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CUSTOMER SITE REQUIREMENTS FOR UPTIVITY DISCOVER WFO, V5.5.1

February 2015

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Version:	5.5.1
Revision:	February 2015
About inContact:	inContact (NASDAQ: SAAS) is the cloud contact center software leader, helping organizations around the globe create high quality customer experiences with a complete workforce optimization portfolio (WFO). Key portfolio offerings are **inContact Discover WFO** (tightly integrated with the core platform and completely available in the cloud) and **Uptivity Discover WFO** (comprehensive, premise-based WFO that integrates with a wide variety of telephony and contact center solutions). The portfolio also includes the WFO Suite powered by Verint®, ECHO ™ Customer Feedback Survey, inView ™ Performance Dashboard. inContact is the only provider to combine cloud software with an enterprise-class telecommunications network for a complete customer interaction solution. Winner of Frost & Sullivan 2012 North American Cloud Company of the Year in Cloud Contact Center Solutions, inContact has deployed over 1,300 cloud contact center instances. To learn more, visit www.inContact.com.
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Introduction

This document is written for customers and prospective customers interested in using Uptivity Discover WFO. Customers can purchase one or more of these products:

- Uptivity Discover Call Recording

- Uptivity Discover Screen Recording

- Uptivity Discover Quality Management

- Uptivity Clarity WFM

- Uptivity Speech Analytics

- Uptivity Survey

- Uptivity Fusion Desktop Analytics

This document covers Uptivity Clarity WFM, Uptivity Discover, Uptivity Discover On-Demand, and Uptivity Discover Screen Recording.

Uptivity Fusion Desktop Analytics, Uptivity Survey, and Uptivity Speech Analytics have requirements in addition to those listed here.

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

Server Requirements

Hardware Requirements

The system design and specific hardware required for your implementation will be determined by Uptivity Discover Sales Engineering during the sales process. These guidelines apply:

- Uptivity Discover requires at least one server for call recording and quality management.

- Uptivity Clarity WFM and Uptivity Speech Analytics each require separate dedicated servers.

- The server(s) can be either physical or virtual depending on the recording integration.

Hardware requirements are affected by the specific Uptivity Discover WFO components used, the number of concurrent users in the system, the average call volume and duration, and the length of time you wish to retain recordings.

Software Requirements

The entire Uptivity Discover WFO Suite has been tested with and supports the following software environment for system servers:

- **Operating System**: Windows Server 2008/2008 R2/2012 R2 (Standard and Datacenter editions). Uptivity Speech Analytics requires Windows Server 2008.

- **Database**: Microsoft SQL Server 2008 with SQL Server Reporting Services (Standard, Datacenter, Enterprise, and Express with Advanced Services editions). R2 requires SP1. R2 support depends on the PBX integration. Microsoft SQL Server 2012 SP1 (Enterprise, Standard, and Express editions).

  Uptivity Clarity WFM and Uptivity Speech Analytics are not supported on SQL Express.

  Note: the tested and supported database upgrade path is from Uptivity Software Suite v5.3 or higher on Microsoft SQL Server 2008 to SQL Server 2012 SP1. Upgrade of older SQL and/or Discover version databases has not been tested.

- **Web Server**: Microsoft Internet Information Services v7.0, 7.5, with ASP.NET 4.0 Extensions; v8.5 with ASP.NET 4.5 Extensions.

- **Protocols**: IPv4

Prerequisites

Uptivity Discover WFO requires a number of prerequisites to operate successfully. The following prerequisites will be installed by the Uptivity Discover Installation team:

- .NET Framework v4.0

- 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

The Uptivity Discover Sales Engineering team explains licensing requirements during the sales process. If SSL is used in the network, a certificate file must be purchased from a vendor (for example, VeriSign).

PC Requirements

The following requirements apply to workstations using Uptivity Discover and/or Clarity WFM Web Portals, as well as those running the Discover On-Demand and Screen Recording clients and the Uptivity Fusion Desktop Analytics desktop display.

Software Requirements

Uptivity Discover WFO has been tested with and is supported for:

- **Operating Systems:** Windows XP/Vista/7/Windows Server 2008/Windows Server 2012

- **Web Browsers:** Internet Explorer v8-v9, Firefox ESR 17 and ESR 24, Google Chrome v38

Users who will play call and/or screen recordings also need:

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

If your deployment includes screen recording, each PC to be recorded needs:

- .NET Framework v4.0

Hardware Requirements

The minimum workstation specifications for users who access web portals to simply view information in either the Clarity or Discover Web Portals 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 live monitor call and/or screen, perform quality evaluations, work with forecasts in Clarity WFM, and in general use the Web Portals 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)

Uptivity Discover WFO supports the following virtual desktop systems:

- Microsoft Terminal Services

- Citrix XenDesktop

- VMWare View

Discover 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 screen capture client will capture the streamed application windows if the screen capture 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 Discover application/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.

Uptivity Discover WFO Module	Estimated Resource Usage
Uptivity Discover Screen Recording Client	RAM: 50-250MB, CPU: 1-5% per instance (this highly depends on screen resolution and activity)
Discover On-Demand Client	RAM: 50MB, CPU: 0-2% per instance
Discover Web Player (browser-based Silverlight application)	RAM: 50-500MB, CPU: 1-10% per instance (this highly depends on the number of records returned by user queries and the size of the audio/video files being played)
Uptivity Fusion Desktop Analytics Client	Resource usage can vary greatly depending on the type/number of applications being monitored, which scripts are being used, and so on. Requires testing in customer's environment to determine specifics.

The Discover Web Player is a full audio/video media player built using Microsoft Silverlight. The application 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 with specific considerations for Silverlight-based media players, especially if the endpoint is a thin/zero client. Consult your vendor for specific information regarding your deployed products.

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

64-Bit Compatibility

Uptivity Discover 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 Uptivity Discover 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	In MS 2008 environments requires version 5.4 or higher
AudioCodes	DP/DT/LD/NGX	SmartWORKS	In MS 2012 environments requires version 5.9 or higher
Avaya	TSAPI	TSAPI Client 6.2	In MS 2008 environments requires AES version 5.2 or higher. MS 2012 environments require AES/TSAPI Client 6.3.3.
CACE	All VOIP Integrations	WinPcap library	In MS 2008/2012 environments requires version 4.1.2 or higher
Cisco	TAPI-BiB	TAPI Service Provider	In MS 2008 environments requires UCM version 8.5 or higher and the 64-bit version of the Discover Core. MS 2012 environments require Cisco TAPI version 10.0 or higher.
Cisco	JTAPI-BiB	JTAPI Service Provider	In MS 2012 environments, Cisco JTAPI is not supported.
ShoreTel	TAPI-Wav and TAPI-VOIP	Remote Server Software	In MS 2008 environments requires ShoreTel version 11 or higher. TAPI not supported in MS 2012 environments

Server and Firewall Ports

The following table lists the ports used by various services in Uptivity Discover WFO. Some ports are used by more than one service (for example, any service that communicates with SQL uses TCP port 1433). Depending on the system design created by your Uptivity Discover Sales Engineer, these ports may need to be opened on Discover server(s) and network firewalls to allow communication between Discover modules and services. Talk to your Uptivity Discover Installation team if you need to make adjustments due to port conflicts.

Process	Port	Transport	Direction	Description
API Server	5620	TCP	Inbound	Listener for internal (CTI Core, Web Media Server, On-Demand, etc.) and third-party clients (default)
	5620	TCP	Inbound	Listener for Event Interface including internal (CTI Core, Web Media Server, On-Demand, etc.) and third-party clients (default)
	2012	TCP	Inbound	Listener HTTP API Interface
	1433	TCP	Outbound	SQL Connection
Archiver	445	TCP	Outbound	CIFS file operations
	1433	TCP	Outbound	SQL Connection
CTI Core	5685	TCP	Inbound	Inter-core communication
	5685	TCP	Outbound	Inter-core communication
	445	TCP	Outbound	CIFS file operations
	5630	TCP	Outbound	Communication/Streaming to Web Media Server
	5633	TCP	Outbound	Control messages to Screen Capture Server
	6620	TCP	Inbound	API control message listener
	1433	TCP	Outbound	SQL Connection
	2013	HTTP	Inbound	Info Broker Listen Port
	xxx	?	?	*Integration Specific port usage (detailed in corresponding integration guide)*

Comet Daemon	6505	TCP	Inbound	Listens for service status from client loaders and Web Server
	6505	TCP	Outbound	Client loader status messages to master
	1433	TCP	Outbound	SQL Connection
Info Broker	50817	TCP	Inbound	Used to communicate with Cores, Screen Capture Server
Logger Service	5638	TCP	Inbound	Log message listener
	162	UDP	Outbound	SNMP Management messages
	25	TCP	Outbound	SMTP messages
	1433	TCP	Outbound	SQL Connection
Service Manager	1024	TCP	Inbound	Listens for authorization from the Web Portal
Transcoder	445	TCP	Outbound	CIFS file operations
	1433	TCP	Outbound	SQL Connection
Web Media Service	5630	TCP	Inbound	Control messages and a/v streams from CTI Cores
	4510	TCP	Inbound	Connections from Silverlight client players
	1433	TCP	Outbound	SQL Connection
	943	TCP	Inbound	Silverlight cross domain policy listener
	2015	TCP	Inbound	HTTP Listener
	445	TCP	Outbound	CIFS file operations
Speech Analytics	445	TCP	Outbound	CIFS file operations
	1433	TCP	Outbound	SQL Connection
Fusion Script Server	5634	TCP	Inbound	Listens for connections from Fusion clients
Discover On-Demand	2007	TCP	Inbound	Listener for connections from On-Demand Clients
	5620	TCP	Outbound	Connection to API Service for recording control and event messages
	1433	TCP	Outbound	SQL Connection

Uptivity Discover Screen Recording	5633	TCP	Inbound	Listener for SC Client connections and SC to CTI Core communication
	445	TCP	Outbound	CIFS file operations
	1433	TCP	Outbound	SQL Connection
	2014	TCP	Inbound	HTTP Listener
Web Portal	80	TCP	Inbound	HTTP services for Web Portal (default)
Uptivity Survey	5060	UDP/TCP	Inbound	SIP trunk listener from customer PBX. **Note:** the Discover Core module also uses port 5060. If Survey and Core are on the same server, Survey must be configured to use a different port.

PC and Firewall Ports

The following table lists the ports used by client applications in Uptivity Discover WFO. Depending on the applications used in your implementation, these ports may need to be opened on user workstations and network firewalls to allow communication between Discover server(s) and end users. Talk to your Uptivity Discover Installation team if you need to make adjustments due to port conflicts.

Process	Port	Transport	Direction	Description
CometDaemon & Service Manager	6505	TCP	Inbound & Outbound	Allows administrator access to Service Manager from client systems and receives messages from CometDaemon.
Uptivity Fusion Client	5620	TCP	Outbound	Fusion client API connection for sending function calls
Discover On-Demand Client	2007	TCP	Outbound	Connection to On-Demand Server for recording control and event status messages
Discover Screen Recording Client	5633	TCP	Outbound	Connection to Screen Cap Server for video streaming and status messages

| Web Player | 4510 | TCP | Outbound | Connection to Web Media Server for playback |
| | 943 | TCP | Outbound | Connection to Web Media Server for policy file (Silverlight) |

Anti-Virus Software

Anti-virus exclusions should be configured in any system where anti-virus scanning is installed. The guidelines below are provided to assist with ensuring the reliability and performance of your Uptivity Discover 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 Uptivity Discover 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 Service	cc_loggerservice.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
Analytics	cc_analytics.exe	*.wav, *.idx	
Screen Capture	cc_screencapserver.exe	*.vid	C:\temp\

Common File Types

Most anti-virus products attempt to remove or quarantine file types that they cannot identify. The table below lists many of the common file types associated with Uptivity Discover WFO.

File Type	Description
.cav	CallCopy proprietary combined audio/video format generated only when a file is exported. Requires a special player to view.
.cca	CallCopy raw audio pre-transcode, typically deleted after transcoding and compressed into .wav.
.ccp	Waveform that accompanies playback in the web player. Does NOT contain bookmarks – those are inserted at time of playback via stored database records. Blackouts are represented in the waveform as flat segments with no audio present.
.csa	CallCopy stereo audio, lowest file size of the supported audio formats.
.idx	**Uptivity Speech Analytics only**: phonetic index of the recorded call created and used by the analytics engine. This is an Aurix proprietary format.
.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. Mostly a legacy format now.
.vox8	Compressed audio format for playback. Higher quality than .wav, but also larger file size. Mostly a legacy format now.
.wav	Compressed audio format for playback.
.xml	Used to store call metadata or API responses to clients.

Document Revision History

Revision	Change Description	Effective Date
0	Initial release for this version	2015-02-13