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Customer Site Requirements for inContact Workforce Optimization 16.3

Hybrid

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Introduction

Audience

This document is written for customers and prospective customers interested in using inContact WFOin a Hybrid deployment. Readers should have a basic level of familiarity with general networking and their organization's LAN, their organization's PBX, the business rules in their contact center(s), usage of a PC and its peripherals, and the Windows operating system.

Goals

The goal of this document is to provide knowledge and reference information necessary to support deployment and configuration of an inContact WFO system in an organization's IT environment.

In a Hybrid deployment of inContact WFO, many components and modules reside in the inContact Cloud. However, recording and certain other services reside on a server or servers at your location(s).

> **Note:**
> This document is NOT intended as a specific system or network design document, nor is it designed to educate the reader on contact center concepts or best practices.

Assumptions

This document assumes the reader has access to an inContact WFO Sales Engineer, Project Manager, or other resource to assist in applying this information to the reader's environment.

Need-to-Knows

inContact WFO is a robust platform with multiple modules that can be used alone or in any combination with each other. These modules include:

- inContact Call Recording
- inContact Screen Recording
- inContact Quality Management
- inContact Workforce Management v2
- inContact Desktop Analytics

This document covers requirements for inContact WFO systems that include one or more of the following: inContact Call Recording, inContact Screen Recording, inContact Quality Management, inContact WFMv2 and inContact Desktop Analytics.

Depending on the PBX integration, there may also be additional hardware, software, and licensing requirements for call recording. Consult your inContact WFO representative for customer integration guides and inContact WFO license information.

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Server Requirements

> **Warning:**
> The specific hardware and system software required for your implementation is determined by inContact WFO Sales Engineering during the discovery and system design process. No system hardware or software should be purchased or requisitioned until the final system design document is complete.

Hardware Requirements

An on-premises server (known as the PREMISES Server) is required. This server must have a public-facing IP address. Hardware requirements may also be affected by the specific inContact WFO components used, the number of agents being recorded, and the design of your telephony network.

Generally speaking, servers can be either physical or virtual. Some recording integrations require physical servers; see the Overview topic or customer guide for your integration.

ADDITIONAL CONSIDERATIONS

The following general guidelines apply to all inContact WFO systems:

- 32-bit servers are no longer supported due to the requirements of supported operating systems, with one exception (see Software Requirements).
- Call recording, screen recording, and quality management can run on the same server. Depending on your contact center and IT architecture, multiple servers may be recommended.
- inContact Speech Analytics requires a separate, dedicated server. Depending on how your organization plans to use inContact Speech Analytics, multiple dedicated servers may be recommended.
- inContact WFO supports virtual server(s) for most modules. Some recording integrations require a physical server.
- inContact recommends that servers have a minimum of 6 GB of RAM and a quad-core processor. Any server that hosts **RabbitMQ** must have at least 6 GB of RAM.

Software Requirements

inContact WFO has been tested with and supports the following software environment for system servers:

- **Operating System** — Windows Server 2012 R2. Integration with Avaya using IP Office requires a recording server running a 32-bit Windows operating system. See the *Customer Guide to Avaya IP Office Integ-*

rations for details.

- **Protocols** — IPv4

Prerequisites

The inContact WFO deployment team will install and configure the software on the PREMISES Server. In addition to the inContact WFO software, they will also install the following prerequisites:

- .NET Framework v3.5, v4.0, v4.5.1, v4.5.2, and v4.6.1
- Microsoft Visual C++ Runtime v8.0.50727.4053 (for more detail on this software, see knowledgebase article 973544 on Microsoft's support site)
- Microsoft PowerShell v2.0 or greater (for more detail on this software, see knowledgebase article 968929 on Microsoft's support site)
- Windows Installer v4.5 or greater
- Microsoft Report Viewer Redistributable 2008, 2010, and 2012 (for more detail on this software, see knowledgebase article 971119 on Microsoft's support site)

Licensing

inContact WFO Sales Engineering explains licensing requirements during the sales process. If SSL is used in the network, a certificate file must be purchased from a third-party vendor (such as VeriSign). SSL is recommended for Hybrid systems.

PC Requirements

The following requirements apply to workstations using the inContact WFO Web Portal as well as those running inContact Screen Recording or inContact Desktop Analytics client applications.

Software Requirements

For complete information on supported client operating systems and browsers, see Supported Environments.

inContact WFO offers two options for recording search and playback. The **Call List** and **Web Player** (also known as the Silverlight Player) are supported in the following browsers: Internet Explorer and Firefox only. The **Interactions List** and **HTML5 Interaction Player** are supported in the following browsers: Chrome and Firefox only.

> **Note:**
> The HTML5 **Recorded Interactions** list does not yet support live monitoring or speed-adjusted playback. It also does not support manual blackouts.

Users who play call recordings, screen recordings, or both, and who use the Silverlight Player, also need:

- Microsoft Silverlight browser plug-in v5.0.61118.0 or higher

If your deployment includes inContact Desktop Analytics, a proprietary client application must be installed on each PC used by recorded agents. This PC must also run:

- .NET Framework v4.5.2

If your deployment includes screen recording, a proprietary client application must be installed on each PC to be recorded. This PC must also run:

- .NET Framework v4.0

Hardware Requirements

The minimum workstation specifications for users who simply view information in a web portal are:

- 2.0 GHz Processor
- 1 GB RAM
- 50 MB hard drive space
- 1280 X 800 (minimum screen resolution at 16-bit color depth)

Users who monitor calls, screen activity, or both; who perform quality evaluations; or who in general use the web portal more heavily will normally benefit from more powerful PCs. For these users, inContact recommends:

- 3Ghz or 1.6Ghz dual core
- 2 GB RAM
- 50 MB hard drive space
- 1280 X 1024 or higher screen resolution at 16-bit color depth

Virtual Desktop Infrastructure (VDI) Support

inContact WFO supports the following virtual desktop systems:

- Microsoft Terminal Services
- Citrix XenDesktop
- VMWare View

inContact WFO does not support Citrix XenApp in application streaming mode for any applications. However, if the endpoint launching the XenApp client is a Windows PC, the inContact Screen Recording client will capture the streamed application windows *if* the client is running on the Windows PC itself.

> **Note:**
> VDI does not affect call recording.

MAJOR CONSIDERATIONS

Each application instance in use will consume resources on the customer's VDI. The following table provides some general guidelines regarding resource usage for each inContact WFO application or module; however, inContact strongly recommends testing needed resources by deploying desired applications and modules to a limited number of users and evaluating resource utilization in your specific environment.

inContact WFO Module	Estimated Resource Usage
inContact Screen Recording Client	RAM: 50-250MB, CPU: 1-5% per instance (highly dependent on screen resolution and activity)
Web Player (browser-based Silverlight application)	RAM: 50-500MB, CPU: 1-10% per instance (highly dependent on number of records returned by user queries and size of audio/video files being played)

inContact Desktop Analytics Client	Resource usage can vary greatly depending on the type and number of applications being monitored, which scripts are being used, and so on. Requires testing in customer's environment to determine specifics.

The inContact WFO **Web Player** may play back data recorded in full HD (in other words, at resolutions greater than 1080p) and the size of the recordings may be significant.

Each VDI vendor has specific caveats and limitations regarding performance for media playback, and most have specific considerations for Silverlight-based media players, especially if the endpoint is a thin or zero client. Consult your vendor for specific information regarding your deployed products.

> **Note:**
>
> Microsoft offers a publicly-available Silverlight media player demo application you can use for initial performance testing. Visit Microsoft's iis.net website and search for IIS Smooth Streaming.

Environmental Requirements

inContact WFO cloud servers have IP addresses in the following range: 207.166.100.0/23.

Port Information

To minimize the number of ports that must be opened in your firewall, inContact WFO uses a service called **Connection Pooling** on the PREMISES server. This service requires:

Port	Transport	Description
2010	HTTP	Open on server and firewall for communication between the PREMISES server and the cloud

In addition, the following ports must be open at your location to allow for proper communication between inContact WFO components:

Port	Transport	Description
4510	TCP	Connections from Silverlight client players
2020	HTTP	inContact WFO Web Portal connections using the HTML5 Interaction Player
5650	HTTP	Token requests for the HTML5 Interaction Player
443	HTTPS	HTTP services on the client PCs for inContact WFO Web Portal
943	TCP	Silverlight cross-domain policy listener
5638	TCP	Logging communications between client PCs and the PREMISES server
5672	TCP	Used by the messaging interface for various inContact WFO services

If you use inContact Screen Recording, you will additionally need:

Port	Transport	Description
5633	TCP	Open on client PCs for communication between the PC and the PREMISES server

If you use inContact Desktop Analytics, you will additionally need:

Port	Transport	Description
5634	TCP	Open on client PCs for communication between the PC and the PREMISES server

64-Bit Compatibility

inContact WFO uses or integrates with a variety of third-party applications. This software is independently certified by any respective manufacturers in regard to 64-bit compatibility. Most manufacturers have minimum version requirements for compatibility.

To assist you in planning your implementation, inContact has compiled the following matrix to list known compatibility for third-party systems with inContact WFO running on 64-bit Windows Server 2008 R2 or Windows Server 2012 R2. Only the integrations listed below have specific compatibility requirements. Those not listed are considered generally compatible at this time.

Vendor	Integration	Software	Compatibility
AudioCodes	DP/DT/LD/NGX	SmartWORKS	Requires version 5.4 or higher
AudioCodes	DP/DT/LD/NGX	SmartWORKS	Windows 2012 requires version 5.9 or higher
Avaya	TSAPI	TSAPI Client 6.2	Windows 2008 requires AES version 5.2 or later. Windows 2012 requires AES/TSAPI Client 6.3.3 or later.
CACE	All VOIP Integrations	WinPcap library	Requires version 4.1.2 or later

Cisco	TAPI-BiB	TAPI Service Provider	Windows 2012 requires Cisco TSP Client v10.0 or later.
Cisco	JTAPI-BiB	JTAPI Service Provider	Not supported with Windows 2012.
ShoreTel	TAPI-Wav and TAPI-VOIP	Remote Server Software	Windows 2008 requires ShoreTel version 11 or later. Windows 2012 R2 requires v14.2.19.42.8801.0 or later.

Antivirus Software

Antivirus exclusions should be configured in any system where antivirus scanning is installed. The guidelines below are provided to assist with ensuring the reliability and performance of your inContact WFO system, while still providing for a secure environment. A lack of exclusions can cause system performance issues and possibly contribute to service outages.

These guidelines apply to both memory resident and on-demand scanning.

GENERAL CONSIDERATIONS

These exclusion guidelines are product-specific. For applications not specifically listed, it is often necessary to determine exclusions on a case-by-case basis. This section provides guidance in this area.

Files should typically be excluded based on the following criteria:

- **Locked Files** — The files are permanently locked open by a legitimate server process. Examples of these are databases such as DHCP and SQL Server, as well as files such as the Windows Pagefile.
- **Large Files** — The files are manipulated often by a legitimate server process and are typically large in size. Examples of these are copying CD/DVD images (.iso) and Virtual Machine Files (.vhd). In addition, operations may include offline maintenance on Virtual Machine Files and Exchange Server databases.
- **Temporary Files** — A large number of temporary files are written to disk by a legitimate server process.

EXCLUSION GUIDELINES

The table below lists the recommended exclusions for each inContact WFO service or application. Any paths or ports shown in this document are the installation defaults only. Actual paths or ports may vary depending on configuration options set during installation.

Service/Application	Process	File, Extension, or TCP/IP Port	Default Folder
Logger	cc_log-gerservice.exe	*.log	C:\Program Files\CallCopy\Logs\
CTI Core	cc_cticore.exe	*.cca, *.wav, *.vox, *.vox8, *.xml	C:\default_rec
Transcoder	cc_Transcoder.exe	*.cca, *.vid, *.wav, *.vox, *.vox8, *.csa, *.ccp	C:\temp\Transcoder-temp
inContact Screen Recording	cc_screen-capserver.exe	*.vid	C:\temp\

COMMON FILE TYPES

Most antivirus products attempt to remove or quarantine file types that they cannot identify. The table below lists many of the common file types associated with inContact WFO.

File Type	Description
.cav	inContact WFO Proprietary combined audio/video format generated only when a file is exported. Requires a special player to view.
.cca	Raw recorded audio that has not yet been transcoded; typically deleted after transcoding and compressed into .wav.
.ccp	Waveform that accompanies playback in the Web Player. Does NOT contain book-marks – those are inserted at time of playback via stored database records. Black-outs are represented in the waveform as flat segments with no audio present.

.csa	inContact WFO stereo audio; lowest file size of the supported audio formats.
.log	Log files where system activities and errors are recorded. Useful in troubleshooting system issues.
.vid	Screen capture data for playback.
.vox	Compressed audio format for playback. Higher quality than .wav, but also larger file size. Primarily a legacy format.
.vox8	Compressed audio format for playback. Higher quality than .wav, but also larger file size. Primarily a legacy format.
.wav	Compressed audio format for playback.
.xml	Used to store call metadata or API responses to clients.