NICE | UPTIVITY
Agile WFO for SMB

Customer Site Requirements 17.3

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Introduction

Audience

This document is written for customers and prospective customers interested in using NICE Uptivity. Readers should have a basic level of familiarity with general networking and their organization's LAN, their 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 install and maintain an Uptivity system in an organization's IT environment.

> **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 NICE Uptivity Sales Engineer, Project Manager, or other resource to assist in applying this information to the reader's environment.

Need-to-Knows

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

- NICE Uptivity Call Recording
- NICE Uptivity Screen Recording
- NICE Uptivity Quality Management
- NICE Uptivity Speech Analytics
- NICE Uptivity Survey
- NICE Uptivity Desktop Analytics
- NICE Uptivity Performance Management

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

Server Requirements

Warning:

The specific hardware and system software required for your implementation is determined by Uptivity 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

Hardware requirements are affected by the specific Uptivity components used, the number of concurrent users in the system, the number of agents being recorded, the design of your telephony network, the average call volume and duration, and the length of time you wish to retain recordings.

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

ADDITIONAL CONSIDERATIONS

The following general guidelines apply to all Uptivity systems:

- 32-bit servers are not supported due to the requirements of supported operating systems.
- 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.
- NICE Uptivity Speech Analytics requires a separate, dedicated server.
- Uptivity supports virtual server(s) for most modules. Some recording integrations require a physical server.
- Servers should 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

The following software environments have been tested with and are supported for system servers:

- **Operating System** – Windows Server 2012 / 2012 R2 / 2016. 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 Integrations* for details.

- **Database** – Microsoft SQL Server 2012 SP1 (Enterprise, Standard, and Express editions). Microsoft SQL Server 2014 (Express, Enterprise and Standard editions). Microsoft SQL 2016 (Express, Enterprise and Standard editions). NICE Uptivity Speech Analytics does not require installation of a database on its dedicated server.

  > The Uptivity database requires an SQL user account. An existing account can be used or an account can be created during the installation process. The account needs the db_owner/dbcreator and public roles. These roles are the same if the system topology places the Uptivity database on a separate server or when the database is an instance in an SQL cluster.

- **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 requires a number of prerequisites to operate successfully. These prerequisites are installed by the Uptivity installation team, and include:

- .NET Framework v4.6.2. and v4.7.
- Several Microsoft Visual C++ Runtime components
- Microsoft PowerShell v2.0 or greater (for more detail on this software, see knowledge base 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

Uptivity 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). If your organization plans to use the HTML5 Interaction Player, your system administrator must bind the SSL certificate to the appropriate port on the Uptivity server. The default port is 5650. Check with your Uptivity team to verify the port used in your deployment.

NICE Uptivity Speech Analytics Requirements

This covers the hardware, operating system, and environmental requirements for systems that include NICE Uptivity Speech Analytics.

Hardware

Hardware requirements vary depending on the number of calls processed and data storage and retention needs. Hardware specifications are determined by the NICE Uptivity Sales Engineering team during the sales process and are based on the projected requirements of your individual implementation. General hardware guidelines include:

- NICE Uptivity Speech Analytics must be installed on its own server, and all resources on this server must be dedicated to the analytics application.
- Virtual servers (VMs) are acceptable; however, speech processing is a CPU-intensive task that may result in sustained periods of high CPU usage. This could affect performance of other VMs on the same physical host.
- The NICE Uptivity Speech Analytics server must be placed on the same LAN as the NICE Uptivity Recording server(s).
- At a minimum, the speech server should have an Intel i7 Quad Core CPU, with an 8 MB L3 cache.
  The server is limited to a maximum of 64 logical cores across all CPUs.
- At minimum, the server should have 8 GB of RAM.
- A single, 1 GB network interface card (NIC) is required.
- The server should be configured with a 200 GB C: drive for operating system and applications, and a D: drive for storing phonetic indexes of processed calls and for housing the WAV files created for analytics until processing is complete. Recommended minimum sizing for this D: drive is 3.98 MB per media hour. The D: drive should be at least 10K; if frequent ad hoc searches are anticipated, solid state drives (SSD) are highly recommended.

Software

NICE Uptivity Speech Analytics requires the following software:

- Windows Server 2012 R2
- NICE Uptivity Speech Analytics services and components, including Nexidia
- Languages require the appropriate language pack and audio models to be installed as part of the installation process

Both Nexidia and the language pack are installed by NICE Uptivity.

License

A NICE Uptivity Speech Analytics license must be purchased in addition to the NICE Uptivity license to enable this feature.

Language Support

The Nexidia Search Grid used by NICE Uptivity Speech Analytics supports a significant number of different languages. These include, but are not limited to:

- North American, UK, and Australian English
- Castilian and Latin American Spanish
- Canadian and European French

NICE Uptivity Speech Analytics is not able to support all of the languages available with Nexidia. For example, the characters used in some languages, such as Hebrew or Russian, could not be used to create tags in NICE Uptivity, even though the Nexidia engine could analyze the calls. If youare interested in using NICE Uptivity Speech Analytics for calls in other languages, check with your NICE Uptivity representative to determine the current level of support.

PC Requirements

The following requirements apply to workstations using the NICE Uptivity Web Portal, the NICE Uptivity Performance Management portal, or both. The requirements also apply to workstations runningNICE Uptivity On-Demand,NICE Uptivity Screen Recording, NICE Uptivity Desktop Analytics, or Performance Management Ticker client applications.

Software Requirements

Uptivity has been tested with and is supported for:

- **Operating Systems** – Windows 7, Windows 8.1, and Windows 10
- **Web Browsers** – Internet Explorer v11, Microsoft Edge 38.14393.0.0 with Microsoft Edge HTML 14.14393, Firefox ESR 45 and ESR 52, and Google Chrome. Browser support varies depending on your chosen playback method and other factors.

Uptivity 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 **Recorded Interactions** list and **HTML5 Interaction Player** are supported in the following browsers: Microsoft Edge, Chrome, and Firefox only.

The Silverlight method must be used for customers with NICE Uptivity Screen Recording, with non-GSM audio codecs, or both. It is also still available for any customers who use only Internet Explorer, who need stereo or speed-adjusted playback (or both), or who need manual blackout capability.

> **Note:**
>
> The HTML5 **Recorded Interactions** list does not yet support speed-adjusted playback or 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 NICE Uptivity 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, v4.6.1, v4.6.2, and v4.7.

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, v4.6.1, v4.6.2, and v4.7.

If your deployment includes NICE Uptivity On-Demand, a proprietary client application must be installed on each PC used agents with record-on-demand capability. This PC must also run:

- .NET Framework v2.0 (this version is not included by default with Windows 8.1 but can be enabled via the Windows Control Panel)

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, NICE 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

Uptivity supports the following virtual desktop systems:

- Microsoft Terminal Services
- Citrix XenDesktop
- VMWare View

Uptivity 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 NICE Uptivity 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 Uptivity application or module; however, NICE 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 Module	Estimated Resource Usage
NICE Uptivity Screen Recording Client	RAM: 50-250MB, CPU: 1-5% per instance (highly dependent on screen resolution and activity)
NICE Uptivity On-Demand Client	RAM: 50MB, CPU: 0-2% per instance
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)
NICE Uptivity 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 Uptivity **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

Server and Firewall Ports

The following table lists the ports used by various services in Uptivity. 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 Sales Engineer, these ports may need to be opened on system server(s) and network firewalls to allow communication between Uptivity modules and services.

For information on enhanced security features in Uptivity, search online help for keyword *security*.

Talk to your Uptivity installation team if you need to make adjustments due to port conflicts.

Process	Port	Transport	Direction	Description
API Server	5620	TCP	Inbound	Listener for connections and commands from internal (CTI Core, Web Media Server, On-Demand, etc.) and third-party clients (default)
	5621	TCP	Inbound	Listener for event notifications (such as call started, call stopped, and so forth) from 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)
RabbitMQ	5672	TCP	Inbound	Communication port for messaging using the RabbitMQ service bus
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
WebSocket Server	5650	TCP	Inbound	HTML5 Interaction Player operations
Speech Analytics	25002	TCP	Outbound	Listens on the NICE Uptivity Speech Analytics server for connections from the Uptivity server
	1433	TCP	Outbound	SQL Connection

Desktop Analytics Script Server	5634	TCP	Inbound	Listens for connections from Desktop Analytics clients
NICE Uptivity 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
Screen Recording	5633	TCP	Inbound	Listener for Screen Recording (SR) Client connections and SR to CTI Core communication
	445	TCP	Outbound	CIFS file operations
	1433	TCP	Outbound	SQL Connection
	2014	TCP	Inbound	HTTP Listener
NICE Uptivity Web Portal	80	TCP	Inbound	HTTP services for NICE Uptivity Web Portal (default). If web-based NICE Uptivity On-Demandis also used, a second port will be required for its Web Portal (for example, 8080).
NICE Uptivity Performance Management	20010/30010	HTTP/HTTPS	Inbound	Required only for the **Ticker** feature. Used by the **Metrics Access** service to process requests from **Ticker** clients for data. These port numbers are configurable but these are the defaults and they are rarely changed.

NICE Uptivity Survey	5060	UDP/TCP	Inbound	SIP trunk listener from customer PBX. The CTI 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. 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 system server(s) and end users. Talk to your Uptivity 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.
NICE Uptivity Desktop Analytics Client	5620	TCP	Outbound	Desktop Analytics client API connection for sending function calls
NICE Uptivity On-Demand Client	2007	TCP	Outbound	Connection to On-Demand Server for recording control and event status messages
NICE Uptivity Screen Recording Client	5633	TCP	Outbound	Connection to Screen Recording 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)

Service Accounts

If your system topology includes multiple servers, a service account is required. This service account is typically a domain account that is used to run services and to share storage locations, facilitating cross-server communications. In practice, the disk locations where recorded voice files, screen files, or both, are to be stored is shared explicitly with the service account and the call recording and playback services are set to run using that account, allowing for read/write access to those locations.

The same service account can be used to run Uptivity reports using (SQL Server Reporting Services) in a multi-server environment. The account must have permission to access the server hosting the database that the SSRS reports use, as well as the server that hosts the SSRS reports (the .rdl files), if different.

The only permissions that the service account needs are those necessary to accomplish these tasks.

64-Bit Compatibility

Uptivity 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.

The following matrix may assist you in planning your implementation. It lists known compatibility for third-party systems with Uptivity 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 Soft-ware	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 Uptivity 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 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
NICE Uptivity Speech Analytics	cc_analytics.exe	*.wav, *.idx	
NICE Uptivity 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 Uptivity.

File Type	Description
.cav	Uptivity 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 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	Uptivity stereo audio; lowest file size of the supported audio formats.
.idx	**NICE 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. 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.