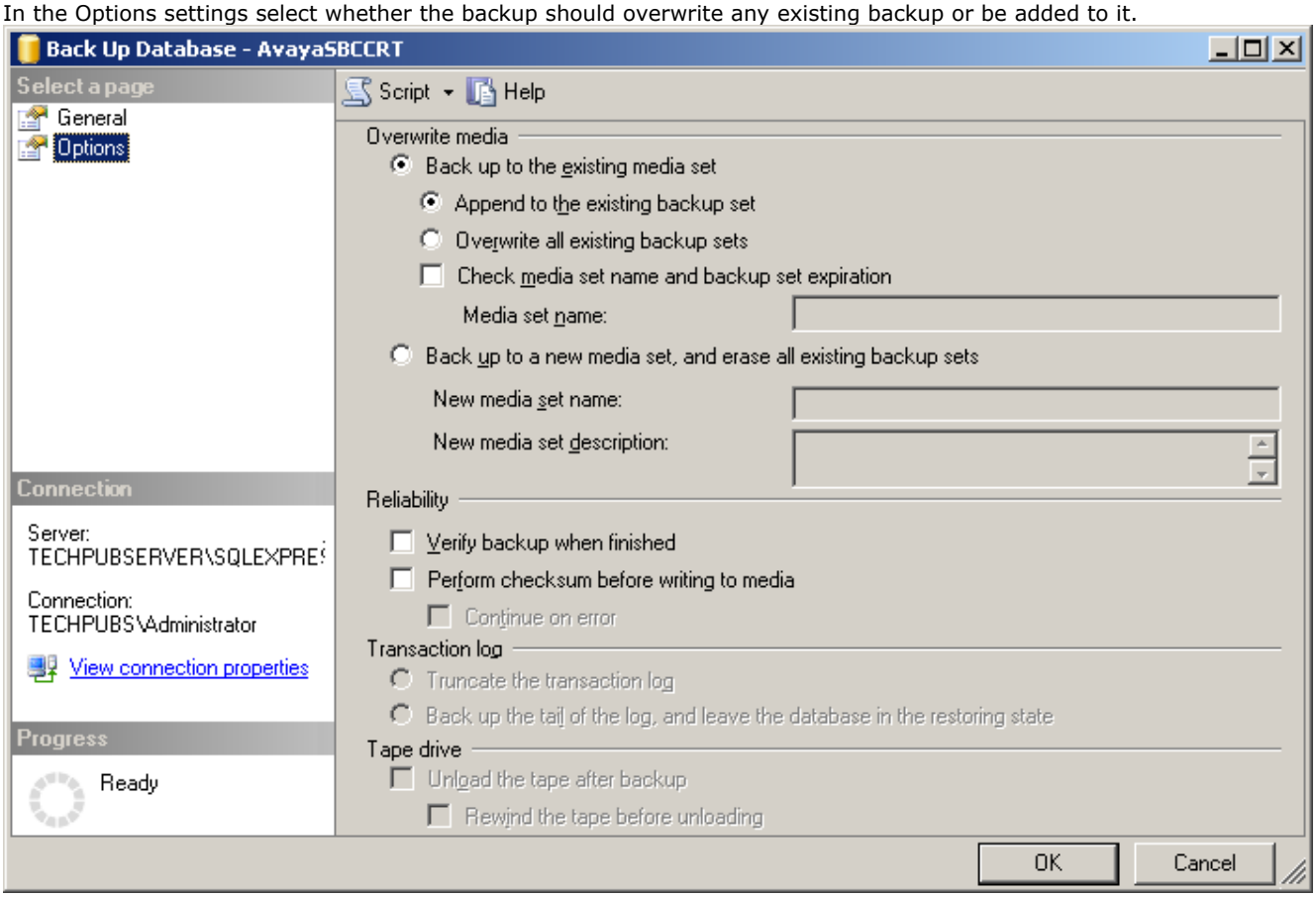
2. In the **Object Explorer** panel browse to the **Databases** folder. The key database that you may want to backup is the **AvayaIP Office Customer Call ReporterRT** database. This contains the historic data plus switch and IP Office Customer Call Reporterconfiguration data.
3. Right click on the **AvayaIP Office Customer Call ReporterRT** database and select **Tasks** and then **Backup**.



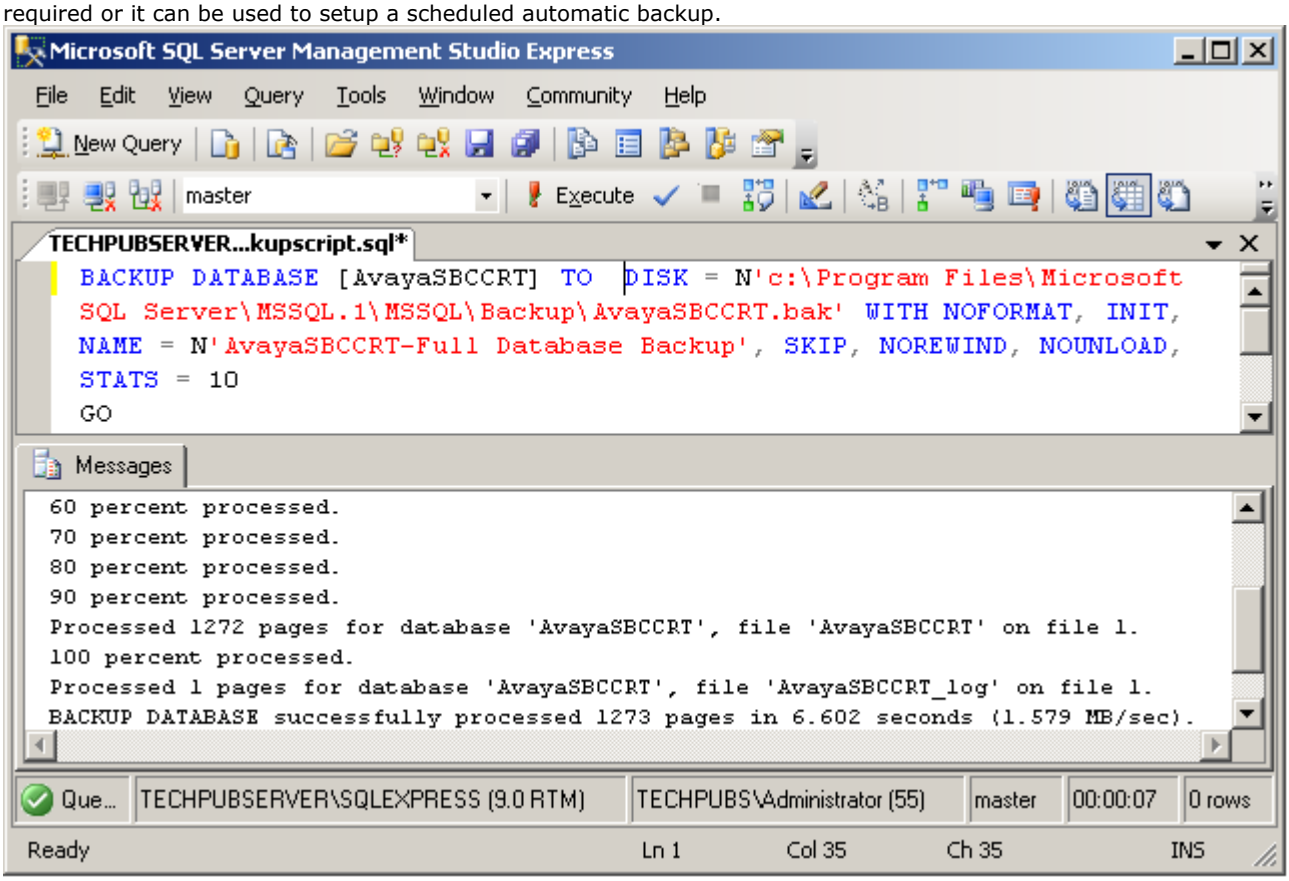
4. In the **General** settings select the type of backup that you want performed and the location to which the backup should be sent.



5. In the Options settings select whether the backup should overwrite any existing backup or be added to it.



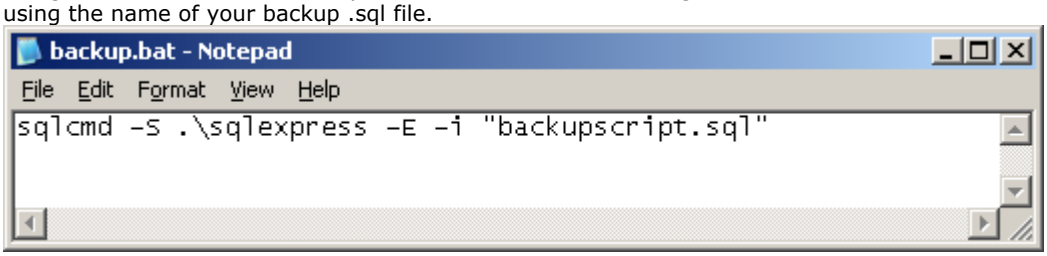
6. To run the backup click **OK**. The progress of the backup process is displayed. Check in the location specified that the backup file has been created.
7. At this stage you can also click **Script** to see the text of the SQL command constructed from the backup parameters you have specified. This can be saved as a file. That file can then be used to manually run the when required or it can be used to setup a scheduled automatic backup.



4.5.2 Automatic Database Backup

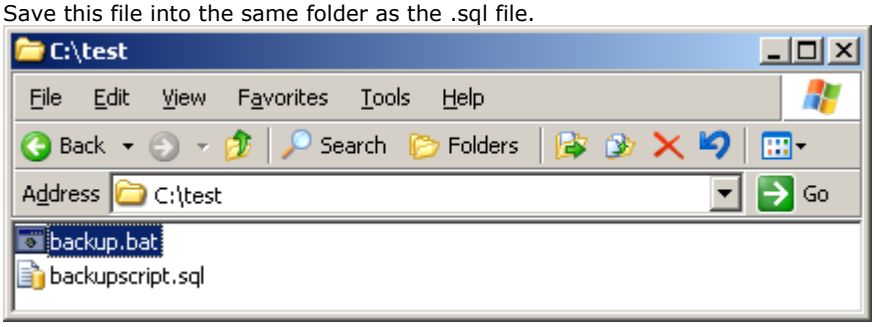
This process uses the Windows Scheduler to run a previously saved SQL script file.

1. Using the manual database backup process 60, setup and test the backup process works as required, for example placing the file in the required location.
2. Once the manual backup process works as required, view the script and save this as an .sql file.
3. Using a text editor such as Notepad, create a bat file containing a command similar to the following example but using the name of your backup .sql file.



   - **sqlcmd**
     This is a reference to sqlcmd.exe which is an application executable installed as part of MS-SQL.
   - **-S**
     The SQL server. In this example ***.\sqlexpress*** refers to MS-SQL 2005 Express Edition. If necessary you can run a command window, type ***sqlcmd -L*** to list the servers.
   - **-E**
     This is an instruction to access the server using Windows authentication mode. This requires the command to be run using an account with access to the MS-SQL 2005 server PC. Note: The alternate options **-U** and **-P** can be used to enter a SQL user name and password however these appear in plain text in the batch file and so are not recommended.
   - **-i**
     This is the input file for sqlcmd.exe to execute, in this example the previously saved .sql file containing the backup script.

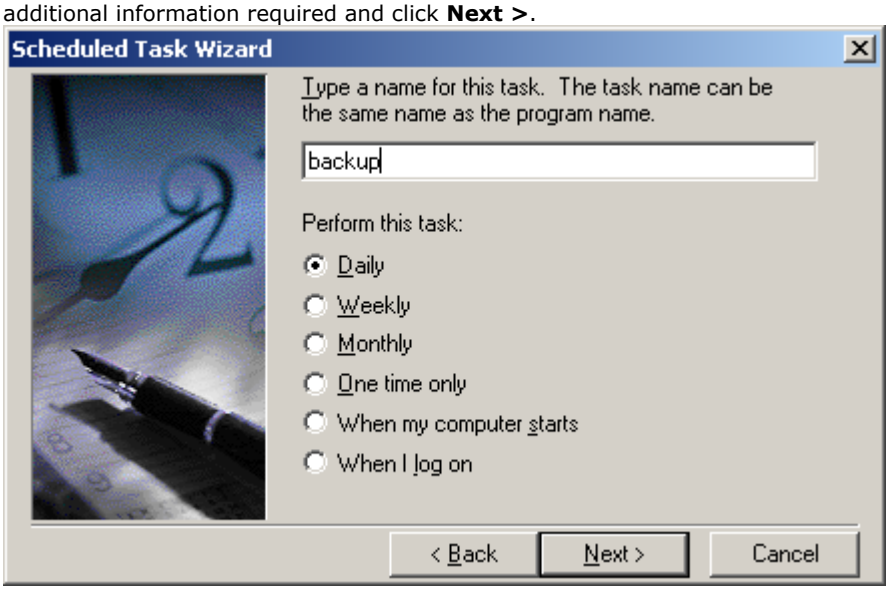
4. Save this file into the same folder as the .sql file.



5. Double-click on the batch file. A command window should appear showing the progress of the backup and then closes when the backup has been completed.
6. Select **Start | System Tools | Scheduled Tasks**.
7. Double-click on **Add Scheduled Task**. The **Scheduled Task Wizard** will begin. Click **Next >**.

8. Click on the **Browse** button and browse to the batch file previously created. Select the file and click **Next >**.

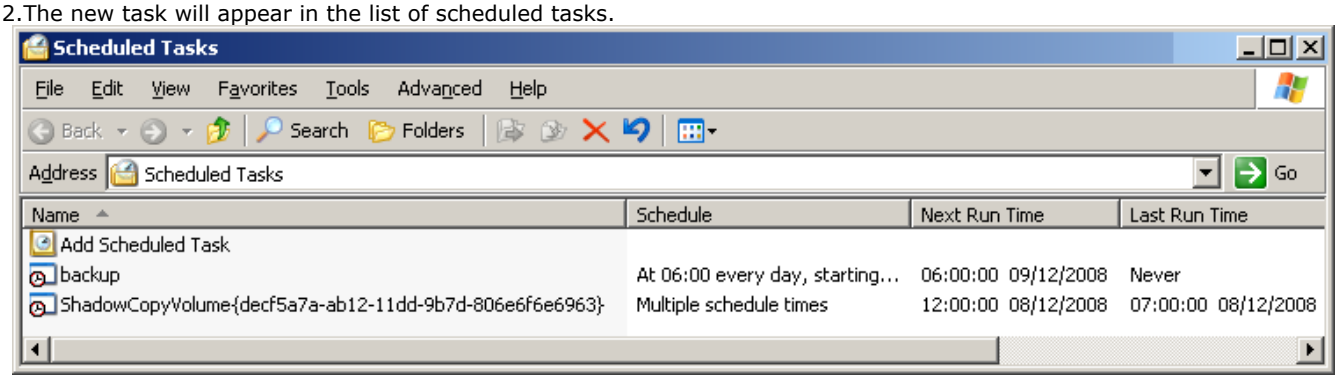
9. Enter a name for the task and set when it should run. Click **Next >**. Depending on the selected schedule enter additional information required and click **Next >**.



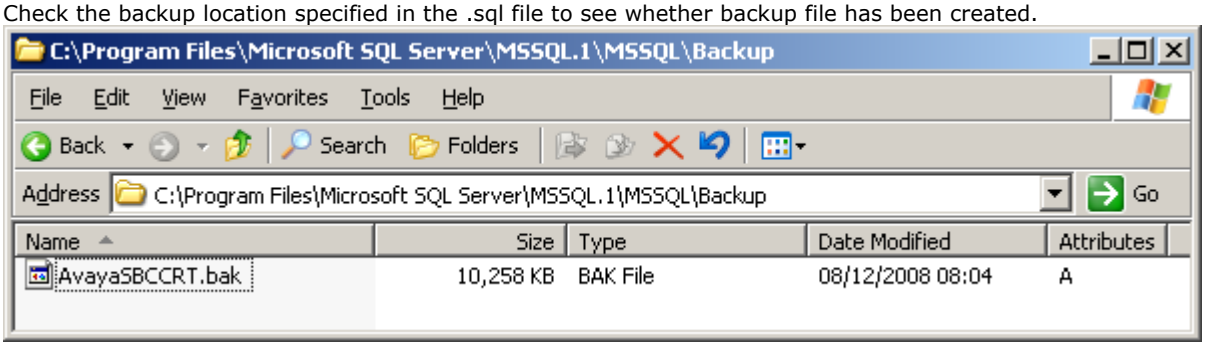
10. Enter the user name and password for the account under which the scheduled task will run. This must be an account with access rights to the MS-SQL server. Click **Next >**.

11. Click **Finish**.

12. The new task will appear in the list of scheduled tasks.



13. Right-click on the task and select **Run**. A command window should appear showing the progress of the back. Check the backup location specified in the .sql file to see whether backup file has been created.



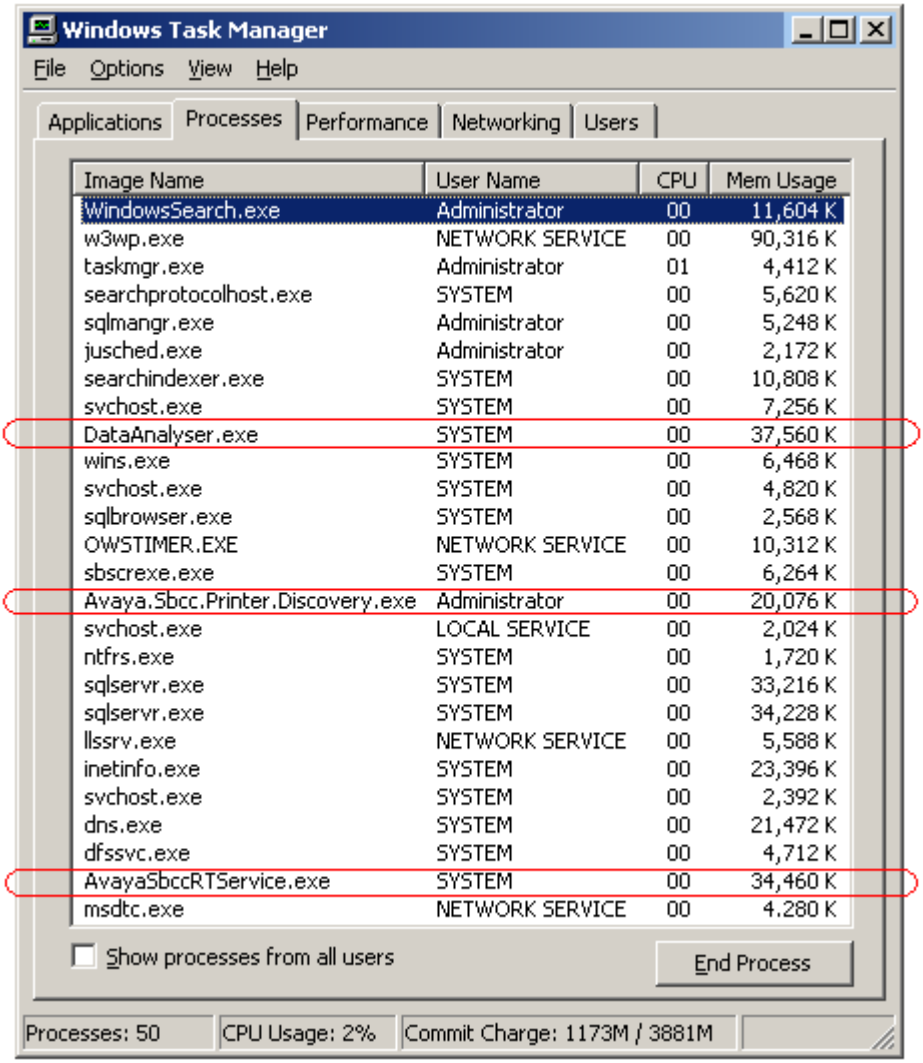
4.6 Windows Task Scheduler

Reports scheduled by IP Office Customer Call Reporter supervisors appear both in the supervisors Report Scheduler tab and in the Windows Scheduled Tasks windows on the IP Office Customer Call Reporter server PC.

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.

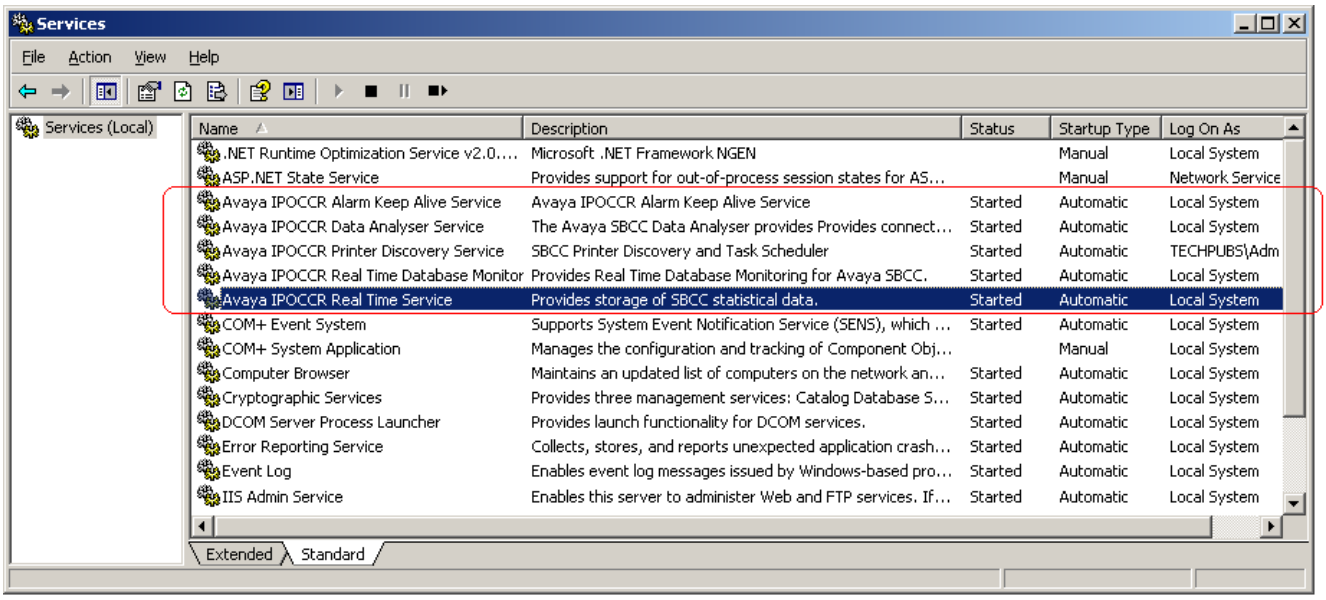
4.7 Windows Task Manager

The screenshot below shows the IP Office Customer Call Reporter components that appear in the Windows Task Manager on the IP Office Customer Call Reporter server PC. If it is felt necessary to stop and restart any of these that should be done by restarting the appropriate Windows Services 66.



4.8 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. It is recommended that you use the web client to restart services when such an action is required. Refer to the IP Office Customer Call Reporter user guide.



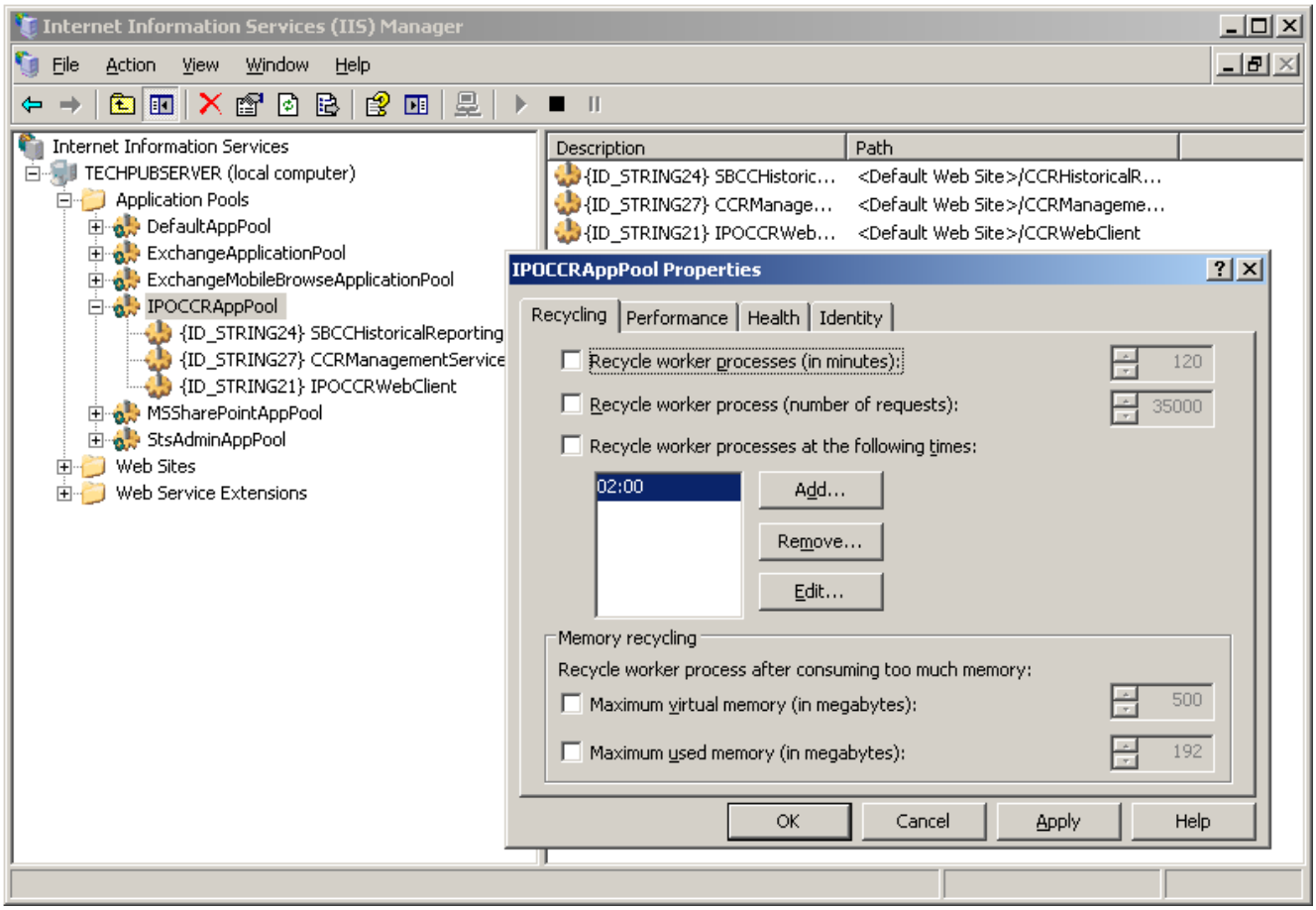
- **Avaya IP Office Customer Call Reporter Real Time Service**
  Restarting this service will reset all view statistics for all agents and supervisors.

4.9 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://www.microsoft.com/technet/prodtechnol/WindowsServer2003/Library/IIS/56bdf977-14f8-4867-9c51-34c346d48b04.mspx?mfr=true.

4.10 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 5.
The CCR Database

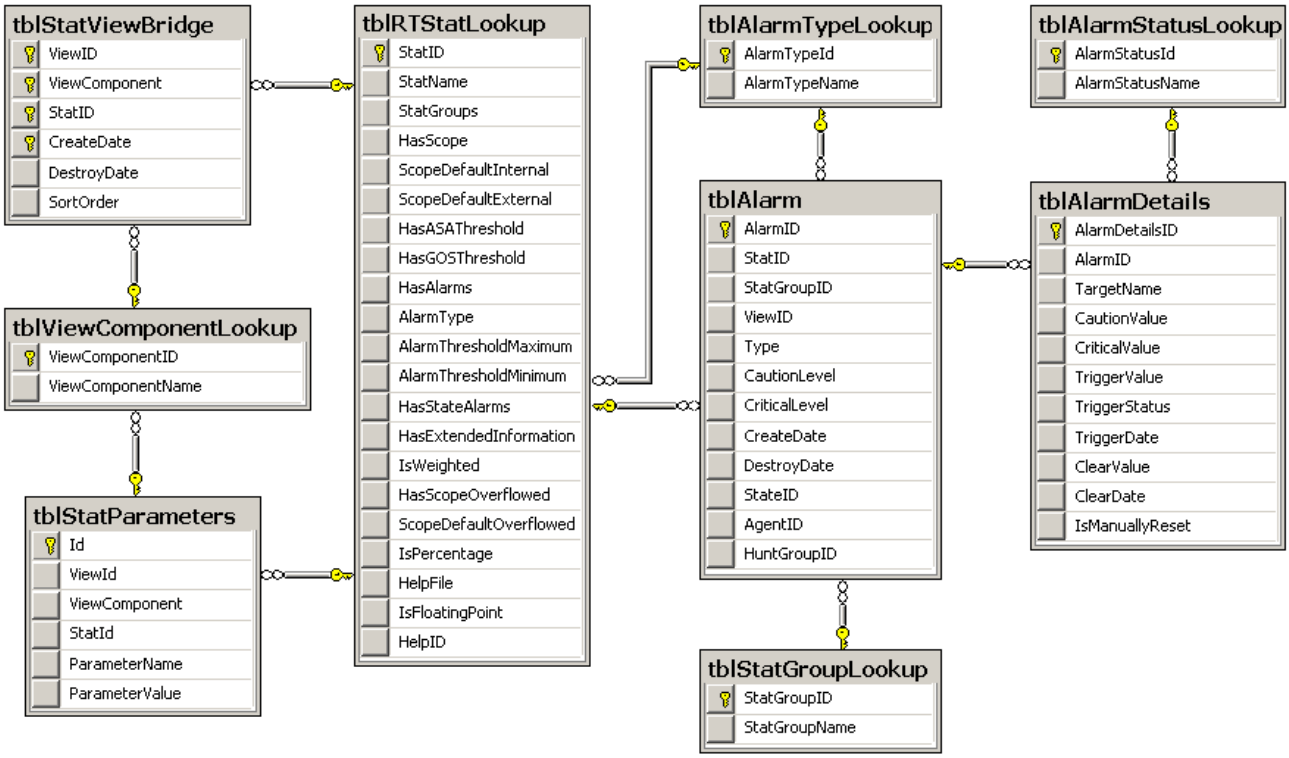
5. The CCR Database

- **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 lose of data or other problems resulting from direct database access.

The tables and fields shown here and their relationships are only examples. The database is liable to change and differ between different IP Office Customer Call Reporter versions.

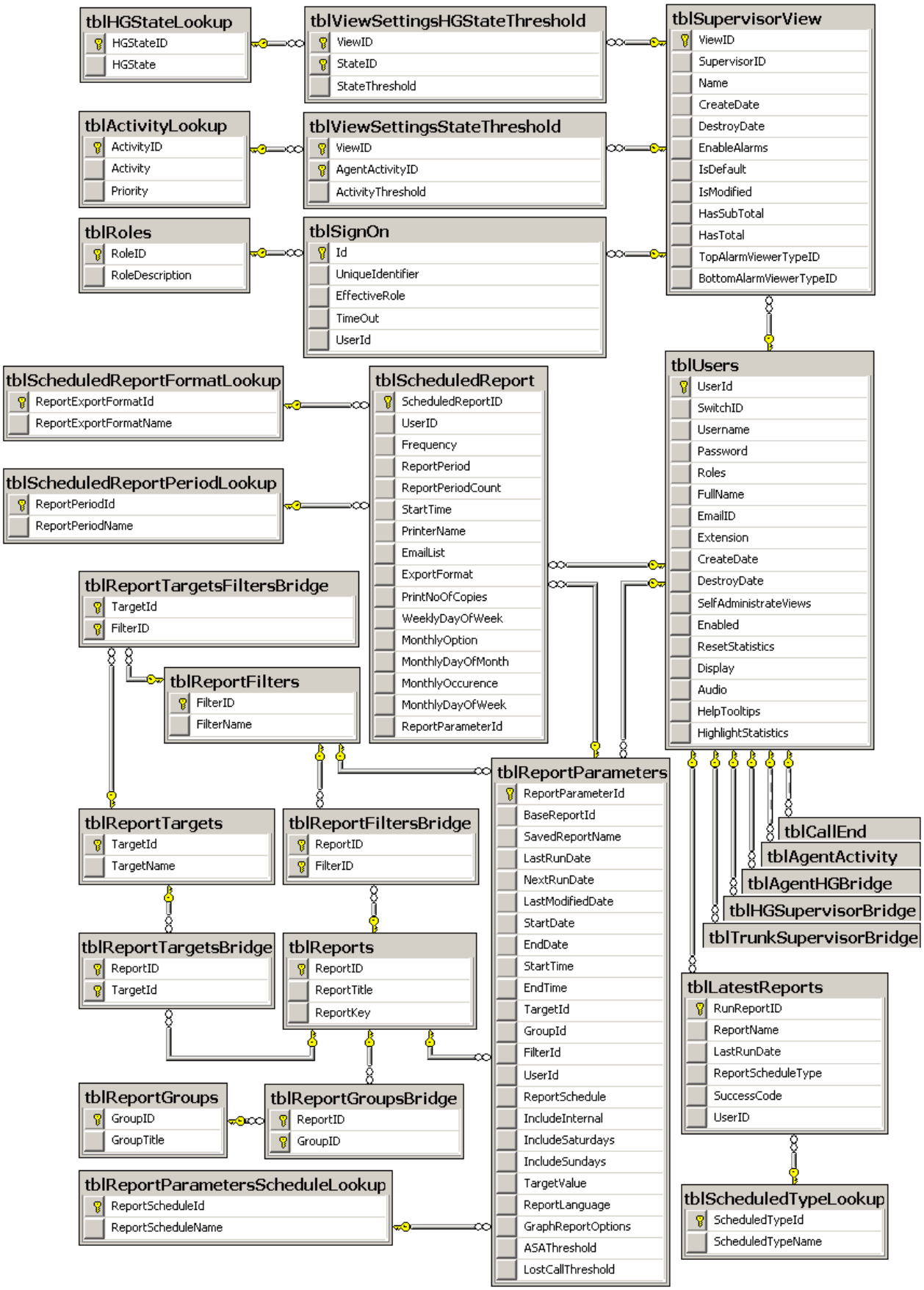
5.1 Database Part 1

- **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 lose of data or other problems resulting from direct database access.



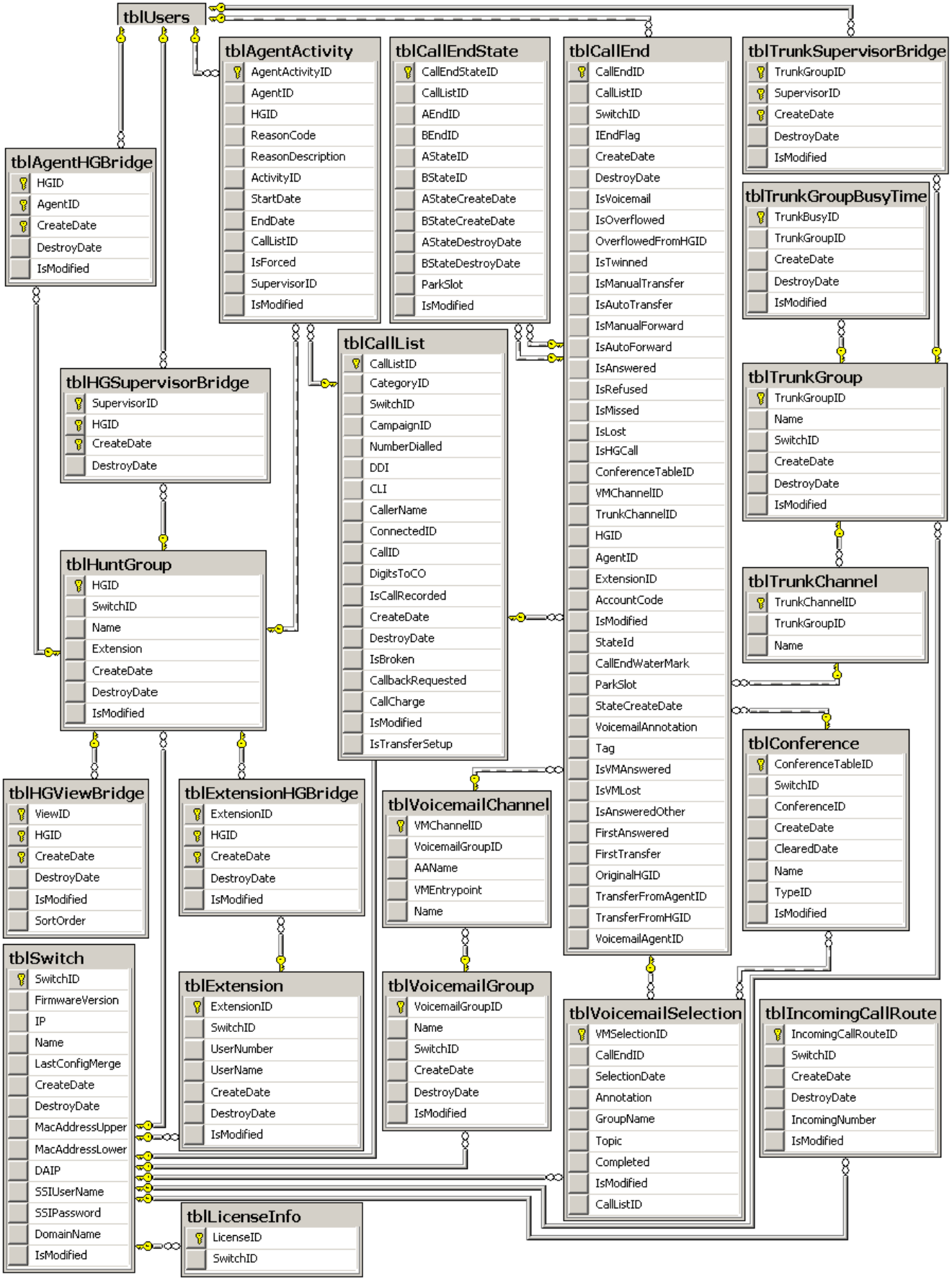
5.2 Database Part 2

- **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 lose of data or other problems resulting from direct database access.



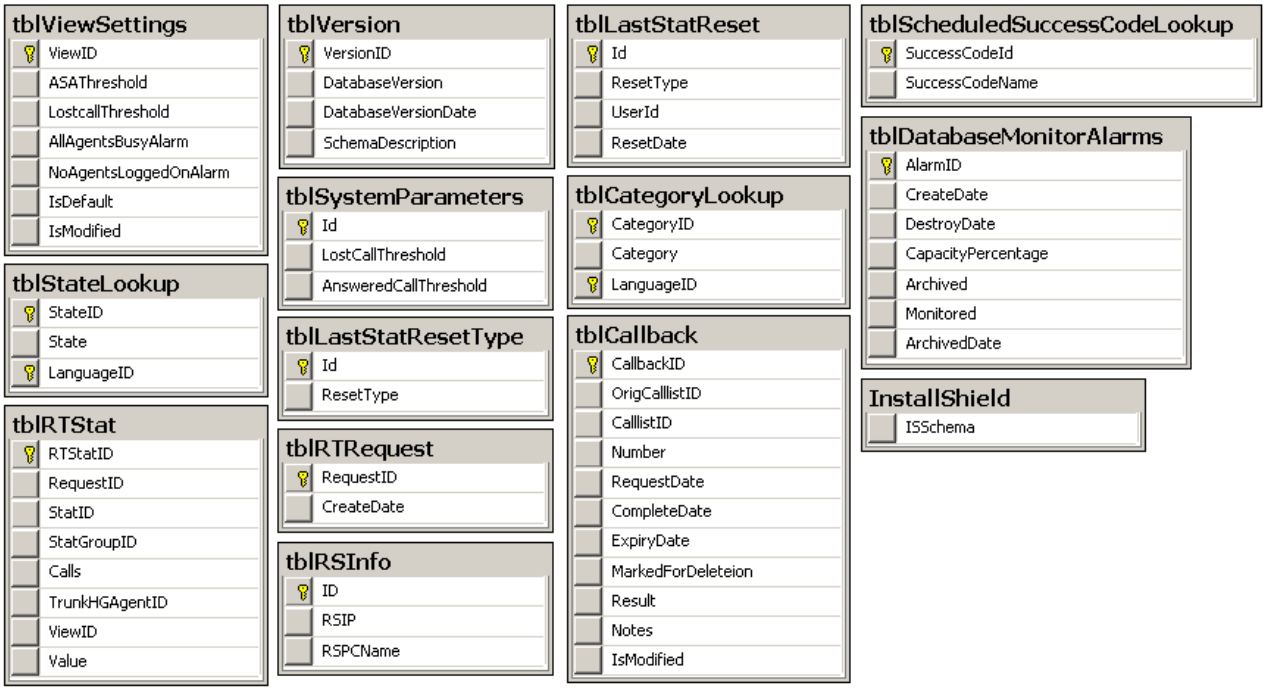
5.3 Database Part 3

- **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 lose of data or other problems resulting from direct database access.



5.4 Database Part 4

- **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 lose of data or other problems resulting from direct database access.



Index

C

Client 7
Client application
    Part 7
Client Provider 7
Contains 7
CRS login 7
Customer Service Representative toolbar 7

D

Data Analyser 7

I

IP Office 7

O

Overview 34

Performance figures and data quoted in this document are typical, and must be specifically confirmed in writing by Avaya before they become applicable to any particular order or contract. The company reserves the right to make alterations or amendments to the detailed specifications at its discretion. The publication of information in this document does not imply freedom from patent or other protective rights of Avaya or others.

Intellectual property related to this product (including trademarks) and registered to Lucent Technologies have been transferred or licensed to Avaya.

All trademarks identified by the ® or ™ are registered trademarks or trademarks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners.

This document contains proprietary information of Avaya and is not to be disclosed or used except in accordance with applicable agreements.

Any comments or suggestions regarding this document should be sent to "wgctechpubs@avaya.com".

© 2009 Avaya Inc. All rights reserved.
Avaya
Unit 1, Sterling Court
15 - 21 Mundells
Welwyn Garden City
Hertfordshire
AL7 1LZ
England.

Tel: +44 (0) 1707 392200
Fax: +44 (0) 1707 376933

Web: http://marketingtools.avaya.com/knowledgebase