MiCONTACT CENTER BUSINESS AND MiVOICE ANALYTICS

Release 9.2 SP1

System Engineering Guide

Mitel®

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MiCONTACT CENTER BUSINESS AND MIVOICE ANALYTICS

MiContact Center Business and Mitel MiVoice Analytics deliver a contact center and call costing solution that integrates seamlessly with the standard corporate IT department and provides access to information in a familiar format.

The Mitel MiContact Center Business portfolio is composed of MiContact Center Business (available in two licensing bundles: Workgroup and Contact Center), MiVoice Analytics, and IVR Routing. For more information on licensing, see "Licensing" on page 81.

- **Contact Center**
  Contact Center is the licensing level of choice for businesses with more than 100 concurrent agents, who want resiliency, and require more than 10 IVR ports. With Contact Center, the end customer's site configuration controls implementation size. When the customer wants to expand the site capability, the Mitel licensing requirement only considers the number of employees being tracked across the enterprise. All other issues, such as the number of concurrent network users, contact center traffic levels, and Internet connectivity, are addressed by augmenting hardware and Microsoft component licensing.
- **Workgroup**
  Workgroup is geared toward contact centers with fewer than 100 concurrent agents, requiring a maximum of 10 IVR ports, with no need for resiliency. General business and contact center reporting and real-time monitoring, client desktops, and IVR Routing capabilities are included in a single starter pack with available options for customization. Workgroup supports single-node environments only.
- **MiVoice Analytics**
  When MiVoice Analytics includes Call Accounting (supported regions only), it enables businesses to have a true picture of how and where their telecommunication budgets are spent. It tracks phone use, reconciles carrier bills, and bills back departments. If relevant, Call Accounting can also help businesses detect toll fraud. MiVoice Analytics provides reporting on and monitoring of general business extensions and ring groups and includes Traffic Analysis, which enables you to create unlimited reports on T1s and E1s, including call statistics for DTMF receivers, route lists, route plans, routes, and trunks. Business Reporting and Call Accounting are included in the Contact Center and Workgroup bundles but also available as standalone packages.
- **IVR Routing**
  IVR Routing is an all-in-one, scalable voice processing solution that works in conjunction with MiContact Center Business.
- **Messaging and Routing**
  Messaging and Routing is included in Contact Center (maximum 240 ports) and is an add-on option for Workgroup (maximum 120 ports). Messaging and Routing ports cannot be mixed with IVR Routing ports in the same enterprise. For more information regarding the differences between Messaging and Routing and IVR, see "IVR and Messaging and Routing" on page 103.

ABOUT THIS GUIDE

The *Mitel MiContact Center Business and MiVoice Analytics System Engineering Guide* is a reference guide used by planners and implementation specialists to determine the system requirements for MiContact Center Business, as validated by the quality assurance department at Mitel Networks. The following topics are included:

- **MiContact Center Business deployment models**
  Based on the server's role, this section helps you to determine the hardware required for the server based on small, medium, or large deployment models. This section also provides recommendations for collocating server applications and site-based security and multi-tenanting details.
- **System requirements**
  This section specifies the hardware required to run the server and clients based on their role and implementation details. In addition, software applications that are supported and have been verified as compatible with the current release are listed here. Requirements for multi-tenanting and virtual applications are also described in this section.
- **Server virtualization and client virtualization**
  This section includes the supported virtualization software for servers and clients.
- **Performance and scalability**
  This section describes capacity limits, based on verification testing, for all media types, including voice, email, chat, and SMS. IVR Routing scalability and port sizing are also discussed here.
- **Bandwidth and storage requirements**
  This section provides an estimate of how long a server's disk space will last based on the volume of information being collected. It also includes recommendations for disk space, network connectivity requirements, and bandwidth requirements.
- **Additional considerations, including:**
  - Translated language support
  - Synchronized time settings
  - Backing up data
- **Licensing**
  Refer to this section for all licensing details.
- **Statements of support**
  This section contains information on various supported features and applications, as well as a brief discussion on software assurance.

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SEARCHING FOR KEY WORDS AND TOPICS

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PRINTING THIS GUIDE

We have designed this guide as a double-sided flip-chart. Although printing options are specific to each printer, you must select the following printing options to print a double-sided flip-chart guide:

- Double-sided
- Landscape
- Flip pages up (on the long side)

LOCATING THE LATEST VERSION OF OUR GUIDES

The MiContact Center Business and MiVoice Analytics documentation library includes the following guides. The latest version of each guide is available from http://edocs.mitel.com.

- *MiContact Center Business User Guide*: provides information on the basics of contact center management and descriptions for use of all agent and supervisor desktop applications within the MiContact Center Business suite. This guide focuses on voice media.
- *MiVoice Analytics User Guide*: provides information on general business and call costing concepts and describes MiVoice Analytics features and configuration.

- *MiContact Center Business Installation and Administration Guide*: provides instructions for
  - Downloading, installing, registering, and configuring MiContact Center Business on the Enterprise Server and client computers
  - Upgrading from previous versions of MiContact Center Business
  - Installing and configuring MiContact Center Business at remote sites
  - Installing and deploying MiContact Center Business .ova files
  - All IVR Routing configuration
- *MiVoice Analytics Installation Guide*: provides instructions for:
  - Downloading, installing, registering, and setting up MiVoice Analytics on the Enterprise Server and client computers
  - Upgrading from previous versions of MiVoice Analytics
  - Installing and configuring MiVoice Analytics at remote sites
  - Installing and deploying MiVoice Analytics .ova files
- *Multimedia Contact Center Installation and Deployment Guide*: is the primary source of information for contact centers using email, chat, or SMS to communicate with customers. This guide describes how to:
  - Install, configure, and maintain a multimedia contact center
  - Use the desktop tools required to manage a multimedia contact center
  - Handle customer interactions via email, chat, and SMS using Ignite
- *MiContact Center Business and MiVoice Analytics System Engineering Guide*: discusses the following topics:
  - Deployment models based on licensing, contact volume, network requirements, and availability
  - Recommendations for collocating server applications
  - System requirements, including server and client hardware and software requirements, multi-tenanting requirements, and virtual application requirements
  - Server and client virtualization details and best practices
  - Performance and scalability details, including verified capacity results for all media types (alone and blended), IVR Routing scalability, and port sizing recommendations
  - Bandwidth and storage requirements
  - Licensing information
  - Support details for third-party integrations and internal products, such as Multimedia Contact Center and IVR Routing

- *MiContact Center Business - Contact Center Reports Guide*: describes all of the report types available and how to generate, view, and share reports for the Contact Center licensing package.
- *MiContact Center Business - Workgroup Reports Guide*: describes all of the report types available and how to generate, view, and share reports for the Workgroup licensing package.
- *MiVoice Analytics Reports Guide*: describes all of the report types available and how to generate, view, and share reports for MiVoice Analytics.
- *MiContact Center Business Deployment Guide*: discusses the following topics:
  - Contact center basics, with a focus on ACD routing functionality
  - Topologies for scaling
  - ACD resiliency
  - IVR Routing resiliency and redundancy
  - Virtual contact centers
  - Integrating with Microsoft Skype for Business
- *Contact Center Blueprint*: discusses the following topics:
  - MiContact Center Business topologies
  - MiContact Center Business deployment details
  - Cloud and hosted considerations
- *MiContact Center Business Site-Based Security (Multi-tenant) Administration Guide*: describes how to install and configure MiContact Center Business in a multi-tenant deployment.

MiCONTACT CENTER BUSINESS DEPLOYMENT MODELS

The hardware required to run your server successfully depends on the role it will play in your environment. Optionally, refer to the *Mitel MiContact Center Business Deployment Guide* for assistance in determining the number of servers you will require based on the following:

- **Licensing:** The degree to which you are licensed and the number of products for which you are licensed can increase the server specification required.
- **Contact volume:** The number of contacts being handled affects the level of hardware required.
- **Network requirements:** Additional servers may be required based on the network topology.
- **Availability:** Servers may be required in multiple locations or in a cold standby status, depending on the level of resiliency, redundancy, and availability that is needed.

The deployment models listed here can be used within any of the reference topologies, as outlined in the *Contact Center Blueprint*, with the exception of the Work Group topology. The reference topologies in the *Contact Center Blueprint* provide guidance for your overall contact center design. The deployment models described here determine the number of servers required as part of the MiContact Center Business deployment within the *Contact Center Blueprint* reference topology, including Enterprise Servers, and Remote Servers. For additional information on availability, scalability, and resiliency options within the contact center, please see the *Contact Center Blueprint*.

DEPLOYMENT MODELS BASED ON LICENSING

Use the table and figure below to determine your server hardware requirements based on licensing. If, after referring to the *MiContact Center Business Deployment Guide*, you decide to offload services onto remote servers, refer to the Remote Server section of the following table.

Your deployment should fit into one of the server configurations described in this section (Small, Medium, or Large). The order of importance when choosing your server size is:

1. Volume of interactions per hour and active agent count
2. Collocated product mix
3. License level

The volume of interactions per hour, active agent count, and collocated product mix have the highest impact on performance and determine which server specification to deploy. Your license package provides general guidance based on perceived product usage.

The following table shows the supported server sizing based on licensing.

NOTE: We recommend IVR Routing servers are set up remotely for improved performance and emergency call handling.

Table 1: Supported deployment model based on licensing

LICENSE DETAILS		SUPPORTED SERVER SIZING		
Product Bundle	**Product Option**	**Small**	**Medium**	**Large**
MiMiVoice Analytics	N/A	X	X	X
MiContact Center Business - Contact Center license	Without Messaging and Routing or IVR	X	X	X
	With Messaging and Routing or IVR	-	X	X
	With Messaging and Routing or IVR and/or Multimedia Contact Center Agents	-	-	X
MiContact Center Business - Contact Center (standalone)	Standalone Contact Center IVR	X	X	X
	Standalone Multimedia Contact Center Agents	-	-	X
Remote Server	Messaging and Routing or IVR	-	X	X
	Remote data collection without IVR	X	X	X

RECOMMENDATIONS FOR COLLOCATING SERVER APPLICATIONS

This section provides recommendations for which components can be collocated and which should remain standalone.

The following MiContact Center Business functional areas can be implemented on a remote server or remote servers (standalone):

- IVR Routing
- Data Collection
- Updater proxy for Client Component Pack updates

The following databases can be implemented using a remote SQL Server infrastructure:

- CCMData
- CCMStatisticalData

For information on database usage and projected database growth statistics, see "Bandwidth and storage requirements" on page 69.

IVR Routing recommendations

By default IVR Routing is collocated on the Enterprise Server. However, as the number of calls per hour (inbound, outbound, callbacks) increases, we recommend setting up IVR Routing on a remote server or remote servers in order to achieve optimal call processing performance levels.

NOTE: The interactions per hour described in this section can be any mix of inbound, outbound, and callbacks.

Each IVR Routing server, whether collocated with the Enterprise Server or standalone, can handle a minimum of 17000 calls per hour and a maximum of 120 IVR ports.

We recommend IVR Routing be implemented on a remote server, or remote servers, if any of the following conditions apply:

- Handles more than 3000 calls per hour
- Services more than 40 IVR ports (primary and redundant ports combined)
- Exceeds average handling time of 45 seconds per call
- Requires call routing when the Enterprise Server is unavailable

In addition, due to the media streaming requirements of IVR Routing, if bandwidth usage between the IVR Routing server and the MiVoice Business controller is limited and the infrastructure allows for an additional server to be deployed to an area of the network with a higher level of bandwidth available, IVR Routing should be deployed using a remote server, or remote servers, in the alternate network location. For additional information on bandwidth and network requirements for IVR Routing, see "Bandwidth and storage requirements" on page 69.

Note: MiContact Center Business IVR Routing application only supports G.711 and does not support compression from G.729 to G.711. If you only have SIP trunks coming in at G.729, you must front end IVR Routing with a MiVoice Business configured with a loop-back (T1), which takes the G.729 call through the E2T card and back again so that it is converted to G.711.

Data collection recommendations

Data collection from the MiContact Center Business infrastructure is handled by the Enterprise Server.

We recommend data collection be implemented on a remote server, or remote servers, if any of the following conditions apply:

- Parts of the MiContact Center Business infrastructure are in different geographic locations from the Enterprise Server and data collection is required during network outages
- Data collection is required if the Enterprise Server is unavailable

A Network License permits you to install Remote Server software on servers in your enterprise, enabling you to collect and stream ACD/SMDR data from remote sites to the Enterprise Server and perform enterprise-wide monitoring and reporting. You can also buffer data at remote sites if the link to the Enterprise Server goes down, preventing data loss.

NOTE:

- If you are attempting to use one collection point to collect data, we recommend using less than 65 PBXs with a single Remote Server.
- Your Enterprise Server must run an edition of SQL capable of storing data from all sites in your enterprise.

For more information on Remote Servers, see the *MiContact Center Business Installation and Administration Guide*.

Client Component Pack upgrade setting recommendations

MiContact Center Business deployments may consist of agent desktops residing in remote offices. In such scenarios, if the MiContact Center Business Enterprise Server has limited bandwidth available to service these remote offices, you can minimize bandwidth usage when upgrading the MiContact Center Business Enterprise Server by using remote servers as alternate update locations when installing the Client Component Pack.

During the Client Component Pack installation, you can choose an alternate update location and specify the FQDN or IP address of the Remote Server. When an Enterprise Server upgrade is performed, the applications will be downloaded to the Remote Server and the clients will subsequently download from the Remote Server you specified during the installation.

Figure 1 provides an example of a distributed contact center with remote servers handling client updates. In this scenario, Client Component Packs deployed to the remote sites have been configured to download updates from their respective remote server. When an upgrade is applied to the central Kanata site, each remote server downloads the application and service updates once and the clients update from the remote server. This minimizes the amount of bandwidth required to provide updates to remote agent desktops. Agent desktops in the Kanata site continue to be serviced by the central Enterprise Server.

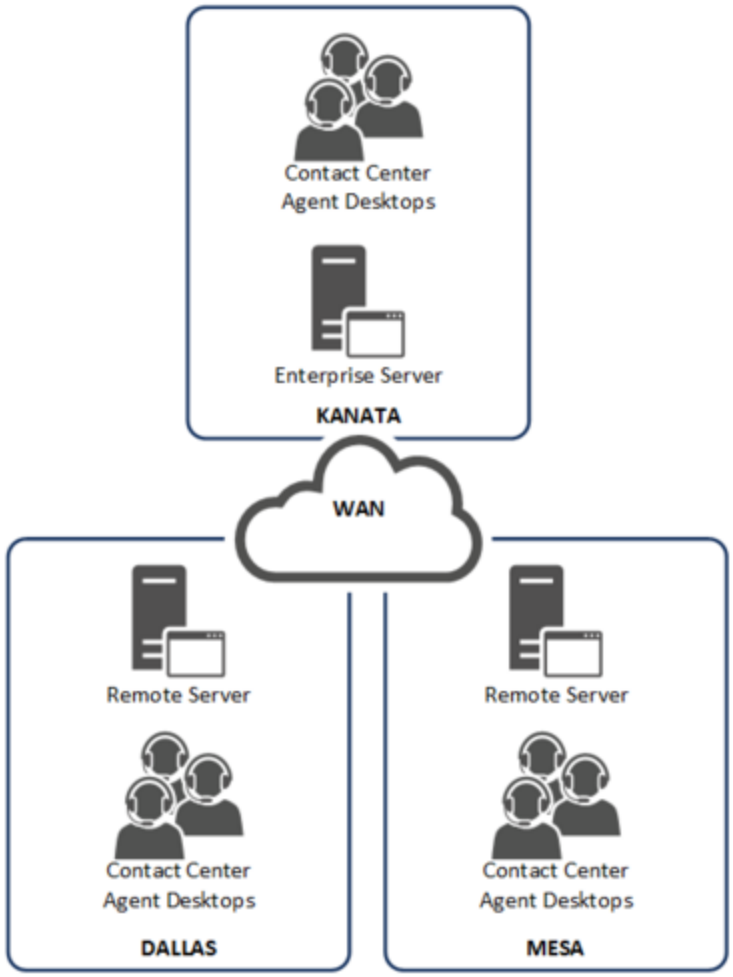


Figure 1: Sample distributed contact center with remote servers handling client updates

Microsoft SQL Server recommendations

A local Microsoft SQL Express instance is required on every Enterprise Server for interaction data tracking and internal messaging between some MiContact Center Business services. The local SQL Express instance can be used to store the historical data databases if, based on your data growth and data retention policies, you will remain below the 10 gigabyte per database limit imposed by SQL Server. You can determine your data growth and database lifetime by referring to "Bandwidth and storage requirements" on page 69.

Due to the high resource usage of MiContact Center Business and Microsoft SQL Server, sites should never collocate a fully licensed edition of Microsoft SQL Server with a MiContact Center Business Server. Collocation in this scenario can have a detrimental effect on performance. In addition, Microsoft does not recommend collocating extraneous applications on the same server as a Microsoft SQL Server instance.

MiVoice Call Recording recommendations

Mitel does not support the installation of MiContact Center Business and MiVoice Call Recording on a single server .

SITE-BASED SECURITY AND MULTI-TENANTING

In MiContact Center Business, the ability to segregate configuration and reporting data between sites, or tenants, is available through the use of site-based security. Each site within the enterprise represents a 'tenant'. When site-based security is turned on, applicable reporting and configuration data is partitioned so that only the data specific to each site is visible to the members of that site.

Users can only see configuration data specific to their site when they log in to MiContact Center Business applications, such as YourSite Explorer, Contact Center Client, Ignite, or CCMWeb. The system automatically filters data based on the user's site association, so that agents, supervisors, and administrators have no view of data or devices outside their sites. They will only be able to run reports on devices associated with their own site.

More definitive role-based access control can be achieved by implementing security lists and security roles within individual sites.

NOTE: In previous versions of MiContact Center Business, this segregation was achievable using a complex security role implementation and did not apply to YourSite Explorer.

Within a multi-tenant deployment, each tenant (or site) has dedicated media servers (one voice, one chat, one email, and one SMS server) for their contact center, ensuring that data between sites is never shared.

As in a single MiContact Center Business deployment, you use YourSite Explorer to synchronize queues, agents, agent groups, trunks, and extensions between the YourSite database and the telephone system. The Read/Write option in YourSite Explorer enables changes that are made to configuration settings to be written back to the telephone switch.

System defaults, for example, security roles and Account Codes, are shared across all tenants, but any additions made on a per-tenant basis are only visible to that tenant. For example, any custom codes created by users in one site are not visible to users in any other site. This applies to:

- Make Busy Codes
- Do Not Disturb Codes
- Account Codes
- IVR Routing Variables

The following features are not supported in a site-based security deployment:

- Workforce Scheduling
- MiVoice Analytics
- WallBoarder
- Workforce Management Connectors
- Flexible Reporting
- Active Directory synchronization
- Oria integration (for agent and supervisor provisioning)

The following reports are not supported in a site-based security deployment:

- Traffic Analysis reports
- Conversation reports
- Administrative reports
- Custom reports

For additional information, including configuration caveats, management information, and best practices, see the *MiContact Center Business Site-Based Security (Multi-tenant) Administration Guide*.

HIGH AVAILABILITY AND DISASTER RECOVERY DEPLOYMENT MODELS

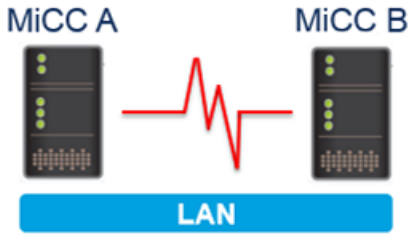
This section describes the possible deployment models.

There are three possible deployment models: High Availability, Disaster Recovery, and Business Continuity. Each of these models are described in the following sections.

High Availability

In the high availability deployment of the solution, the primary and secondary contact centers are on the same LAN.

Figure 2: High Availability



The solution-level architecture for this deployment model is depicted in Figure 3:

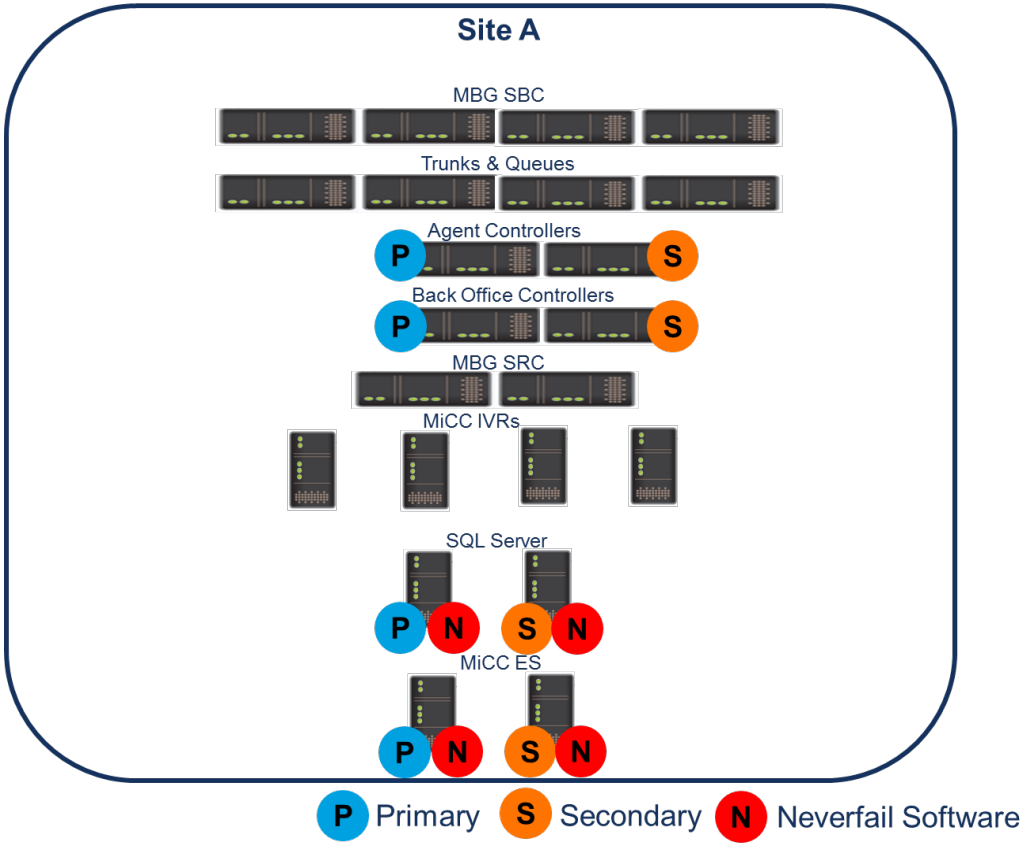


Figure 3: High Availability deployment model

NOTE:

- One separate computer (not depicted in Figure 3), running Neverfail software, is used to manage the Neverfail instances.
- The SQL server High Availability solution is provided by Neverfail and is independent of the MiContact Center Business High Availability solution.
- The Figure 3 shows MiContact Center Business, SQL, and IVRs as separate servers; but MiContact Center Business, SQL, and IVR co-located on the same server is also a supported setup.

- Installing HA is optional on the SQL servers. If HA is not required, the secondary SQL server is not needed.
- When licensed for High Availability, FQDN is required. FQDN will resolve to the proper active server, so the applications do not have to be restarted.

Disaster Recovery

In the Disaster Recovery deployment of the solution, the primary and the secondary contact centers are connected through the WAN. The servers can be on the same or different subnets. (i.e, using the FQDN of the MiContact Center Business instead of the IP Address). See the Figure 4.

Figure 4: Disaster Recovery

The solution-level architecture for this deployment model is depicted in Figure 5:

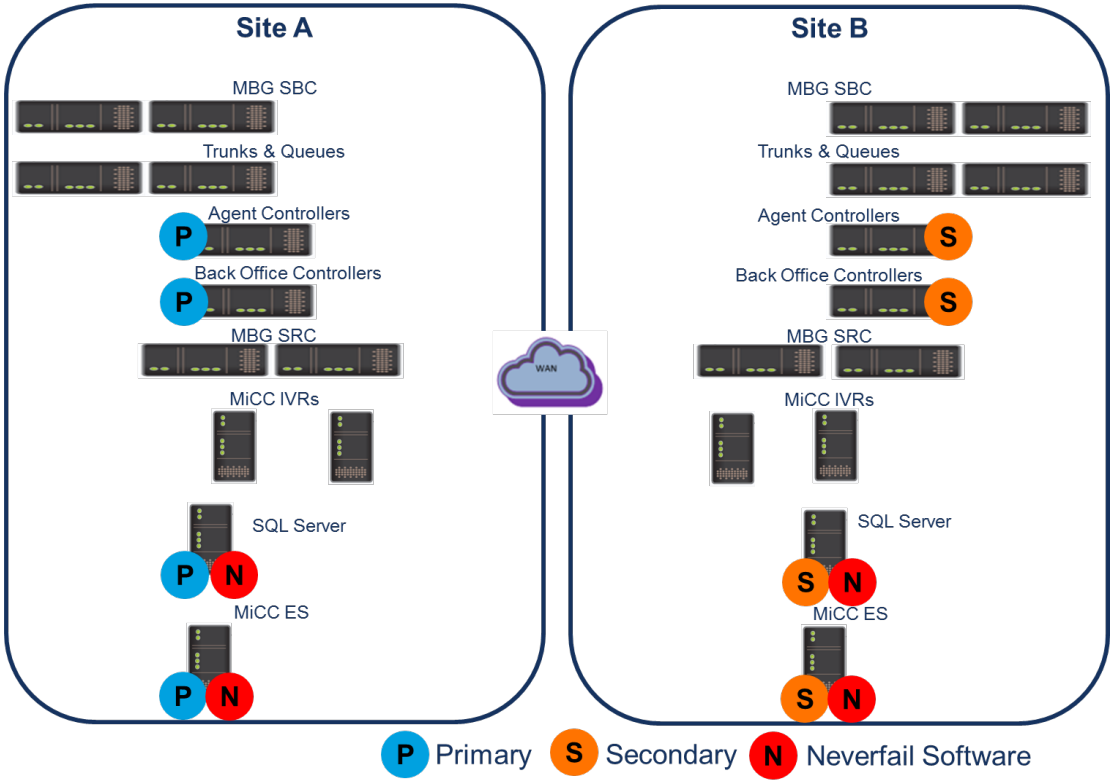


Figure 5: Disaster Recovery deployment model

NOTE:

- One separate computer (not depicted in Figure 5), running Neverfail software, is used to manage the Neverfail instances.
- The SQL server High Availability solution is provided by Neverfail and is independent of the MiContact Center Business High Availability solution.
- The Figure 5 shows MiContact Center Business, SQL, and IVRs as separate servers; but MiContact Center Business, SQL, and IVR co-located on the same server is also a supported setup.
- Installing HA is optional on the SQL servers. If HA is not required, the secondary SQL server is not needed.

- When a WAN connection is used between MiContact Center Business servers, the IPV4 network addresses of the two MiContact Center Business can be the same. They can also be different and on a different subnet. When licensed for High Availability, FQDN is required. FQDN will resolve to the proper active server, so the applications do not have to be restarted.

Business Continuity

The Business Continuity solution is a combination of the High Availability and the Disaster Recovery solutions, with the primary and secondary contact centers are on the same LAN. A third contact center is available through the WAN. The servers can be on the same or different subnets. (i.e, using the FQDN of the MiContact Center Business instead of the IP Address). See the Figure 6.

Figure 6: Business Continuity

The solution-level architecture for this deployment model is depicted Figure 7:

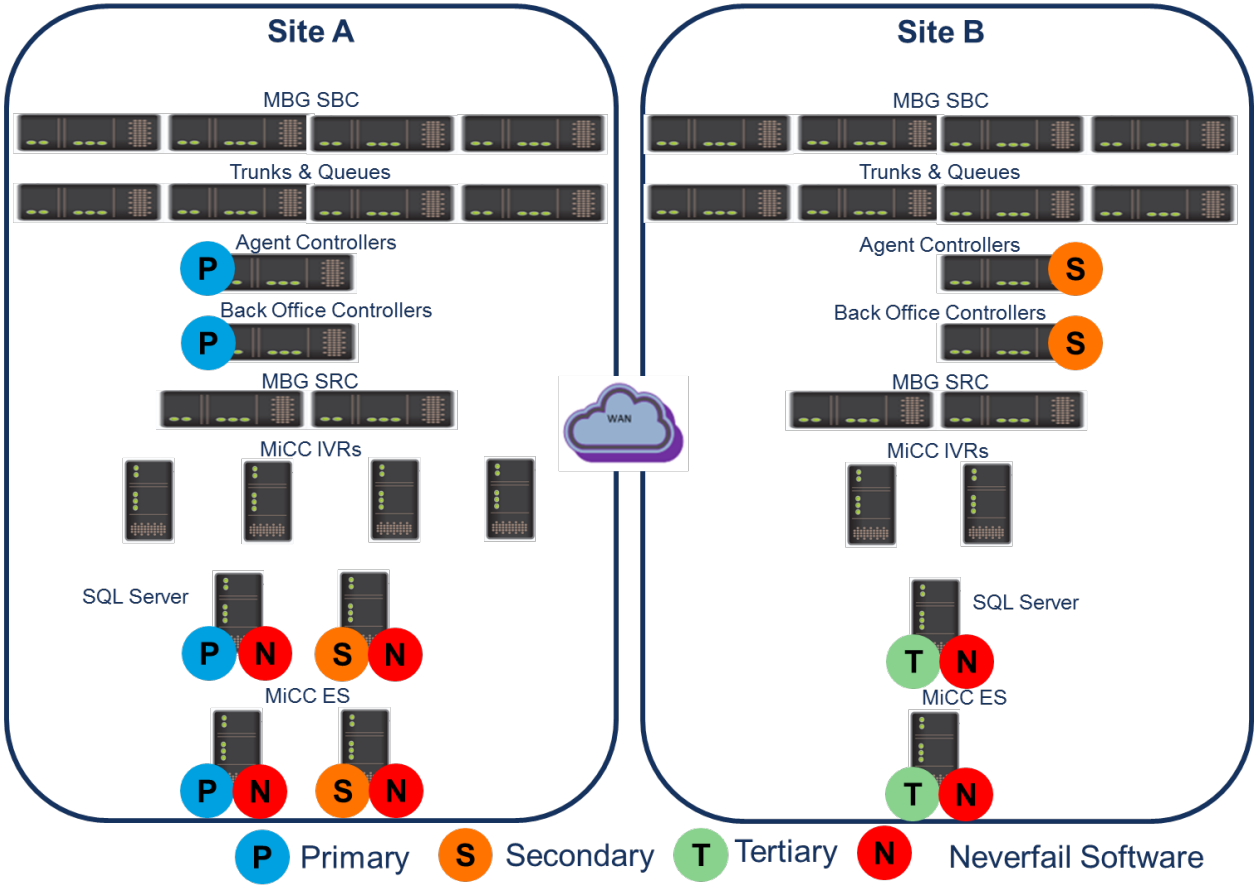


Figure 7: Business Continuity deployment model

NOTE:

- One separate computer (not depicted in Figure 7), running Neverfail software is used to manage the Neverfail instances.
- The SQL server High Availability solution is provided by Neverfail and is independent of the MiContact Center Business High Availability solution.
- There can be up to four remote IVR servers per MiContact Center Business. The Figure 7 shows two, for simplicity.

- The Figure 7 shows MiContact Center Business, SQL, and IVRs as separate servers; but MiContact Center Business, SQL, and IVR co-located on the same server is also a supported setup.
- Installing HA is optional on the SQL servers. If HA is not required, the secondary SQL server is not needed.
- When a WAN connection is used between MiContact Center Business servers, the IPV4 network addresses of the two MiContact Center Business can be the same. They can also be different and on a different subnet. When licensed for High Availability, FQDN is required. FQDN will resolve to the proper active server, so the applications do not have to be restarted.

SYSTEM REQUIREMENTS

The following section outlines the hardware and software requirements for server and client systems within MiContact Center Business. In order to ensure a successful deployment in both lab and production environments, you must meet or exceed the system specifications outlined here. It is important when planning the deployment infrastructure to not only consider what the traffic rates will be when initially implementing MiContact Center Business but also to consider the amount of growth over the lifetime of the server. In both physical servers and virtual hosts, you must ensure that the hardware can be upgraded or expanded to meet your needs as time progresses and your business grows.

The system specifications outlined here provide the resources required to run the MiContact Center Business applications and services under load and allow for an approximate 20% overhead for potential performance spikes during peak periods.

You must consider all applications and services running on the server when determining your server needs. The specifications described here include baseline operating system overheads but do not include additional applications, such as productivity software, antivirus applications, and management and backup solutions. You must allow for these additional applications when determining your system requirements to ensure adequate resourcing for MiContact Center Business applications and services. This is especially critical when sizing client desktop machines for agent use.

SERVER HARDWARE REQUIREMENTS

MiContact Center Business and MiVoice Analytics support 64-bit servers only. The following table describes the hardware requirements for a 64-bit server.

To determine which server level you require, carefully consider the information outlined in "MiContact Center Business deployment models" on page 5 and "Performance and scalability" on page 46

If any of the criteria described in the following table is applicable to your business, you require the highest corresponding hardware specifications. For example, if you plan to install MiContact Center Business, and two or more additional applications(IVR Routing up to 120 IVR Routing ports, Workforce Scheduling agents) or Multimedia agents on one server, you must adhere to the Large system requirements, even if you only have 15 agents.

Table 2: Server requirements

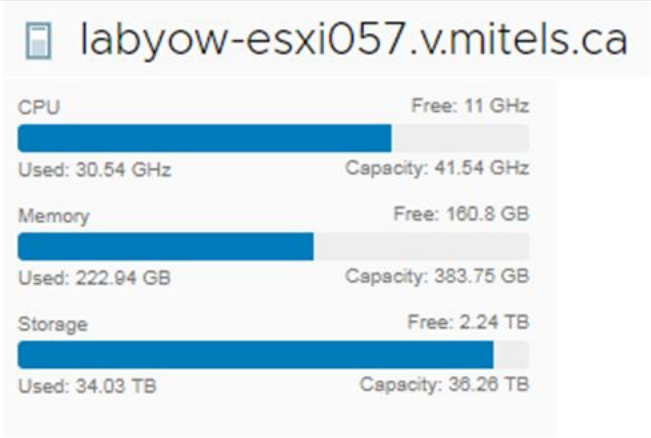
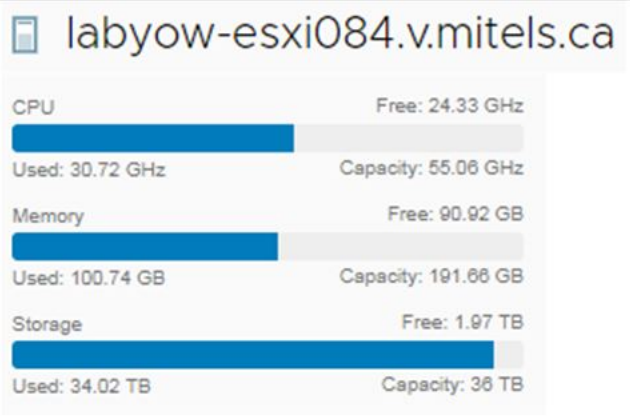
HARDWARE	SMALL	MEDIUM	LARGE
CPU cores	1 @ 2.0GHz with Hyperthreading, or 2 @ 2.0GHz without Hyperthreading	2 @ 2.0GHz with Hyperthreading, or 4 @ 2.0GHz without Hyperthreading	4 @ 2.0GHz with Hyperthreading, or 8 @ 2.0 GHz without Hyperthreading
Memory	8 GB	16 GB	32 GB
Storage	See "Bandwidth and storage requirements" on page 69.		
Criteria			
Conversations per hour limit	< 750	750 - 3000	3000 - 27000
Active agents limit	< 250	250 - 500	> 500

Table 2: Server requirements (continued)

HARDWARE	SMALL	MEDIUM	LARGE
Product mix	1**	MiContact Center Business + 1 additional application (IVR Routing up to 50 IVR Routing ports or Workforce Scheduling Agents)	MiContact Center Business, IVR Routing up to 120 IVR Routing ports, Multimedia Agents, Workforce Scheduling Agents

****** : Only one application per MiContact Center Business or MiVoice Analytics instance is supported. IVR Routing is not supported as a collocated application in Small platform configurations.

Due to the impact of Spectre/Meltdown mitigation on older Gen8/9 hardware, you must use Gen10+ server hardware for large server configurations. The figure below shows highlights the performance impact between the Gen9 and Gen 10 hardware.

Older Gen9 Host	Newer Gen10 Host
labyow-esxi057.v.mitels.ca Hypervisor: VMware ESXi, 6.7.0, 10302608 Model: ProLiant DL360 Gen9 Processor Type: Intel(R) Xeon(R) CPU E5-2640 v3 @ 2.60GHz	labyow-esxi084.v.mitels.ca Hypervisor: VMware ESXi, 6.7.0, 10302608 Model: ProLiant DL360 Gen10 Processor Type: Intel(R) Xeon(R) Gold 5118 CPU @ 2.30GHz
	

See "Performance and scalability" on page 46 for more information.

NOTE:

- The collocated platform requirements were determined with the primary SQL databases running standalone and the required Multimedia Contact Center databases running locally, as required.
- The SQL database will grow as data is collected over time. See "Bandwidth and storage requirements" on page 69.
- High Availability is supported on Medium and Large servers without having to increase the size of the system.

MICONTACT CENTER BUSINESS VIRTUAL APPLICATION REQUIREMENTS

Pre-loaded .ova virtual machines enhance the speed and ease of installing and deploying MiContact Center Business. The applications are pre-loaded on a Windows Server 2019 operating system, configured with SQL Server Express 2017 and all other prerequisites so the installation setup can be run with minimal configuration changes required.

VMware ESXi Versions 6.0 and 6.5 are currently supported.

The following table lists the default hardware specifications for the OVA files when shipped.

Table 3: vApp hardware specifications

VAPP	VIRTUAL CPUS	CPU RESERVATION	RAM (GB)	RAM RESERVATION	HARD DISK SPACE (GB)
Small	2	4000 MHz	8	8192 MB	200
Medium	4	8000 MHz	16	16384 MB	200
Large	8	16000 MHz	32	32768 MB	200

NOTE: The values shown in the above table describe the hardware specifications for the vApp when shipped. Based on your implementation requirements, you must review these specifications against the sever requirements and edit the virtual machine settings for CPU and RAM accordingly. The applications you have access to are dependent on your licensing options.

Due to the impact of Spectre/Meltdown mitigation on older Gen8/9 hosts, you must use Gen10+ server hosts for medium/large server configurations.

For more information see, "Virtualization" on page 34.

For optimum performance, it is recommended that the following power management settings be set for MiContact Center Business.ova files:

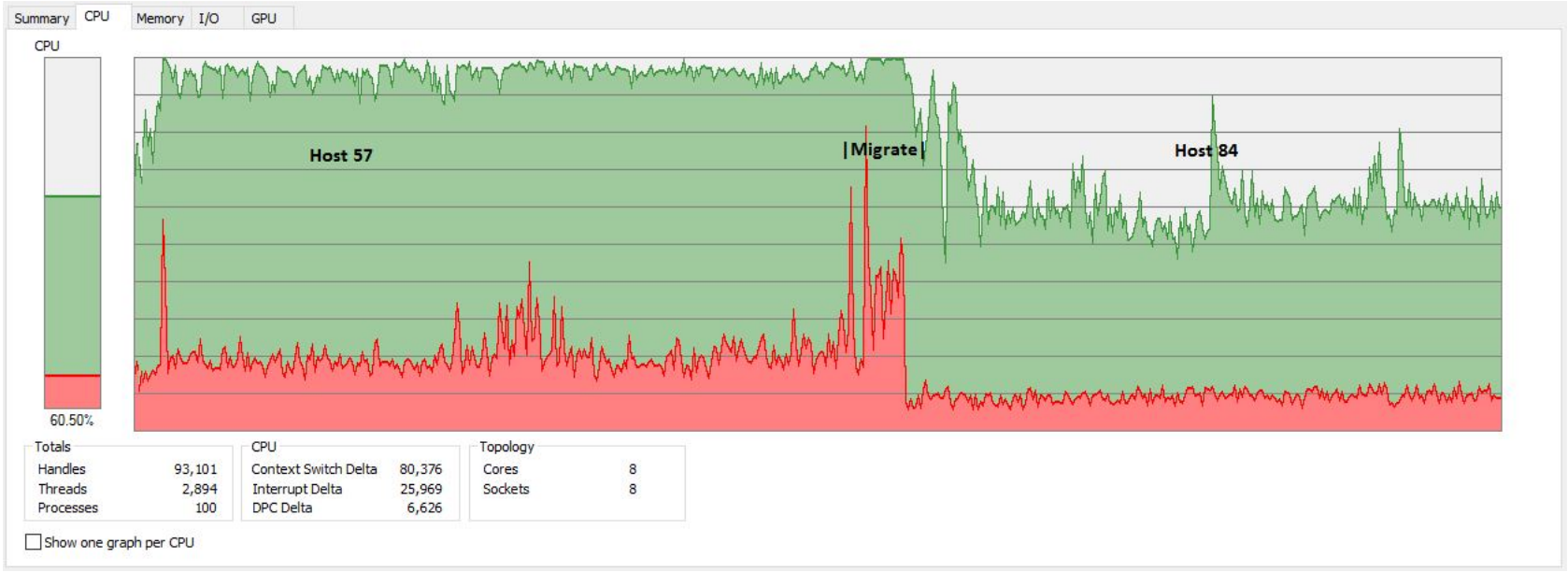
- On your VMware vSphere host, the CPU Power Management Policies should be set to High Performance.

When a WAN connection is used between MiContact Center Business servers, the IPV4 network addresses of the two MiContact Center Business can be the same. They can also be different and on a different subnet. When licensed for High Availability, FQDN is required. FQDN will resolve to the proper active server, so the applications do not have to be restarted.

For specific server requirements, see "Server hardware requirements" on page 20.

For more information and downloads, please visit https://www.vmware.com/products.

- Due to the impact of Spectre/Meltdown mitigation on older Gen8/9 hosts, you must use Gen10+ server hosts for medium/ large server configurations.



MULTI-TENANTING REQUIREMENTS

When provisioning the Enterprise Server in a multi-tenant or site-based security implementation, you must consider the overall performance requirements of all tenants operating within the system. MiContact Center Business verification was performed using a continuously active environment with 50 tenants on the Enterprise Server. Based on our testing, tenants must adhere to the specifications as outlined in Table 4.

When provisioning a multi-tenant implementation, you must follow the recommendations for small, medium, and large servers. See "Server hardware requirements" on page 20.

NOTE: At a minimum, a multi-tenant environment requires resources equivalent to that of a small server configuration. See "Server hardware requirements" on page 20.

A single tenant is defined as:

- Two MiVoice Business controllers paired for resiliency
- 10 active concurrent agents
- 225 calls in the busy hour

The maximum limits for a single Enterprise deployment when used for multi-tenanting are:

- 50 tenants, with a maximum of 25 tenants on the Enterprise Server and 25 tenants across all Remote Server instances
- 500 active concurrent agents
- 11250 calls in the busy hour

Table 4 displays the per tenant CPU and memory requirements. Multiply these requirements by the number of tenants you plan to provision with the MiContact Center Business Server.

Table 4: Multi-tenant per tenant resource specifications

HARDWARE	REQUIRED PER TENANT
CPU speed	133 MHz
Memory	256 MB

Table 5 describes the number of tenants supported by small, medium, and large server sizing models.

Table 5: Supported tenant specifications per server size

	SMALL	MEDIUM	LARGE
Max Tenants	10	25	50
Max MiVoice Business Servers	20	50	100
Max Active Agents	100	250	500
Max Conversations per Hour	2250	5625	11250

For more information regarding multi-tenanting, see the *MiContact Center Business Site-Based Security (Multi-tenant) Administration Guide*.

SERVER SOFTWARE REQUIREMENTS

The following table defines which software technologies are supported or required by MiContact Center Business and MiVoice Analytics 9.2 applications and services.

In accordance with Microsoft best practices, we advise you to update your Windows operating system with the recommended security patches, hotfixes, and service packs. For more information, consult your Microsoft documentation.

NOTE:

- If there is a technology that is not included in this guide and you are unsure whether it is supported, please contact your approved Mitel vendor. For information on support requirements for Microsoft technologies, see http://www.support.microsoft.com.
- Install the appropriate antivirus software with the latest virus definitions and data backup software on the Enterprise Server. Ensure antivirus software is disabled before installing MiContact Center Business.
- To ensure your MiContact Center Business applications are able to write files without error, you must configure your antivirus software to exclude the <installation_drive>:\Program Files (x86)\Mitel\MiContact Center folder (or whichever folder you chose for your installation files).
- MiContact Center Business requires a SQL collation setting of SQL_Latin1_General_Cp1_CI_AS. This is the default collation setting when Microsoft SQL Server is installed on a Windows operating system using the English United States regional settings. If your Windows regional settings are configured differently, the default collation setting may be one that is incompatible with SQL scripts required by MiContact Center Business for installation and upgrades, and may cause unexpected behavior with stored procedures, views, and other database objects. To ensure your regional settings default to the supported collation setting, please refer to the following Microsoft resource: http://msdn.microsoft.com/en-us/library/ms143508.aspx.

Table 6: Supported server software technologies

SOFTWARE	NOTES
Operating Systems	
Windows Server 2019 Standard and Datacenter	

Table 6: Supported server software technologies (continued)

SOFTWARE	NOTES
Windows Server 2016 Standard and Datacenter	**NOTE**: Microsoft Windows Server 2016 Essentials is not supported.
Windows Server 2012 R2 Standard and Datacenter	
Windows Server 2012 Standard and Datacenter	
Microsoft SQL Server	
SQL Server 2017, 2016, and 2014	Express, Enterprise, Business Intelligence, and Standard Editions **NOTE:** In addition, MiContact Center Business requires SQL Express with Tools on the Enterprise Server
.NET Framework	
.NET Framework 3.5 AND .NET Framework 4.5 or 4.6	NET Framework 3.5 and .NET Framework 4.5 or 4.6 are required on all server and client computers that use MiContact Center Business and MiVoice Analytics applications **NOTE:** As of Windows Server 2012, .NET 3.5 is a Windows feature, as opposed to a redistributable package, and can be installed from the Windows Features management panel
Other software	
Excel 2010, 2013, and 2016	Excel is required for viewing and distributing reports for printing
Office 2010, 2013, and 2016	
Windows 10, 8.1, 8	
VMware ESX 6.0 , 6.5	

Table 6: Supported server software technologies (continued)

SOFTWARE	NOTES
VMware Horizon 7.4.0	
Citrix XenApp/XenDesktop 7.18	
Microsoft CRM 2013	
MiCollab 8.1 SP1, 8.1, 8.0 SP1	

CLIENT HARDWARE REQUIREMENTS

Client hardware requirements depend on the number of applications and services being run on client computers. As you add applications concurrently on a single computer, your CPU, RAM, and hard disk space requirements increase. Table 7 describes our minimum requirements for client hardware.

Table 7: Client hardware requirements

SPECIFICATIONS

	Profile: **Single usage of Contact Center Client, CCMWeb, YourSite Explorer, Ignite (WEB), or Workforce Scheduling**	**Profile:** **Users running with additional productivity or business software, such as Microsoft Office**
Processor cores	2 @ 2.0 GHz or greater	4 @ 2.0 GHz or greater
Memory	4 GB	8 GB
Storage	Minimum 2 GB must be available for installation	
Screen resolution	1280 x 1024 pixels or higher **NOTE:** MiContact Center Business and MiVoice Analytics do not support display configurations using 3 or more monitors.	

NOTE:

- Due to the technical limitations of 32-bit client operating systems, the minimum requirement of 4 GB of memory cannot be achieved. Users with 32-bit operating systems should limit their system usage to the single usage profile described in Table 7. Mitel will be phasing out support for 32-bit operating systems in a future release.
- If you are running additional applications, such as office productivity software, customer relationship management applications, antivirus software, browsers, and communication applications, on the client desktop, you must consider increasing the specifications as described in Table 7.

CLIENT SOFTWARE REQUIREMENTS

Table 8 defines which software technologies are supported by MiContact Center Business and MiVoice Analytics 9.2 applications and services.

In accordance with Microsoft best practices, we advise you to update your Windows operating system with the recommended security patches, hotfixes, and service packs. For more information, consult your Microsoft documentation.

NOTE:

- Due to the technical limitations of 32-bit client operating systems, users with 32-bit operating systems should limit their system usage to the single usage profile described in the 'Client hardware requirements' table in "Client hardware requirements" on page 30. Mitel will be phasing out support for 32-bit operating systems in a future release.
- If there is a technology that is not included in this guide and you are unsure whether it is supported, please contact your approved Mitel vendor. For information on support requirements for Microsoft technologies, see http://www.support.microsoft.com.

Table 8: Supported client software technologies

SOFTWARE TECHNOLOGY	NOTES
Operating Systems	
Windows 10	
Windows 8.1	
Windows 8	
Windows 7 SP1	MiContact Center Business requires Aero be enabled for Windows 7.
.NET Framework	
.NET Framework 3.5 AND .NET Framework 4.5 or 4.6	NET Framework 3.5 and .NET Framework 4.5 or 4.6 are required on all server and client computers that use MiContact Center Business and MiVoice Analytics applications **NOTE:** As of Windows Server 2012, .NET 3.5 is a Windows feature, as opposed to a redistributable package, and can be installed from the Windows Features management panel

Table 8: Supported client software technologies (continued)

SOFTWARE TECHNOLOGY	NOTES
Other software	
Excel 2010, 2013, and 2016	Used for report viewing
Office 2010, 2013, and 2016	
Adobe Acrobat Reader	Used for report viewing

HIGH AVAILABILITY AND DISASTER RECOVERY SYSTEM REQUIREMENTS

HARDWARE REQUIREMENTS

- A resilient phone system configuration and any other services deemed critical by the customer.
- A Windows server separate from the MiContact Center Business Servers. This is to run the Neverfail Engine Management Service. See the *Neverfail Installation guide* for details.
- Two MiContact Center Business Enterprise Servers for high availability and disaster recovery
  NOTE: Additional NICs for management purposes or to enhance reliability by reducing points of failure is recommended.
- Three MiContact Center Business Enterprise Servers for Business Continuity
- The servers being protected must all be either virtual or physical, but must not be a mixture. Please see the requirements as stated in the Server Deployment Architecture Options in the *Neverfail Continuity Engine Installation Guide*. The following is supported:
  - Virtual to Virtual
    - Each virtual machine used in the Virtual-to-Virtual pair should be on a separate ESX host to guard against failure at the host level.
  - Physical to Physical
- Virtual servers are recommended for ease of deployment. Two virtualization technologies are supported:
  - VMware
  - Hyper-V

SOFTWARE REQUIREMENTS

- The solution has been tested against the following versions of Neverfail Continuity Engine. The plug-in is automatically installed only on Neverfail Continuity Engine 8.5 and later versions. It can be manually installed on Neverfail Contiuity Engine versions 8.1 and 8.2.
- The solution has been tested on the following versions of Windows server:
  - Windows Server 2019 (64-bit)
  - Windows Server 2016 (64-bit)
  - Windows Server 2012 R2 (64-bit)
  - Windows Server 2012 (64-bit)

LICENSING REQUIREMENTS

- MiContact Center Business license and a High Availability license
- Windows OS licenses
- SQL Server license
- VMware licensing (if applicable)

SUPPORTED TECHNOLOGIES

The solution has been tested with the following technologies and releases:

- Citrix version 7.14
- MBG 10.0 SP2, 11.0
- MiV-CR 9.2 SP2
- SSL / no SSL

SUPPORTED TECHNOLOGIES

The following section describes hardware and software technologies supported by MiContact Center Business and, where applicable, provides guidance and best practices for using these technologies in MiContact Center Business deployments.

VIRTUALIZATION

Virtualization is the process of virtualizing the hardware on which the Windows operating system is running. The system emulates physical hardware to improve resource utilization and centralize system management. As well as the supported virtualization software described in this section, there are additional pieces of software and features that are supported, such as Microsoft Virtual Machine Manager, VMware vSphere, and VMware Site Recovery Manager.

The following section describes supported server and client virtualization technologies.

Please refer to the *Virtual Appliance Deployment Solutions Guide* for more detailed information regarding server virtualization.

NOTE: MiContact Center Business and MiVoice Analytics server applications are supported in virtualized environments. Product testing has been limited to those virtualization technologies outlined in this guide.

SERVER VIRTUALIZATION

Server visualization, like client virtualization, allows for the virtualization of the underlying hardware on which the Windows operating system is running. Using server virtualization enables organizations to manage hardware, reduce hardware faults that can interrupt critical user services, and provide disaster recovery for the IT infrastructure.

Please refer to the *Virtual Appliance Deployment Solutions Guide* for more detailed information regarding server virtualization.

Planning for server virtualization

When deploying MiContact Center Business servers using virtualization, you must first carefully plan and size the virtualization infrastructure.

Virtualization infrastructure vendors provide tools and information on how to plan, reserve, and implement the appropriate virtual resources for all guest operating systems running within the infrastructure.

When running existing services on physical hardware and moving to a virtual infrastructure, we recommend you measure the average and peak resource allocation across disk, CPU, and memory to aid in scoping and sizing the resources to commit to each guest operating system.

Deciding which virtual hosts will service each virtual guest system is a critical planning step. The host must be provisioned to handle the average and peak resource utilization of all guest systems homed to that host, in addition to the performance overhead incurred by the hypervisor.

Mitel makes all efforts to validate and test against virtualization infrastructure and underlying hardware manufacturers' products. Support and engineering staff may request additional resources on virtualization servers, or additional resources on associated guest operating systems, to adequately cover usage by MiContact Center Business services and to eliminate resource starvation as a possible cause of software issues.

For more information on planning resource allocation and virtual infrastructure sizing, please refer to your virtualization vendor's documentation.

The following section details the supported server virtualization technologies.

VMware ESXi

VMware ESXi supports both a single host environment and larger multi-host environments. Each host runs the same base operating system (VMware ESX) but the management software differs when using multi-host clustered environments as you require VMware vCenter server.

Supported technologies for VMware ESXi include:

- VMware vSphere

MiContact Center Business and MiVoice Analytics 9.2 support VMware ESXi 6.0 , and 6.5.

Microsoft Hyper-V

Microsoft Hyper-V supports both a single host environment and larger multi-host clustered environments. Single host environments support a server running Windows Server 2012, 2012 R2, 2016, or 2019. For multi-host clustered environments, an additional server capable of running the Microsoft System Center Virtual Machine Manager is required.

Hyper-V supports failover and live migration using Microsoft System Center Virtual Machine Manager. A Storage Area Network is required to support this.

Customers using Hyper-V are strongly recommended to use Version 2012, 2012 R2, 2016, or 2019 for the hypervisor and to stay up to date with future patches and service packs.

In addition, it is strongly recommended to follow all Microsoft best practices for setting up, configuring, and maintaining your Hyper-V hypervisor servers. For more information, see http://blogs.technet.com/b/askpfeplat/archive/2013/03/10/windows-server-2012-hyper-v-best-practices-in-easy-checklist-form.aspx.

Best practices for virtualization

MiContact Center Business and MiVoice Analytics hardware and software recommendations do not change when running the Enterprise Server in a virtualized environment.

When translating the physical hardware specifications outlined in this guide to your virtualized environment, you need to be aware of the makeup of the current physical processor, such as the type of processor, gigahertz speed, and number of cores available. For information on calculating the number of virtual CPUs required based on physical hardware specifications, please refer to your virtualization vendor's documentation.

You must use dedicated resources (as opposed to resource scheduling) when running MiContact Center Business to ensure optimal performance and voice quality. When using shared resources, you may experience a degradation in performance and call quality caused by either the MiContact Center Business or Remote server being starved of processor resources or the hypervisor providing a lower processor priority for the MiContact Center Business or Remote guest operating system instruction execution. If using shared resourcing, you must ensure you have sufficient resources to run our software according to the hardware specifications as outlined in this guide.

Virtual host server requirements must be greater than the sum of all virtual machines that will run concurrently. Applications running on the host machine as well as other virtual machines configured on the host can affect the functionality of the MiContact Center Business software. Please refer to your virtualization vendor's documentation for specific hardware and software requirements.

While MiContact Center Business, MiVoice Analytics, and IVR Routing are expected to function properly in a virtual environment, there may be performance implications which can invalidate the minimum system requirements as outlined in this guide.

If Mitel support or engineering staff suspect that the virtualization layer or software are the root cause of a problem, you may be required to

- Install the software on a non-virtualized server to eliminate virtualization as a root cause
- Contact the appropriate vendor to resolve the virtualization layer issue

For detailed information and specifications regarding running Microsoft or other third-party software in virtualized environments, please consult your virtualization vendor.

For detailed information regarding virtual appliance deployments, see the *Virtual Application Deployment Solution Guide*.

Best Practices for High Availability

There is a remote chance that in a failover scenario an email is present in the active MiContact Center Business, but is not synchronized over to the passive MiContact Center Business when the failover occurs. The email can be recovered by switching back to the formerly active MiContact Center Business, where an audit will then pick it back up for processing.

CLIENT VIRTUALIZATION

Client-side virtualization falls into two categories:

- Virtual Desktop Infrastructure (VDI)
- Application Presentation, including Application Delivery and Session Virtualization

In VDI environments, a virtualized desktop is available to users as if they were using a traditional PC, however the operating system runs on a remote server infrastructure. Microsoft Remote Desktop Services, (RDS), Citrix XenApp, and VMware Horizon View are examples of VDI virtualization providers.

In Application Presentation, individual applications are virtualized and provided to users as opposed to providing all applications together, as with a Windows desktop presentation. In Application Delivery, the virtualization technology offers both online and offline application access by copying the application files, configuration, and settings directly to the client and executing within an isolation environment. When executed, the application can interact with the user desktop through an application virtualization layer. Alternatively, through Session Virtualization the application runs directly within the server environment and the application interface is streamed to the user over the network.

Planning for client virtualization

Careful planning and sizing is imperative when deploying MiContact Center Business clients via client virtualization technology.

When using application presentation, each instance of an application requires appropriate processor, memory, and disk performance. All supported client virtualization vendors provide intensive information on measuring, sizing, and implementing appropriate resources for the applications simultaneously being presented to users. We strongly recommend implementing a full desktop for each user role you plan to deploy and measuring system resource usage by application during normal user-application interaction. In addition, the server you provision must allow for heavy usage during peak hours.

When using VDI as a client virtualization technology, resources must be allocated to support the summation of all active user sessions running on the VDI infrastructure. Sizing must allow for full resource allocation for all desktop sessions with appropriate consideration for resource overhead during peak business hours.

Mitel support staff may request additional resources on virtualization servers to adequately cover user and application sessions to eliminate resource starvation as a potential cause of software issues.

The following section describes the supported client virtualization technologies.

VMware Horizon View

Client virtualization has been validated for VMware Horizon View Version 7.4.0. Our verification testing environment consisted of the following:

- Client testing with a Windows 8 operating system that included all current Windows updates
- Windows Server 2008 R2 for VMware Horizon with View controller
- Windows Server 2012 R2 server with MiContact Center Business Version 9.2
- MiVoice Business Release 9.0 SP1
- MiCollab Client 8.1 SP1
  NOTE: MiCollab is only supported with the VMware Horizon Client. It is not supported with VMware Horizon View HTML Access.

VMware software used was:

- VMware Horizon View 7.4.0

The following features are supported with VMware Horizon View:

- Ignite (DESKTOP) or Ignite (WEB) with MiCollab Client Softphone or Deskphone and Ignite (WEB) with Multimedia
- Docking between Ignite and MiCollab Client
- Dragging and dropping of email attachments
- Ignite (DESKTOP) or Ignite (WEB) with Contact Center Client

Please refer to the *VMware Horizon View Support Solutions Guide* for more detailed information regarding VMware Horizon View support.

Citrix XenApp

Client virtualization was been validated for Citrix XenApp version 7.19 and Citrix XenServer version 8.0 with MiContact Center Business Version 9.2.

Our verification testing environment consisted of the following:

- Client testing with Windows 10 operating systems and all current Windows updates
- Server 2012 R2 for XenApp controller server
- XenServer 8.0 virtual machine image to host applications
- MiContact Center Business 9.2 Server

The Citrix software used was:

- XenApp 7.19
- XenServer 8.0

The following Client Component Pack applications were tested and are supported through the Citrix Receiver:

- YourSite Explorer
- Contact Center Client
- MiCollab Client Softphone
- Ignite (DESKTOP)

Voice streaming from the virtual desktop is supported for MiCollab Client Softphone.

The following features are not supported:

- Dragging and dropping emails in Ignite (DESKTOP) (the file browse dialog can be used)
- Contact Center Softphone

NOTE: Before you install Citrix XenApp, ensure that you have disabled the **Contact Center Softphone** feature.

Best practices for MiContact Center Business application hosting

Refer to Citrix documentation to catalog the virtual server and host the desired applications from the Client Component Pack and adhere to the following best practices.

Before creating the machine catalog, set up the master application server virtual machine and ensure it is connected to the domain controller. Ensure all best practices are adhered to before creating the machine master catalog in Citrix XenApp otherwise when the application server is rebooted settings will revert.

Make sure all Windows updates are current on all server operating systems prior to creating the Citrix master machine catalog.

The MiContact Center Business web applications, CCMWeb and Ignite (WEB), require a supported browser to be available for users. For a list of supported browsers, see "Supported browsers" on page 123.

Microsoft Excel and Adobe Reader should be installed on each application server if CCMWeb is going to be hosted via Citrix for report viewing.

We recommend you have a separate server image in the hypervisor farm whose sole purpose is to host the applications within the Client Component Pack. The number of servers required depends on the number of users and the size of the environment. We do not recommend hosting the applications directly from a MiContact Center Business virtualized server.

Applications running on clients should always be exited and closed appropriately. If a user logs out of Citrix Store Front while any of our applications are running, the process will continue to run on the application server until the user either logs back into the application and closes it or the process is ended on the application server.

Client logs for applications are located on the Citrix application server under the user folder structure for each of the clients that logged in to use the contact center applications.

Contact Center Client profiles for individual users are saved within the folder structure for that user on the application server. If the user saved the profile to their desktop, it will only appear in the applications server folder as mentioned. To enable the profile to show on the desktop it must be saved as a file by choosing the local disk on the local client and manually browsing to the desktop folder structure for the user in question. The required window's permissions will need to be in place for this to function properly.

Microsoft Remote Desktop Services

Microsoft Remote Desktop Services (RDS), formerly Terminal Services, is a server role in Windows Server. Using RDS, users can access session-based and virtual machine-based desktops and applications from within the corporate network or from the Internet. RDS also enables secure connections for remote users from managed or unmanaged devices.

For more information on Microsoft Remote Desktop Services, please see https://technet.microsoft.com/en-us/windowsserver/ee236407.aspx.

The Client Component Pack is supported within an RDS implementation when leveraging a session-based desktop role deployment. The following applications are supported within RDS:

- Ignite (DESKTOP)
    - Supported as a standalone application only; the MiCollab Client and Ignite integration is not supported when used in an RDS environment.
- Contact Center Client
    - Contact Center PhoneSet Manager is supported, however Contact Center Softphone is not supported when used in an RDS environment.

NOTE: Before you install Citrix XenApp, ensure that you have disabled the **Contact Center Softphone** feature.

- YourSite Explorer
- Workforce Scheduling
- Flexible Reporting

For troubleshooting purposes, Mitel support staff reserve the right to request a standalone desktop outside of the RDS deployment to eliminate possible environmental influences.

When deploying the Client Component Pack appropriate resources must be provisioned to support the minimum operating requirements for all applications running within the cumulative users' desktop sessions. For more information on client hardware and software requirements, please refer to "Client hardware requirements" on page 30 and "Client software requirements" on page 31.

SYSTEM MANAGEMENT AND MONITORING

The ability to monitor the availability of servers and services and to manage client and server systems in a streamlined and efficient way are critical to any enterprise deployment. A wide variety of management and monitoring systems are available. MiContact Center Business endeavors to integrate with industry standard protocols and processes to provide a seamless integration with these systems.

The following section outlines considerations and practices for system management and monitoring of clients and servers within the MiContact Center Business deployment.

Desktop management

It may be necessary to install the Client Component Pack using administrative tools in order to comply with established software deployment and management policies or in deployments that include a large number of client installations. These tools include solutions such as Microsoft System Center Configuration Manager, Dell KACE, and other similar management solutions.

Mitel does not explicitly support desktop management tools for client software deployments but makes every effort to provide the infrastructure and documentation to aid in the integration of MiContact Center Business with these solutions.

Typically, an administrative installation workflow consists of three distinct phases:

1. The manageable tasks phase
2. The unmanaged tasks phase
3. The verification tasks phase

Manageable tasks can be scripted, scheduled, or otherwise executed using an administrative method and your chosen system management tool and are usually performed by designated installation personnel.

Unmanaged tasks are performed automatically by the MiContact Center Updater service that is installed to every system with the Client Component Pack. These tasks cannot be managed by the system management solution but are required for Client Component Pack functionality.

Verification tasks can be manageable, manual, or optional, depending on the requirement of the individual deployment and the capabilities of the system management package.

For additional information on silent and administrative installations, see the *MiContact Center Business Installation and Administration Guide*.

GROUP POLICIES

Microsoft Group Policy infrastructure allows you to implement specific configurations for users and computers. Group Policy settings are contained within Group Policy Objects which are linked to Active Directory Service containers such as sites, domains, or Organizational Units. Group Policies are typically implemented to control Windows features and their functionality for local and domain users.

Due to the large number of configuration settings and varying requirements for implementation across different organizations, we do not verify the implementation of Group Policies on Microsoft Windows Servers or client operating systems for MiContact Center Business. We recommend that the MiContact Center Business Server and Remote Servers be placed in an Organizational Unit with a Group Policy that has the minimal Group Policy Settings, as deemed acceptable by your organization, applied.

Mitel support and engineering staff may, through the course of fault or performance diagnosis, require the MiContact Center Business Server or client computer to be placed in an Organizational Unit with no Group Policy restrictions to isolate the fault from possible Group Policy conflicts.

CALL RECORDING

MiContact Center Business offers 24/7 call recording by integrating with MiVoice Call Recording, dvsAnalytics Encore, or Red Box Quantify call recording software. Using the MiVoice Call Recording Connector, MiContact Center Business can optionally record calls based on pre-defined schedules or other run-time parameters. With MiVoice Call Recording, call recording can be temporarily started or stopped in Contact Center Client to ensure customer confidentiality or to create a record of volatile or sensitive calls. For more information, see the *MiContact Center Business User Guide*.

For enhanced call security, MiContact Center Business also integrates with the Mitel Secure Recording Connector to facilitate the recording of Mitel encrypted voice streams by third-party software. MiVoice Call Recording can optionally be used in conjunction with the Mitel Secure Recording Connector service. dvsAnalytics Encore and Red Box Quantify must be used in conjunction with the Mitel Secure Recording Connector. When a call recording is complete, a hyperlink to the recording is appended to call specific Lifecycle reports. For more information about Lifecycle reporting, see the reports guide applicable to your MiContact Center Business licensing. Call recording integration is available for MiContact Center Business and MiVoice Analytics.

Integration with the following call recording versions has been verified:

- MiVoice Call Recording Versions 9.1 SP4 and 9.2 (verified in MiContact Center Business Version 9.2)
- dvsAnalytics Encore 2.3.5 (verified in MiContact Center Business Version 8.0)

Red Box call recording integration was verified with the latest Quantify build against MiContact Center Business Version 8.1.2.0 and later.

NOTE:

- MiVoice Call Recording can be collocated on the Enterprise Server only when installing using the pre-configured OVA template. Mitel does not support the installation of MiContact Center Business and call recording software on a single server when installed manually.
- Before you can configure call recording in YourSite Explorer, you must configure your MiVoice Call Recording, dvsAnalytics Encore, or Red Box Quantify and/or the Mitel Secure Recording Connector by following the recommended installation and configuration guidelines included with these products. MiVoice Call Recording documentation is available at http://edocs.mitel.com. Contact your dvsAnalytics or Red Box approved vendor for all setup and troubleshooting issues.
- Contact dvsAnalytics or Red Box for information on integrating call recording with the Mitel Secure Recording Connector.
- The Contact Center 3rd Party Call Recording Connectors dvsAnalytics Encore and Red Box Quantify do not support External Hot desking Agents.
- Ensure call recordings are working properly for all configured extensions before activating the call recording integration in YourSite Explorer.
- Indirect recording with MiVoice Call Recording is not supported with Contact Center Client Softphone.

AUTOMATIC SPEECH RECOGNITION AND TEXT TO SPEECH

MiContact Center Business integrates with Nuance Recognizer, enabling workflows to collect caller speech with which to populate variables.

MiContact Center Business integrates with Nuance Vocalizer to support Text to Speech for IVR Routing prompts and workflows.

Nuance Recognizer can be collocated on the same server as Nuance Vocalizer. Automatic Speech Recognition Servers and Text to Speech servers cannot be collocated with the MiContact Center Business Server.

Licensed languages must be installed on the Nuance server. Ensure that languages aligning with MiContact Center Business-supported languages are installed on the Nuance Recognizer server. The following languages do not have a directly corresponding language with Nuance Recognizer/Vocalizer:

- Chinese (Simplified)
- Spanish (European)
- Spanish (Latin American)

Administrators should choose the Nuance language for these MiContact Center Business-supported languages that best matches their language needs.

The following products and versions are supported in MiContact Center Business Version 9.2:

- Nuance Recognizer Version 11
- Nuance Vocalizer for Enterprise Version 6.0
  NOTE: Only Nuance bet1 (x86) version voices are supported.
- Nuance Speech Server Version 6.2
- Nuance License Manager Version 11.7

MiContact Center Business supports a maximum of:

- 3550 calls per hour when running Automatic Speech Recognition or Text-to-Speech workflow activities
- 50 maximum concurrent in-use Nuance ports

NOTE:

- Based on these maximums, IVR may experience failures of Automatic Speech Recognition or Text-to-Speech (within acceptable margins of up to 5%)
- While using Nuance and grammar files which requires to create a shared folder with domain level access, the shared folder is named as IVRDirectory which is mapped to the following path: `%InstallDir/IVR`.

For additional engineering, deployment, and installation considerations consult your Nuance documentation.

PERFORMANCE AND SCALABILITY

The following section describes verified MiContact Center Business and MiVoice Business parameters in non-resilient, active-standby resilient, and active-active resilient configurations:

- **Non-Resilient:**
  MiContact Center Business has been tested to support 100 concurrent active MiVoice Business controllers while running at busy hour traffic. A single MiContact Center Business server can only collect data directly from a maximum of 25 active MiVoice Business controllers. To support 100 concurrent active MiVoice Business controllers, you must use remote servers as data collection nodes for every additional 25 active MiVoice Business controllers from which you want to collect data. This necessitates four servers plus additional servers for the database and email and chat servers, if required. The entire MiContact Center Business Enterprise deployment cannot exceed 100 MiVoice Business controllers.
- **Active - Standby Resilient:**
  MiContact Center Business has been tested to concurrently support 50 active and 50 standby MiVoice Business controllers while running at busy hour traffic. A single MiContact Center Business server can only collect data directly from a maximum of 25 active MiVoice Business controllers, but can act as the data collection node for the corresponding 25 standby MiVoice Business controllers. To support additional active MiVoice Business controllers, you must use remote servers as data collection nodes for every additional 25 active MiVoice Business controllers from which you want to collect data. This necessitates two servers plus additional servers for the database and email and chat servers, if required. The entire MiContact Center Business Enterprise deployment cannot exceed 100 MiVoice Business controllers.
- **Active - Active Resilient:**
  In this environment, data needs to be collected from all MiVoice Business controllers. From a MiContact Center Business perspective it is similar to the non-resilient environment described above. To support 100 MiVoice Business controllers, you need four servers for data collection.

NOTE:

- See "IVR Routing scalability" on page 62 for the maximum number of IVR ports supported per IVR Routing server.
- The capacity results described in this document supersede any previous or current statements in other MiContact Center Business or MiVoice Business documentation.

The agent and interaction traffic capacity results displayed in the following tables demonstrate the maximum interactions for voice, email, chat, and SMS, alone and in a blended environment, as verified for MiContact Center Business - Contact Center licensed version.

SCALABILITY CALCULATIONS

The results described in the following tables are based on an agent occupancy of 100%, or 1 Erlang. Throughout the testing phase, all ACD agents are either on an ACD call or in a post-call wrap-up state (Work Timer). To maintain 100% agent occupancy, as the number of agents and calls per hour increase, the handling time in seconds also increases. This increase in handling time decreases the number of interactions able to be handled per agent per hour. The following calculation was used to determine the maximum allowed handle time and interactions per hour limit per agent:

$$Handle\ Time\ (secs) = \frac{3600}{\frac{Conversations\ per\ Hour}{Number\ of\ Agents}}$$

BLENDED MEDIA CAPACITY

The following table displays verified capacity data for up to 1200 employees with a maximum of 3600 agents handling blended inbound voice, email, chat, and SMS interactions.

The blended media results displayed in the following table were verified by blending the maximum of each media type.

Each media has a maximum number of interactions that can be handled per hour by a single Enterprise Server:

When using Contact Center Messenger Chat

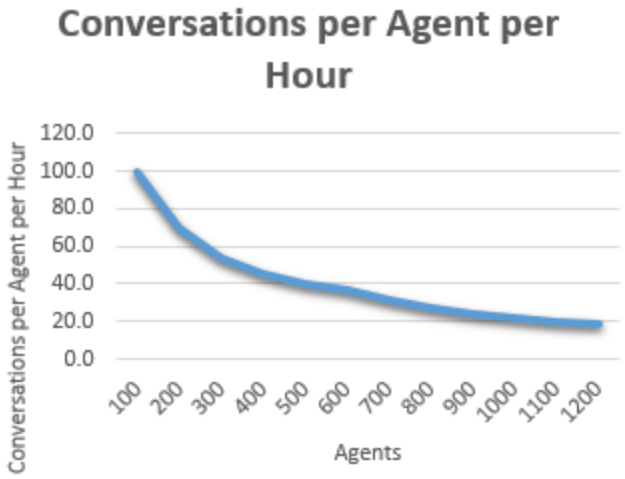
- 3600 emails per hour
- 1200 chats per hour
- 1200 SMS per hour
- 1200 open media interactions per hour
- 17000 inbound voice calls per hour

When using MiContact Center Business Chat

- 3600 emails per hour
- 1200 chats/SMS per hour
- 1200 open media interactions per hour
- 17000 inbound voice calls per hour

Table 9: Blended Media Capacity

AGENTS[1]	INTERACTIONS PER AGENT PER HOUR	TOTAL INTERACTIONS PER HOUR
100	100.0	10000
200	70.0	14000
300	53.3	16000
400	45.0	18000
500	40.0	20000
600	38.3	23000[2]
700	32.8	23000[2]
800	28.7	23000[2]
900	25.5	23000[2]
1000	23.0	23000[2]
1100	20.9	23000[2]
1200	19.1	23000[2]



[1]A single MiContact Center Business can handle a maximum of 1200 configured and/or active agents.

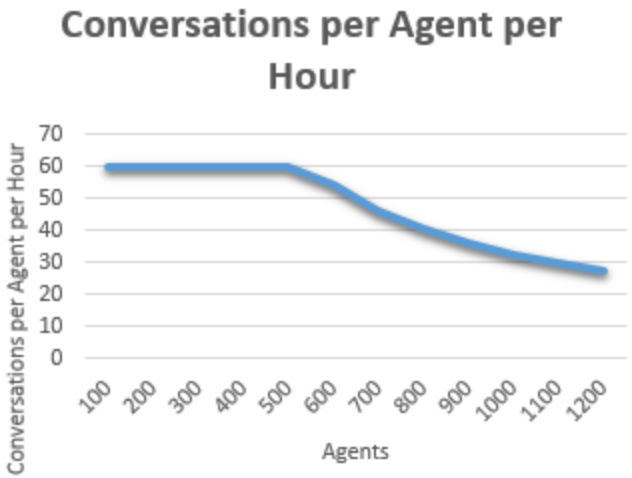
[2]A single MiContact Center Business can handle a maximum of 23000 interactions per hour across all media types.

VOICE MEDIA CAPACITY

The following table displays verified capacity data for up to 1200 active contact center agents handling only inbound voice interactions, when the interactions are routed directly to voice queues.

Table 10: Voice Media Capacity without IVR Routing

AGENTS[1]	INTERACTIONS PER AGENT PER HOUR	TOTAL INTERACTIONS PER HOUR
100	60.0	6000
200	60.0	12000
300	60.0	18000
400	60.0	24000
500	60.0	30000
600	54.0	32400[2]
700	46.3	32400[2]
800	40.5	32400[2]
900	36.0	32400[2]
1000	32.4	32400[2]
1100	29.5	32400[2]
1200	27.0	32400[2]



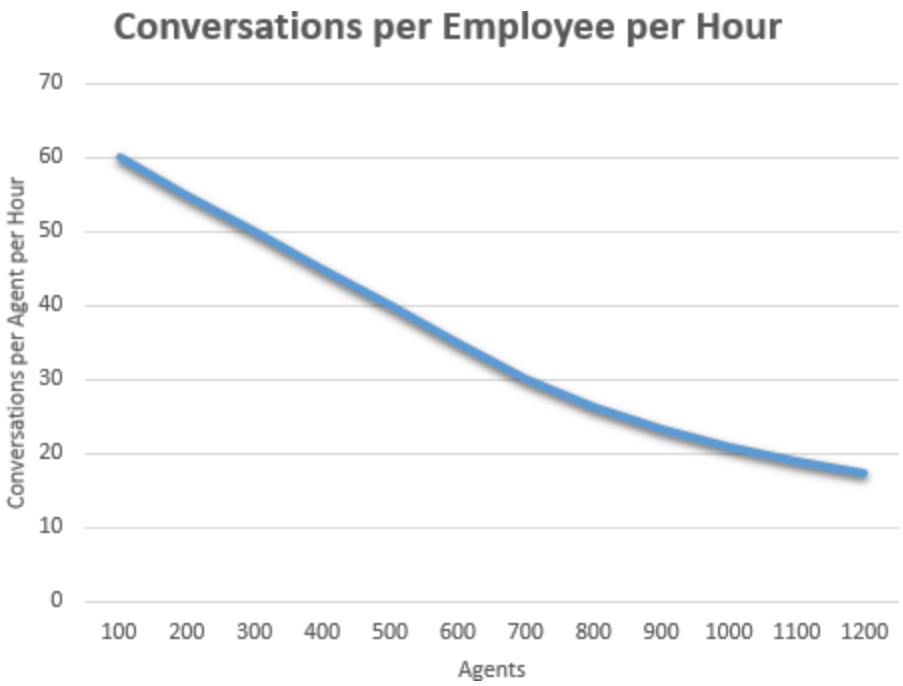
[1]A single MiContact Center Business Enterprise can handle a maximum of 1200 configured and/or active agents.

[2]A single MiContact Center Business Enterprise can handle a maximum of 32400 voice interactions per hour when routed without IVR Routing.

The following table displays verified capacity data for up to 1200 active contact center agents handling inbound voice interactions, when the interactions are routed through IVR Routing to voice queues.

Table 11: Voice Media Capacity with IVR Routing

AGENTS[1]	INTERACTIONS PER AGENT PER HOUR	TOTAL INTERACTIONS PER HOUR
100	60.0	6000
200	60.0	12000
300	60.0	18000
400	47.5	19000
500	40.0	20000
600	35.0	21000[2]
700	30.0	21000[2]
800	26.3	21000[2]
900	23.3	21000[2]
1000	21.0	21000[2]
1100	19.1	21000[2]
1200	17.5	21000[2]



[1]A single MiContact Center Business can handle a maximum of 1200 configured and/or active agents.

[2]A single MiContact Center Business can handle a maximum of 21000 voice interactions per hour when routed through IVR Routing.

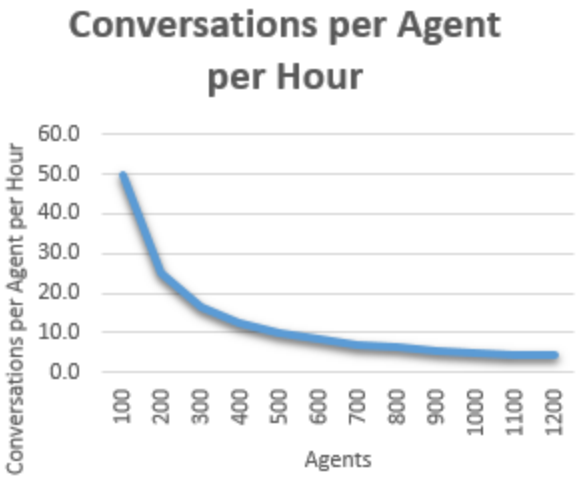
EMAIL MEDIA CAPACITY

The following table displays verified capacity data for up to 1200 active contact center agents handling only email interactions.

NOTE: A maximum of 1000 emails per hour can be processed by a single email server connection. Capacity can be increased by utilizing multiple connections to the email provider. A single Enterprise Server can handle a maximum of 5000 email interactions per hour. Creating an email server connection is outlined in the *Multimedia Contact Center Installation and Deployment Guide*.

Table 12: Email Media Capacity

AGENTS[1]	INTERACTIONS PER AGENT PER HOUR	TOTAL INTERACTIONS PER HOUR[2]
100	50.0	5000
200	25.0	5000
300	16.7	5000
400	12.5	5000
500	10.0	5000
600	8.3	5000
700	7.1	5000
800	6.3	5000
900	5.6	5000
1000	5.0	5000
1100	4.5	5000
1200	4.2	5000



[1]A single MiContact Center Business can handle a maximum of 1200 configured and/or active agents.

[2]A single MiContact Center Business can handle a maximum of 5000 emails per hour regardless of the number of active agents.

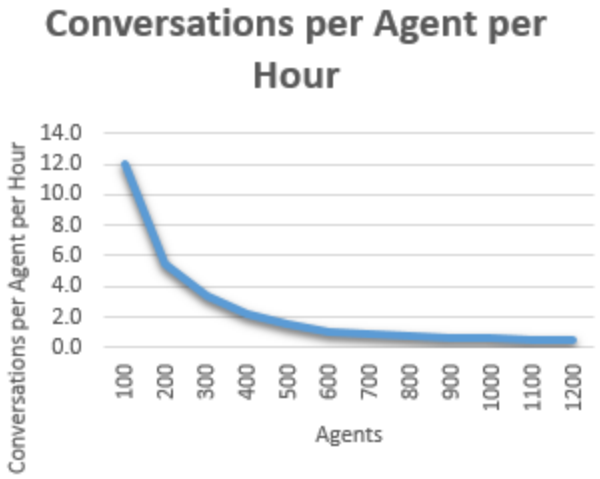
CHAT/SMS MEDIA CAPACITY

The following table displays verified capacity data for up to 1200 active contact center agents handling only chat/SMS interactions.

NOTE: The maximum number of concurrent active chat and SMS sessions combined is 350.

Table 13: Chat/SMS Media Capacity

AGENTS[1]	INTERACTIONS PER AGENT PER HOUR	TOTAL INTERACTIONS PER HOUR[2]
100	12.0	1200
200	6.0	1200
300	4.0	1200
400	3.0	1200
500	2.4	1200
600	2.0	1200
700	1.7	1200
800	1.5	1200
900	1.3	1200
1000	1.2	1200
1100	1.1	1200
1200	1.0	1200



[1]A single MiContact Center Business can handle a maximum of 1200 configured and/or active agents.

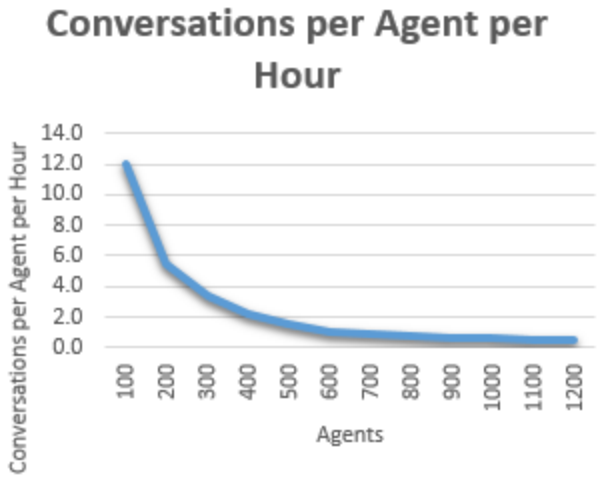
[2]A single MiContact Center Business can handle a maximum of 1200 chats/SMS, combined, per hour regardless of the number of active agents.

OPEN MEDIA CAPACITY

The following table displays verified capacity data for up to 1200 active contact center agents handling only open media interactions.

Table 14: Open Media Capacity

AGENTS[1]	INTERACTIONS PER AGENT PER HOUR	TOTAL INTERACTIONS PER HOUR[2]
100	12.0	1200
200	6.0	1200
300	4.0	1200
400	3.0	1200
500	2.4	1200
600	2.0	1200
700	1.7	1200
800	1.5	1200
900	1.3	1200
1000	1.2	1200
1100	1.1	1200
1200	1.0	1200



[1]A single MiContact Center Business can handle a maximum of 1200 configured and/or active agents.

[2]A single MiContact Center Business can handle a maximum of 1200 open media interactions, per hour regardless of the number of active agents.

VERIFICATION ENVIRONMENT

Performance tests were conducted against the following industry standard and Mitel best practice conformant platform:

- MiVoice Business 9.0, 8.0 SP3, 7.2 SP1
- VMware ESXi 6.0 , 6.5, 6.7
- Windows Server 2019, 2016, 2012R2, 2012
- Microsoft SQL Server 2017, 2016, 2014
- HP Proliant DL360 Generation 9
  - 2 Intel Xeon E5-2640 v3 @ 2.60 GHz Processors
  - 196 GB Non-ECC Memory
  - HP 3Par Storage Array, 10K SAS Disks in RAID6, Fiber Channel host connectivity

The verification environment components are described in the following table.

Table 15: Verification environment components

MEDIA TYPE	QUEUEING GATEWAYS	QUEUES	IVR PORTS	AGENT CONTROLLERS	AGENTS	AGENT GROUPS	MAILBOXES
Voice	4	60 (15 on each queueing gateway)	240 (60 on each queueing gateway)	1	1200	60 Each agent in 5 groups, each group has 100 agents	n/a
Email	n/a	12	n/a	n/a	1200	12 Each agent in one group, each group has 100 agents	2

Table 15: Verification environment components (continued)

MEDIA TYPE	QUEUEING GATEWAYS	QUEUES	IVR PORTS	AGENT CONTROLLERS	AGENTS	AGENT GROUPS	MAILBOXES
Chat	n/a	12	n/a	n/a	1200	12 Each agent in one group, each group has 100 agents	n/a
SMS	n/a	12	n/a	n/a	1200	12 Each agent in one group, each group has 100 agents	n/a
Open Media	n/a	12	n/a	n/a	1200	12 Each agent in one group, each group has 100 agents	n/a

The verification desktop configuration is as follows:

- Each client desktop is connected to the MiContact Center Business Server and represents an Ignite (DESKTOP/WEB) client that is monitoring the agent ID, the underlying extension, the queues for which the agent answers, and the current call ID (when used with IVR this enables the IVR variables to be supplied to the toaster). Clients are connected to the MiContact Center Business Server continuously (24/7) and agents do not change shifts. Agents are located on the same network as the Enterprise Server.

Verification topology for voice media capacity without IVR Routing

The following figure demonstrates the verification topology and call flow description for voice capacity testing using MiVoice Business without IVR Routing.

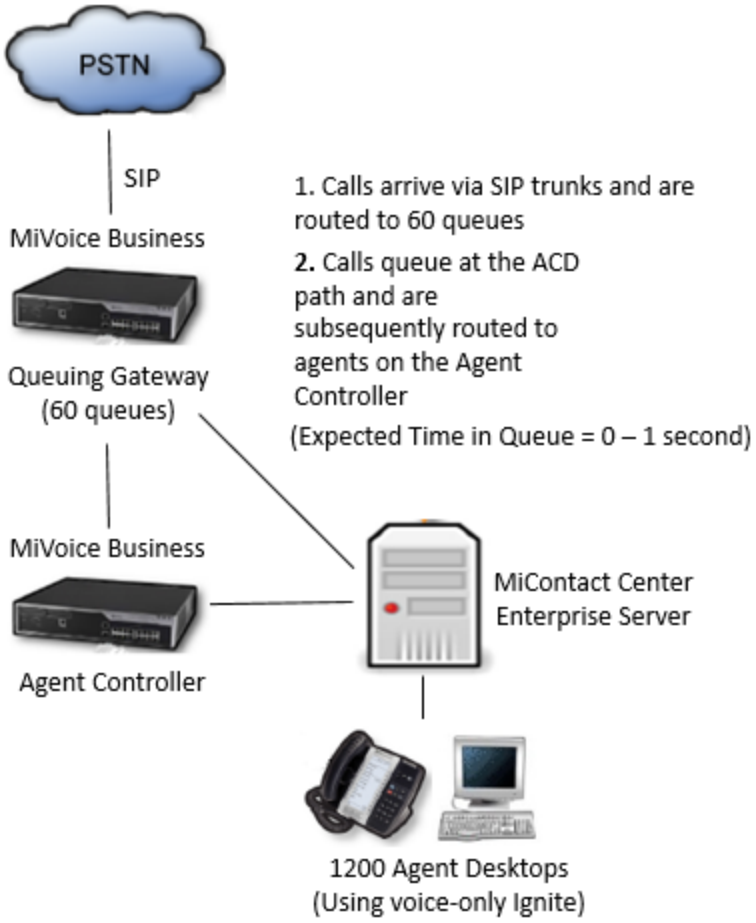


Figure 8: Verification environment and call flow – with MiVoice Business routing (no IVR)

Verification topology for voice media capacity with IVR Routing

The following figures demonstrate the verification topology for voice capacity testing and call flow description using IVR Routing.

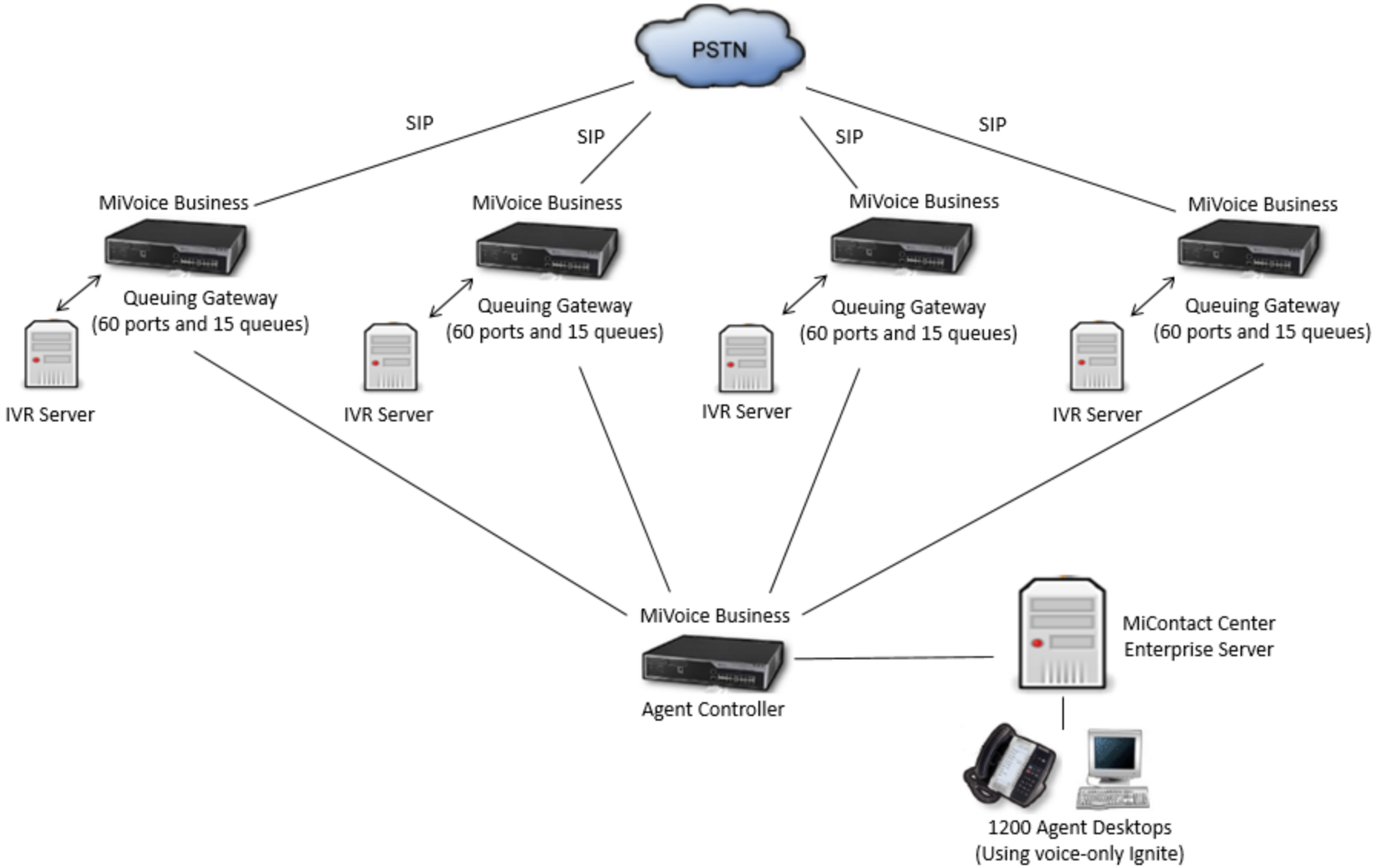


Figure 9: Verification environment with IVR Routing

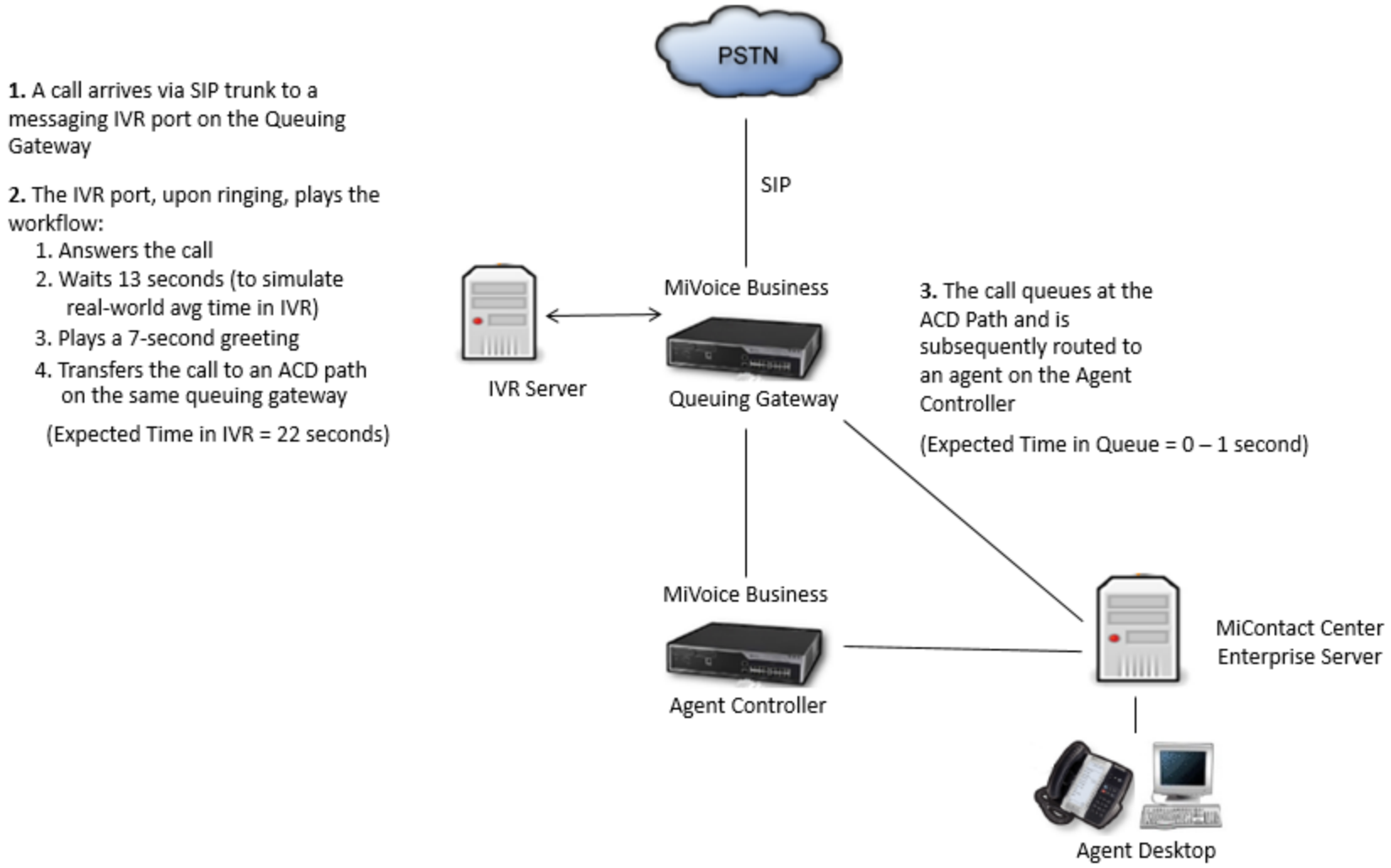


Figure 10: Verification environment call flow with IVR Routing

INTERACTION CHARACTERIZATION

An interaction is a completed interaction between a contact center agent and a customer. A single interaction for each media is characterized as:

- Voice – inbound only, where handling time is relative to the total interactions per hour when running at 90% agent occupancy, and including an 11-second work timer period
- Email – one email, with no attachments, with an average handling time not exceeding one hour
- Chat/SMS – a total of 36 messages (16 inbound and 16 outbound), each containing a line of text (180 characters), for a session lasting 8 minutes in length

PASS CONDITIONS

A performance test is considered passed if the MiContact Center Business Server, while under load for a minimum of 72 hours, met the following conditions:

- The application experienced no service failures, crashes, or high processor and memory usage
- Client applications were able to log in and begin service activities in less than 30 seconds
- Real-time statistics experienced no longer than a 3 second latency
- Memory usage remained below 85% during the test period
- Average CPU usage did not exceed 75% on the Enterprise Server during the test period

Factors excluded from performance testing that could affect system stability and overall performance are:

- Network latency – All testing performed using virtual switches on a single VMware ESXi host
- Network jitter and packet loss
- Additional co-located applications including anti-virus scanners
- Network bandwidth

MAXIMUM CAPACITY CONDITIONS

When running at maximum capacity you may experience the following system limitations:

- Real-time report filing is affected by high call volume. We recommend disabling real-time data filing and running reports for the previous day only. For current day reporting, you should manually summarize your data before running a report. Report data is available after 24 hours if you do not manually summarize your data.
    - The number of devices, particularly queues and agents, to which calls are routed affects real-time filing of statistics. In general, the greater the number of devices, the less reliable real-time filing becomes. The volume of messages (inserts and updates) is restricted by the SQL Writer Service capability. When the number of SQL statements becomes excessive, the SQL Writer Service cannot keep up. This results in an accumulation of messages in the MSMQ which causes the MiContact Center Business Server to stop writing statistics for the day. The system will start writing statistics again at the beginning of the next day.
- Some lagging of real-time statistics may occur, for example, it may take up to 3 seconds for presence changes to be reflected in real-time monitors and applications.
- Contact Center Client and Ignite can take in excess of 60 seconds to launch on the client desktop.
- The IVR Callback feature is not supported when running at maximum capacity.
- There will be a significant delay to update all clients after configuration changes are made in YourSite Explorer.
- Administrative actions in YourSite Explorer, particularly those involving mass selection, will take in excess of 30 seconds to save.
- Implementing employee licensing in YourSite Explorer for >1000 extensions, using multi-selection, will take a long time to complete. We recommend using .csv import whenever possible to streamline the process.
- The MiContact Center Business Server can download 1000 emails per hour per mail server connection. If the incoming rate of email exceeds this capability, you will experience delays in queueing.
- For MiContact Center Business Chat, if you are running >100 concurrent chat sessions, the chat page can take in excess of 5 seconds to load.
- For MiContact Center Business Chat, reverse proxy was not implemented in our verification environment. If you use reverse proxy for chat, your maximum chat capacity will be reduced.

To meet the performance level required for maximum capacity, with stability and scale, the following recommendations must be adhered to:

- Disable Lifecycle reporting if you will exceed 5000 interactions per hour
- Disable Multimedia Workflow Condition reporting if total multimedia interactions across all media types exceed 2400 interactions per hour
- If your contact center is 24/7, set maintenance to run at the least busy period of the day
- Do not collocate Microsoft SQL Server with the MiContact Center Business Server

CONTACT CENTER MESSENGER CHAT PERFORMANCE CONSIDERATIONS

When customers access the chat overlay from public website, there are certain factors that determine how quickly or slowly the chat overlay loads.

These factors include:

- The distance between the customer's location and the nearest AWS region.
- How busy Amazon AWS cloud is at the time of the request.
- The quality of the customer's Internet connection at the time of the request.

To improve user experience, it is recommended that you add a chat pre-route message in CC-admin so that a message to the customer is displayed as soon as possible.

IVR ROUTING SCALABILITY

IVR Routing scales vertically, through the use of ports, to handle increased call traffic. In addition, IVR Routing can scale horizontally across multiple servers to provide server redundancy and increase call traffic capacity.

The following table provides a general overview of the number of IVR Routing ports and IVR Routing servers required to achieve a specific call per hour rate and the number of ports required to service inbound calls based on the average time spent in IVR.

Table 16: IVR Routing scalability parameters

Calls Per Hour	Time in IVR (s)	Ports Required	IVR Server(s) Required	Time in IVR (s)	Ports Required	IVR Server(s) Required	Time in IVR (s)	Ports Required	IVR Server(s) Required	Time in IVR (s)	Ports Required	IVR Server(s) Required
3000	60	50	1	90	75	1	120	100	1	180	150	2
8700	60	145	2	90	218	3	120	290	3	180	435	5
14000	60	234	3	90	350	4	120	467	5	180	700	7
18200	60	304	4	90	455	5	120	607	7	180	910	10
20700	60	345	4	90	518	6	120	690	7	180	1035	11
21000	60	350	4	90	525	6	120	700	7	180	1050	11

A single IVR Routing server can handle a maximum of:

- 10000 calls per hour
- 120 IVR Routing ports (of all types)

A single enterprise environment of any number of IVR Routing ports and any number of IVR Routing servers can handle a maximum of 21000 calls per hour.

Several factors can impact the number of IVR Routing ports that are required and should be considered when performing an IVR Routing port sizing estimate:

- Number of calls per hour
- Duration calls spend in workflows before being transferred
- Diversity of workflows across all business lines and IVR Routing configurations
- Use of long workflows, such as those incorporating self-service functionality
- Additional features being leveraged that require specific port types, for example:
  - Outbound calls, such as automated callbacks and power dialing
  - Updated Position in Queue (UPiQ) messaging
  - In queue Recorded Announcement Device (RAD) messages

A basic IVR that contains, for example, simple messaging, time of day or holiday routing, with ANI and DNIS conditions has been verified to perform with 120 IVR Routing ports at 21000 calls per hour. However, performance will be impacted, when using 120 IVR ports per server, in an environment with a more advanced IVR Routing configuration, for example one that contains several menus, collected digits, and multiple subroutines. Systems that require a more sophisticated level of IVR Routing should engineer their site with 100 IVR Routing port maximums running not more than 10000 busy-hour calls.

IVR Port Sizing Wizard

The IVR Port Sizing Wizard is a tool that helps you determine the number of IVR ports and servers you require based on your contact center configuration and the IVR functionality you want to access. The IVR Port Sizing Wizard is described in and can be accessed from this Knowledge Base article: http://micc.mitel.com/kb/KnowledgebaseArticle51487.aspx. We recommend using Internet Explorer as your browser when accessing the wizard. See the following figure for an example of the IVR Port Sizing Wizard user interface.

Based on engineering guidelines developed by Mitel and using the answers you provide to a series of questions, the wizard creates a summary report of a suggested configuration that is tailored to your contact center requirements. The report includes the choices you made during the process and suggested totals for messaging ports, callback ports, UPiQ ports, RAD ports, All ports, and servers.

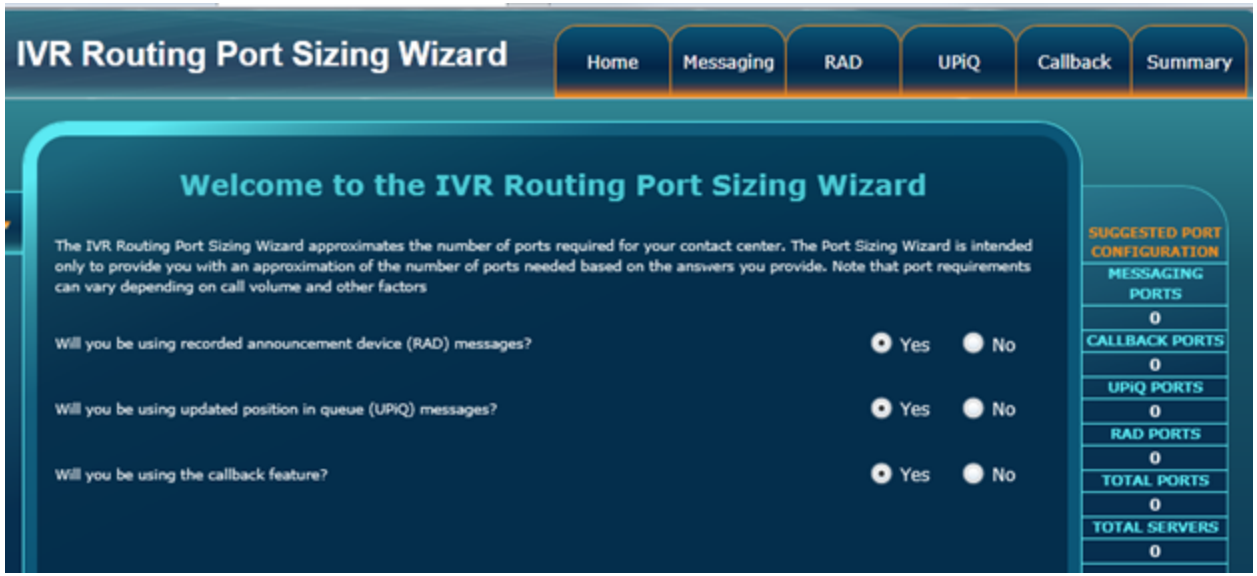


Figure 11: IVR Port Sizing Wizard

HIGH AVAILABILITY AND DISASTER RECOVERY PERFORMANCE AND SCALABILITY

Note that more complex systems running at higher traffic rates take longer to fail over.

Performance runs were carried out in the Mitel MiContact Center Business. The following numbers are provided as a reference.

The MiContact Center Business system being tested consisted of:

- A primary server (Virtual) running the Neverfail Continuity Engine protecting MiContact Center Business, MiContact Center Enterprise Software, and co-located SQL server.
- A secondary server (Virtual) running the Neverfail Continuity Engine protecting MiContact Center Business, MiContact Center Enterprise Software, and co-located SQL server.
- Four remote IVRs, with a total of 120 ports each. The remote IVRs are not protected by Neverfail.

Under test, there were 5000 voice interactions, 3600 email interactions, and 1200 chat sessions generated per hour.

A controlled switchover from the primary to the secondary MiContact Center Business took an average of 8 minutes and 30 seconds for the system to accept all media types and to begin to process the backlog of media that arrived during the switchover.

NOTE: The duration of 8 minutes and 30 seconds is the average failover time, but it is observed that the failover time ranges between 6 minutes and 30 seconds to 15 minutes depending on the amount of data accrued before the failover.

A failover from the primary to the secondary MiContact Center Business takes the amount of time required to recover from a controlled switchover, plus the amount time configured in the Neverfail Advanced Management Client to detect that a failover is required. This can be configured, see the KB article for details.

While every effort has been made to ensure the highest level of uptime for our customers, exact failover times depend on several variables such as, number of agents and devices configured in MiContact Center Business, bandwidth, and so on. Failover times may vary between customers. Mitel does not guarantee precise failover times or 'four nines' (99.99%) uptime for digital media and 'five nines' (99.999%) uptime for the voice.

HIGH AVAILABILITY AND DISASTER RECOVERY VERIFICATION ENVIRONMENT

Performance tests were conducted against the following industry standards and Mitel best practice conformant platforms:

- MiVoice Business 9.0 SP3, 8.0 SP3, 7.2 SP1
- VMware ESXi 6.0 , 6.5, 6.7
- Windows Server 2019, 2016, 2012R2, 2012
- Microsoft SQL Server 2017, 2016, 2014
- HP Proliant DL360 Generation 9
  - 2 Intel Xeon E5-2640 v3 @ 2.60 GHz Processors
  - 196 GB Non-ECC Memory
  - HP 3Par Storage Array, 10K SAS Disks in RAID6, Fiber Channel host connectivity

The hardware specifications are described in the following table:

Table 17: Hardware specifications

HARDWARE	MiCC BUSINESS	NEVERFAIL ITCE VM	IVR GATEWAYS
VMware vCPU	8 vCPU	4 vCPU	4 vCPU
RAM	32 GB	16 GB	8 GB
NIC	3	1	1
Hard disk drive	2x 80 GB	1x 60 GB	1x 60 GB

The verification environment components are described in the following table:

Table 18: Verification environment components

MEDIA TYPE	QUEUEING GATEWAYS	QUEUES	IVR PORTS	AGENT CONTROLLERS	AGENTS	AGENT GROUPS	MAILBOXES
Voice	4	48	480	1	1200	12	-
Email	-	1	-	-	1200	1	1
Chat	-	1	-	-	1200	1	-
SMS	-	1	-	-	1200	1	-
Open Media	-	1	-	-	1200	1	-

HIGH AVAILABILITY AND DISASTER RECOVERY VERIFICATION TOPOLOGY FOR VOICE MEDIA CAPACITY WITH OR WITHOUT IVR ROUTING

The following figure demonstrates the verification topology and call flow description for voice capacity testing using MiContact Center Business with or without IVR Routing.

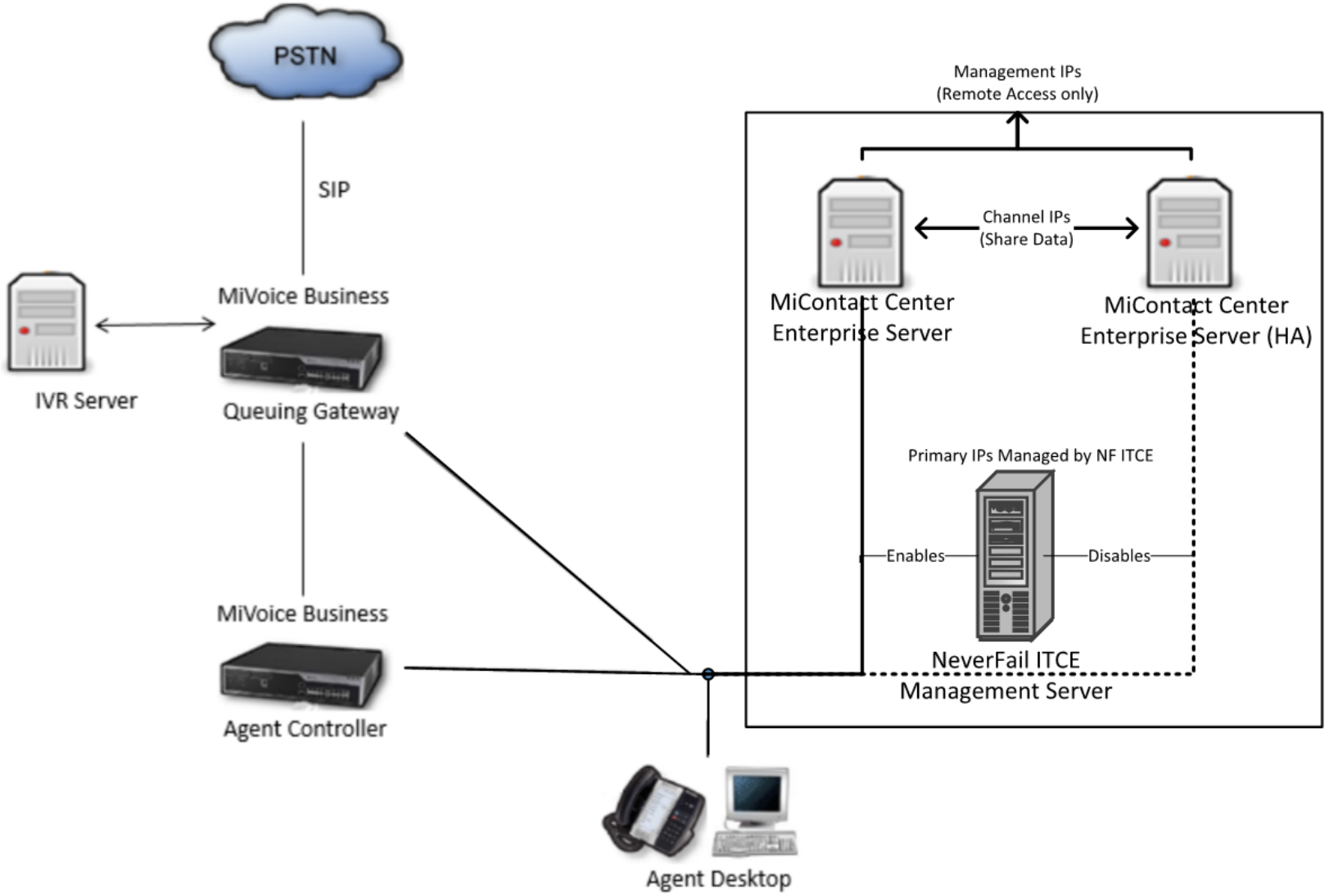


Figure 12: HA verification topology for voice media capacity with or without IVR routing

BANDWIDTH AND STORAGE REQUIREMENTS

This section describes requirements and considerations for bandwidth and storage when deploying a MiContact Center Business Server or MiContact Center Business client applications.

DISK SPACE REQUIREMENTS

To successfully deploy the Enterprise Server and client desktop applications, you must ensure adequate disk space is available for the software installation and for the daily operation of all applications and services. This section describes the initial disk space requirements and provides guidance for determining your data growth over time.

Table 19 outlines the disk space requirements for installing the client applications and the Enterprise Server software.

Table 19: Disk space requirements for software installation

	MINIMUM REQUIRED INITIAL DISK SPACE	RECOMMENDED INITIAL DISK SPACE
Enterprise Server	60 GB	200 GB
Client Applications	2738 MB (2.8 GB)	5 GB

NOTE: A warning is displayed if the disk has less than 60GB of free space.

FILESYSTEM GROWTH

As data is collected and your contact center goes into production operation, data growth of the filesystem must be considered. Filesystem growth depends heavily on the amount of traffic your contact center receives and the size and complexity of your configuration.

Based on the previously described Small, Medium, and Large server sizing, the following reference configurations can be used to help calculate your SQL database growth and filesystem growth (with and without Multimedia Contact Center).

To create accurate estimates, it is important to monitor and measure data growth at the beginning of your implementation. The information provided in Table 20 and Table 21 will assist you in creating a rough estimate for sizing your storage solution by first determining, based on feature usage and frequency, in which server size category you belong.

Table 20: Reference configurations for data growth sizing when using MiContact Center Business Chat

	SMALL	MEDIUM	LARGE
Operational Information			
Inbound calls per hour	750	5000	17000
Operation days per week	7	7	7
Inbound emails per hour	-	-	3600
Inbound chats/SMS per hour	-	-	1200
Concurrent chats/SMS	-	-	350
Inbound Open Media messages per hour	-	-	1200
Device Information			
Total agents	25	700	1200
Total extensions	25	700	1200
Total queues	25	125	150

Table 21: Reference configurations for data growth sizing using Contact Center Messenger Chat

	SMALL	MEDIUM	LARGE
Operational Information			
Inbound calls per hour	750	5000	17000

Table 21: Reference configurations for data growth sizing using Contact Center Messenger Chat (continued)

	SMALL	MEDIUM	LARGE
Operation days per week	7	7	7
Inbound emails per hour	-	-	3600
Inbound chats per hour	-	-	1200
Concurrent chats	-	-	1000
Inbound SMS per hour			1200
Concurrent SMS			350
Inbound Open Media messages per hour	-	-	1200
Device Information			
Total agents	25	700	1200
Total extensions	25	700	1200
Total queues	25	125	150

SQL database

The MiContact Center Business implementation relies on the following two databases for historical data storage, reporting, and configuration:

- CCMData - responsible for historical reporting data and configuration
- CCMStatisticalData - responsible for detailed lifecycle reporting data

The following tables outline the approximate data growth of these databases in relation to the reference server sizes. SQL Express lifetime indicates the amount of time a single SQL Express database will last before reaching the storage limit of 10 GB. The data projections assume 5 days per week, 21 days per month, and 251 days per year.

NOTE: Database growth projections for Large servers do not include information for CCMStatisticalData, as lifecycle reporting is not supported for Large server environments.

Table 22: Database growth projections for a Small server

DATABASE	MB PER DAY	MB PER WEEK	MB PER MONTH	MB PER YEAR	SQL EXPRESS LIFETIME (MONTHS)
CCMData	100	500	2100	25100	4.76
CCMStatistical Data	150	749	3148	37631	3.18

Table 23: Database growth projections for a Medium server

DATABASE	MB PER DAY	MB PER WEEK	MB PER MONTH	MB PER YEAR	SQL EXPRESS LIFETIME (MONTHS)
CCMData	667	3335	14007	167417	0.71
CCMStatistical Data	1000	5000	21000	251000	0.48

Table 24: Database growth projections for a Large server

DATABASE	MB PER DAY	MB PER WEEK	MB PER MONTH	MB PER YEAR	SQL EXPRESS LIFETIME (MONTHS)
CCMData	1786	8930	37506	448286	0.27

* Lifecycle Reporting was not enabled.

In customer environments running Multimedia Contact Center, three new databases are created: CCMRouting, CCMRuntimeServices, and CCMwa. These databases are used for message tracking and fault recovery and must be housed on a local copy of SQL Express. These databases are self-maintaining and will automatically purge data when necessary to avoid exceeding the 10 GB limit imposed by SQL Express.

NOTE:

- The CCMData and CCMStatistical databases can optionally be stored in a remote SQL instance.
- Multimedia Contact Center requires a local instance of SQL Express on the Enterprise Server for its databases. If you are using a remote SQL Server you must have an instance of SQL Server Express on the Enterprise Server.
- The local CCMRouting database on the MiCC server can grow by as much as 3GB/day at the maximum supported traffic rates. There are configuration options available to mitigate this growth if required.

Multimedia SearchStorage

For implementations that use Multimedia Contact Center, additional consideration must be given to the storage and archiving of multimedia messages and their attachments. If your business relies heavily on attached items for multimedia interactions, you will need to carefully monitor and adjust your calculations on data growth accordingly.

The recommendations in Table 25 assume an average message size of 2 MB, 21 working days per month, and 251 working days per year. The information in the data columns represents the data storage requirements on a daily, monthly, and yearly basis.

Table 25: SearchStorage requirements

CONFIGURATION SIZE	VOLUME OF TRANSACTIONS PER DAY	DATA PER DAY	DATA PER MONTH	DATA PER YEAR
Small	750	1500 MB	31.5 GB	376.5 GB
Medium	3000	6 GB	126 GB	1.5 TB
Large	12000	24 GB	504 GB	6 TB

NETWORK CONNECTIVITY REQUIREMENTS

Table 26 details the connections required for different server and client roles to ensure data is being sent and received correctly. These are the minimum recommended requirements. Your individual network connectivity requirements may exceed those outlined here depending on your overall contact center traffic and use of features and applications.

Table 26: Network connectivity requirements

SERVER OR CLIENT ROLE	REQUIRED NETWORK CONNECTION
Enterprise Server	100 Mbps network connection speed is the minimum requirement
Remote Server	25 Mbps download connection speed and 10 Mbps upload connection speed are the minimum requirements for data collection only **NOTE:** The connection speed between a local MiVoice Business platform and a remote server must be a minimum of 10 Mbps
Client	2 Mbps download connection speed and 1 Mbps upload connection speed are the minimum requirements

NOTE: For a full list of ports required for MiContact Center Business ports, see http://micc.mitel.com/kb/KnowledgebaseArticle51887.aspx.

MICONTACT CENTER BUSINESS BANDWIDTH REQUIREMENTS

The following section outlines the bandwidth requirements and recommendations for the MiContact Center Business Server and MiContact Center Business client applications.

MiContact Center Business Server

The MiContact Center Business Server requires available bandwidth to service client connectivity, in addition to servicing web requests for historical reporting, and collecting data from telephone and multimedia platforms.

General recommendations are to allow for at least 2 Mbps available throughput for each agent using client applications. For example, a contact center with 100 connected active agents would require an available 200 Mbps network throughput.

Each implementation of MiContact Center Business will be unique. We strongly recommend carefully monitoring and measuring the network usage of your MiContact Center Business server during implementation and testing to ensure adequate network performance. Administrators should be proactive and monitor usage through production operation and during expansion, to ensure appropriate network performance.

Client applications

For client machines, it is recommended that machines have a 2 Mbps connection to support typical agent desktop PC usage and MiContact Center Business application usage.

Table 27 details the average expected bandwidth use of the Ignite (DESKTOP) client application and Ignite (WEB). Peak usage will occur when agents launch applications or, in the case of Ignite, when downloading attachments. This table will be expanded to include other Client Component Pack applications as more statistics and measurements become available.

Table 27: Average expected client application bandwidth usage per second

APPLICATION MEASUREMENT	MEASUREMENT STATISTIC	UPLOAD (Mbps)	DOWNLOAD (Mbps)	TOTAL (UPLOAD & DOWNLOAD) (Mbps)
Ignite (WEB)	Peak Per Second	0.12	1.22	1.25
	Average Per Second	0.01	0.01	0.02
Ignite (DESKTOP)	Peak Per Second	1.78	1.09	2.85
	Average Per Second	0.10	0.12	0.22

OTHER CONSIDERATIONS

In determining the requirements for your MiContact Center Business, you may need to consider the following:

- Translated languages and supported operating systems
- Synchronized time settings in MiContact Center Business and MiVoice Analytics
- Backing up data

TRANSLATED LANGUAGES AND SUPPORTED OPERATING SYSTEMS

Table 28 details the languages MiContact Center Business and MiVoice Analytics applications are translated to and the corresponding operating systems within which the translated applications are supported.

Table 28: Translated MiContact Center Business and MiVoice Analytics applications and supported operating systems

APPLICATION	LANGUAGES	SUPPORTED OPERATING SYSTEMS
MiContact Center Business • Interactive Visual Queue • Interactive Contact Center • Contact Center PhoneSet Manager • Contact Center Softphone • Ignite • Contact Center Screen Pop • Flexible Reporting	English, Canadian French, European French, Latin American Spanish, European Spanish, Brazilian Portuguese, Dutch, Italian, German, Russian, Simplified Chinese, Norwegian, and Swedish	You must use an operating system that is translated to the same language as the version of MiContact Center Business you are using.
Business Reporter	English, Canadian French, European French, Latin American Spanish, European Spanish, Brazilian Portuguese, Dutch, Italian, German, Russian, Simplified Chinese, Norwegian, and Swedish	You must use an operating system that is translated to the same language as the version of MiVoice Analytics you are using.
Call Accounting	English, Canadian French, Latin American Spanish, Brazilian Portuguese, and Dutch	You must use an operating system that is translated to the same language as the version of MiVoice Analytics you are using.
IVR Routing	English, Canadian French, European French, Latin American Spanish, European Spanish, Brazilian Portuguese, Dutch, Italian, German, Russian, Simplified Chinese, Norwegian, and Swedish	You must use an operating system that is translated to the same language as the version of IVR Routing you are using.
Multimedia Contact Center	English, Canadian French, European French, Latin American Spanish, European Spanish, Brazilian Portuguese, Dutch, Italian, German, Russian, Simplified Chinese, Norwegian, and Swedish	You must use an operating system that is translated to the same language as the version of Multimedia Contact Center you are using.

Table 28: Translated MiContact Center Business and MiVoice Analytics applications and supported operating systems (continued)

APPLICATION	LANGUAGES	SUPPORTED OPERATING SYSTEMS
Salesforce.com Connector Workforce Scheduling Schedule Adherence Employee Portal	English only	Supported on English operating systems only.
Subscriber Services	English, Canadian French, Latin American Spanish, Brazilian Portuguese, and Dutch	You must use an operating system that is translated to the same language as the version of Subscriber Services you are using.

SYNCHRONIZED TIME SETTINGS IN MiCONTACT CENTER BUSINESS AND MIVOICE ANALYTICS

MiContact Center Business and MiVoice Analytics are reliant on synchronized time and clock settings for all component computers within the configuration to enable accurate time-based reporting and real-time statistics. The components of MiContact Center Business and MiVoice Analytics (such as the Enterprise server, remote servers, and client desktops) and third-party elements (such as Microsoft SQL servers and virtual machine hosts) must have accurate time settings and must be synchronized with the same time server.

All MiVoice Business controllers within a cluster must use the same time zone in the **Date and Time** form of the MiVoice Business configuration. Localized time display for devices can then be configured using the **Network Zones** form.

CAUTION: Computers that do not have accurate time settings or are not time synchronized with other computers in the configuration may yield inaccurate data and cause functionality issues within MiContact Center Business and MiVoice Analytics applications.

BACKING UP DATA

We highly recommend backing up Enterprise Server data on a regular basis as a preventative measure in case of events that could cause loss of data and necessitate system restoration. The frequency of backups depends on how important the data is to your business, your Recovery Time Objective (RTO), and the Recovery Point Objective (RPO). Finding the balance between the importance of data, your RTO and RPO, and your enterprise backup and restoration strategy will strongly dictate how MiContact Center Business backup and restoration integrates into your overall disaster recovery strategy.

We strongly recommend storing backup files in a location outside of the Enterprise Server in order to maintain essential data in the case of a hardware failure or catastrophic event. Data can be stored automatically on a UNC share or a SAN storage system by specifying the appropriate directories through the MiContact Center Business installation.

As part of the nightly maintenance routine, an automatic backup is performed that gathers critical system files such as workflows, audio files, and a copy of the current configuration. This backup is compressed into a ZIP archive and stored in the backup directory. Backups are retained automatically for 30 days.

Within the nightly backup, the following information is retained:

- **YourSite Database configuration file** – This XML file contains the current configuration of your MiContact Center Business server. This file is produced by exporting the appropriate configuration tables from the MiContact Center BusinessCCMData database.
- **IVR Routing and Multimedia Contact Center files** – There files are required for the operation of IVR Routing, and Multimedia Contact Center, including audio files, callback requests, and workflows.
- **Reply Template Data** – These files contain the packaged responses for email and chat and agent signatures.

The following information is not included in the nightly backup, but should be backed up as part of your corporate disaster recovery strategy:

- **Raw data files** – These files contain all raw data from the media servers, including ACD and SMDR historical data, and a flat file multimedia repository for all media, excluding voice. The multimedia repository stores multimedia messages, attachments, and chat transcripts. These files are required for the restoration of historical reporting information and multimedia archiving.
- **SQL Server data files (CCMData and CCMStatisticalData)** – The data that is stored in the MDF and LDF files within the SQL Server is not automatically backed up, and should be included as part of your corporate database backup strategy.

The following is a list of folders and default locations for data that should be backed up as part of your corporate disaster recovery strategy, these folders can be customized during installation, and their location should be noted for backup and recovery.

- **Configuration backups** – This folder contains the nightly .zip backups of configuration data, workflow files, reply templates, and IVR Routing media files
  - **When upgraded from a pre-8.0 release:**
    <drive>:\Program Files (x86)\prairieFyre Software Inc\CCM\BackupFiles
  - **For new installations of 8.0 and above:**
    <drive>:\Program Files (x86)\Mitel\MiContact Center\BackupFiles

- **Raw data** – This folder stores all raw data from the media servers. Using this data you can re-summarize your raw data to restore historical reporting information. This folder also contains the Multimedia repository for all media, excluding voice
  - **When upgraded from a pre-8.0 release:**
    <drive>:\Program Files (x86)\prairieFyre Software Inc\CCM\DataDirectory
  - **For new installations of 8.0 and above:**
    <drive>:\Program Files (x86)\Mitel\MiContact Center\DataDirectory
- **Contact Us Customizations** – These files contain behavior and style customizations for the Contact Us fly out if deployed to your corporate website.
  - **When upgraded from a pre-8.0 release:**
    <drive>:\Program Files (x86)\prairieFyre Software Inc\CCM\WebSites\CCMWa\Scripts\Contact.config.js

    <drive>:\Program Files (x86)\prairieFyre Software Inc\CCM\WebSites\CCMWa\Content\ContactUs.css
  - **For new installations of 8.0 and above:**
    <drive>:\Program Files (x86)\Mitel\MiContact Center\WebSites\CCMWa\Scripts\ Contact.config.js

    <drive>:\Program Files (x86)\Mitel\MiContact Center\WebSites\CCMWa\ Content\ContactUs.css

For MiContact Center Business Chat, the following folders should be backed up:

- **Chat Request Customizations** – These files contain a series of JavaScript variables and properties used to customize the Chat request page, and should be backed up if utilizing any customizations for this page. This file can be located in a customizable location, and if stored elsewhere should be backed up from that alternate folder
  - **When upgraded from a pre-8.0 release:**
    <drive>:\Program Files (x86)\prairieFyre Software Inc\CCM\WebSites\CCMWa\Scripts\Chat.Config.DEFAULT.js
  - **For new installations of 8.0 and above:**
    <drive>:\Program Files (x86)\Mitel\MiContact Center\WebSites\CCMWa\Scripts\Chat.Config.DEFAULT.js
- **Agent and Supervisor Ignite (DESKTOP) Customizations** – These files contain a series of JavaScript variables and properties used to customize the Agent and Supervisor experience within Ignite, and should be backed up if utilizing any customizations for Ignite.
  - **When upgraded from a pre-8.0 release:**
    <drive>:\Program Files (x86)\prairieFyre Software Inc\CCM\WebSites\CCMWa\Scripts\Chat.ui.supervisor.config.js

    <drive>:\Program Files (x86)\prairieFyre Software Inc\CCM\WebSites\CCMWa\Scripts\Chat.ui.agent.config.js
  - **For new installations of 8.0 and above:**
    <drive>:\Program Files (x86)\Mitel\MiContact Center\WebSites\CCMWa\Scripts\Chat.ui.supervisor.config.js

    <drive>:\Program Files (x86)\Mitel\MiContact Center\WebSites\CCMWa\Scripts\Chat.ui.agent.config.js

NOTE: The Chat, Agent and Supervisor, and Contact Us customization files are determined by the system administrator and may not follow the conventions outlined above. The backup should be performed on the live, active configuration file. As a general rule, any file that you have customized for your multimedia deployment should be backed up to a safe location at regular intervals.

STATEMENT OF SUPPORT FOR WINDOWS UPDATES

We advise that you update your client/server Windows operating systems with the recommended security patches, hotfixes, and service packs in accordance with Microsoft best practices. You may install Windows Security Patches at any time and any issues pertaining to the installation of Windows Security Patches are covered under the standard terms of the Mitel support contract.

Mitel constantly tests and validates the MiContact Center Business and MiVoice Analytics (Business Reporter and Call Accounting) solutions against the latest versions of Microsoft operating systems that are released along with any security patches or service packs issued by Microsoft. This does not guarantee that future Microsoft patches or updates do not cause any problems; only that the risks are minimized. In the event of our encountering any issues, Mitel informs partners and customers using standard Technical Service Bulletin and InfoChannel “Recent news entries” processes and works promptly to resolve them.

LICENSING

Version 8.0 introduced a new licensing model with two MiContact Center Business licensing levels (Contact Center and Workgroup), MiVoice Analytics bundles, and standalone offerings for Multimedia Contact Center and IVR Routing.

The following section describes licensing packages and options for MiContact Center Business, MiVoice Analytics, Multimedia Contact Center, and IVR Routing.

STARTER PACKS

A starter pack serves as the base product upon which a site key is established and all software assurance contracts are tied. All new sites start with the selection of a starter pack.

The following starter packs are available:

- Contact Center Starter Pack
- Workgroup Starter Pack
- MiVoice Analytics Starter Pack
- MiVoice Analytics Starter Pack
- Contact Center Multimedia Starter Pack
- Contact Center IVR Starter Pack

The types of agents purchased must align with the starter pack. For example, if you own the Workgroup Starter Pack and want to purchase additional agents, they must be Workgroup Agents. You cannot mix Workgroup and Contact Center agents in the same environment.

Each starter pack includes one or two System Administrators, depending on the type of starter pack purchased. Advanced Supervisors are unlimited.

System Administrators have full access to all MiContact Center Business, MiVoice Analytics, Multimedia Contact Center, and IVR Routing software for the purposes of configuration and system administration.

Advanced Supervisors can access CCMWeb (reporting, user preferences, and help resources), Contact Center Client (real-time monitoring), Ignite (search for contacts, view statistics, view Interactions in queue), and YourSite Explorer (read-only access to the Enterprise section only). Advanced Supervisors' abilities are determined by their employee and security role settings (as configured in YourSite Explorer). An Advanced Supervisor can be configured for supervisory duties only or can be enabled to also work as an agent. If an Advanced Supervisor is associated to a configured extension, their telephone status are visible in extension monitors.

CONTACT CENTER AND WORKGROUP STARTER PACKS

Whether you choose the Contact Center or Workgroup Starter Pack depends primarily on the number of concurrent agents you require, the number of IVR ports needed to handle incoming traffic, and whether you require resiliency. Workgroup is geared toward smaller contact centers with fewer than 100 concurrent agents, requiring a maximum of 10 IVR ports, with no need for resiliency. Contact Center is the licensing level of choice for businesses with more than 100 concurrent agents, who want resiliency, and require more than 10 IVR ports. The inclusion of essential features in both starter packs and flexible add-on options ensure your business runs efficiently and effectively regardless of its size.

The Contact Center Starter Pack and the Workgroup Starter Pack both include MiVoice Analytics (in supported regions only). For more information, see "MiVoice Analytics Starter Pack" on page 115 and "MiVoice Analytics Starter Pack" on page 119.

NOTE: You cannot downgrade from Contact Center to Workgroup.

The following table provides a quick view of the primary differences between included and optional features in Workgroup and Contact Center licensing bundles.

Table 29: Feature and component comparison - Workgroup and Contact Center

FEATURE / COMPONENT	WORKGROUP	CONTACT CENTER
Workgroup Agent	Included	N/A
Contact Center Agent	N/A	Included
Multimedia Agent	Add-on option	Add-on option
Workforce Scheduling Agent	Add-on option	Add-on option
Outbound Agent	Add-on option	Add-on option
Interactive Visual Queue	Included	Included
Interactive Contact Center	Included	Included
Contact Center Screen Pop	Included	Included
Data provider queries	Included	Included
Microsoft CRM Connector	Included	Included
CTI Developer Toolkit Client	Included	Included
CTI Developer Toolkit Server	Included	Included
Salesforce.com Client and Salesforce.com Connector	Included	Included

Table 29: Feature and component comparison - Workgroup and Contact Center (continued)

FEATURE / COMPONENT	WORKGROUP	CONTACT CENTER
MiVoice Integration for Salesforce (requires a separate OIG server)	Included	Included
MiVoice Analytics (and MiVoice Analytics in supported regions)	Included	Included
MiVoice Analytics Client	Add-on option	Add-on option
Limited set of MiContact Center Business voice reports and Flexible Reporting	Included	N/A
All MiContact Center Business voice reports and Flexible Reporting	N/A	Included
MiContact Center Business Resiliency	N/A	Included
Network License	N/A	Included
MiCollab Client Deskphone/Softphone with Teleworker	Included	Included
MiVoice Call Recording Connector	Included	Included
Messaging and Routing	Add-on option (max 120 ports)	Included (max 240 ports)
Automatic Speech Recognition and Text to Speech (requires a Nuance server)	Add-on option (max 10 ports)	Add-on option

Contact Center Starter Pack

The following tables describe the features and components included in and available to (as add-on options) the Contact Center Starter Pack.

Table 30: Features and components included in the Contact Center Starter Pack

FEATURE / COMPONENT	DESCRIPTION
Contact Center Agents	Includes 5 concurrent Contact Center Agent licenses Additional Contact Center Agents can be purchased
Advanced Supervisors	Includes unlimited Advanced Supervisors
System Administrators	Includes two System Administrators Additional System Administrators can be purchased individually
Historical reporting	Enables you to create, print, and email historical reports for devices for a selected time period. Reports can be scheduled to be emailed or printed automatically
Real-time monitoring and reporting	Enables you to monitor devices in real time using Contact Center Client and Ignite Enables you to use historical data to forecast the number of agents required, by interval, to handle the predicted workload

Table 30: Features and components included in the Contact Center Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION

MiVoice Analytics
(and MiVoice Analytics in supported regions)
	Includes 50 MiVoice Analytics extensions
	MiVoice Analytics
	• Reporting on and monitoring of general business extensions and ring groups
	• Traffic Analysis
	  • Enables you to create unlimited reports on T1s and E1s, including call statistics for DTMF receivers, route lists, route plans, routes, and trunks
	MiVoice Analytics
	• Call costing
	  • Using detailed carrier reports, businesses can track the cost of incoming and outgoing calls and bill accordingly
	• Subscriber Services
	  • Using detailed subscriber reports, businesses can bill subscribers for the use of services provided and mark up or discount prices based on fixed rates or percentage rates

Chat capability	The MiCollab Client and Ignite integration provides enterprise presence and chat capabilities Contact Center Chat enables employees to chat with each other using Contact Center Client or Microsoft Skype for Business Chats initiated in Contact Center Client are exclusive of those initiated in MiCollab Client If you use Microsoft Skype for Business as an instant messaging client, Microsoft Skype for Business Server is required
MiContact Center Business Resiliency (provides ACD reporting and real time from a secondary controller)	Provides ACD reporting and real time views on a secondary controller in the event of an outage or failure on the primary controller

Table 30: Features and components included in the Contact Center Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
Network License	Provides access to a maximum of 99 sites/connection points If your cluster exceeds the 99 site recommendation, please contact Professional Services at micc_customdevelopment@mitel.com
Flexible Reporting	Enables you to create custom reports
Interactive Contact Center	Enables agents to control their availability and supervisors to control the availability of agents and ACD queues, as well as set business hours for auto opening and closing of queues A System Administrator is required to be able to configure business hours to automatically open and close queues
Interactive Contact Center Resiliency (supported by MiVoice Business resilient controller)	Enables interactive control of agents and queues on a secondary controller in the event of an outage or failure on the primary controller
Interactive Visual Queue	Enables supervisors and agents to identify calls within queues and manually prioritize the call's position in the queue Abandoned callers can be viewed by queue and called back with a right-click call back option

Table 30: Features and components included in the Contact Center Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
Ignite	Ignite is the primary agent desktop tool for handling voice interactions. In addition, agents can use Ignite to view and adjust their agent group presence, see the presence of other agents within their agent groups, access their agent handling statistics, and record and manage agent greetings We recommend integrating Ignite with MiCollab Client to enable advanced call handling functionality When Multimedia Contact Center Agents are owned, Ignite is also able to handle email, chat, and SMS interactions Ignite is available as a desktop or Web version, each offering a unique agent experience. See the *MiContact Center Business User Guide* and the *Multimedia Contact Center Installation and Deployment Guide* for details
MiCollab Client Deskphone/Softphone	Includes MiCollab Client Requires separate purchase of MiCollab Server Integrating MiCollab Client with Ignite offers advanced call handling functionality in addition to Enterprise presence (non-ACD) and extended ACD presence. The MiCollab Client and Ignite integration is fully supported with the desktop version of Ignite only
Contact Center PhoneSet Manager	Enables agents to use their desktop computers as IP-based phones, using a headset connected to a desk phone
MiContact Center Business Preview Dialer	Professional Services are required for implementation. Please contact micc_customdevelopment@mitel.com for more information

Table 30: Features and components included in the Contact Center Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
MiVoice Call Recording Connector	MiVoice Call Recording Connector provides start/stop recording control in Contact Center Client Links to call recordings are available in Lifecycle reports If you want to record calls from more than one telephone system using the MiVoice Call Recording Connector, you require one MiVoice Call Recording server per telephone system. You can optionally record calls from multiple telephone systems if you have multiple licenses for MiVoice Call Recording and point to all server IP addresses from YourSite Explorer Support for the MiVoice Call Recording Connector for MiContact Center Business Version 9.2 was verified using MiVoice Call Recording 9.2
CTI Developer Toolkit Client	Provides basic telephony functions (answer, hang up, transfer, and hold) and delivers caller information such as ANI, DNIS, Collected Digits, and call notes in real time as calls arrive The Computer Telephony Integration (CTI) Developer Toolkit is a programmable .NET C# Dynamic-link library (DLL) that can be used in any .NET (Release 4.5) application or website. It requires a skilled developer to implement The client-side DLL may be used to display information in a Customer Relationship Management (CRM) system, Microsoft Outlook, or custom applications
CTI Developer Toolkit Server	Provides the ability to relay custom third-party IVR data (for example, collected digits and custom query results) into MiContact Center Business, which then passes this data to the PhoneSet Manager toaster, Contact Center Screen Pop, Interactive Visual Queue monitor, and agent monitor card design, in addition to any custom client-side application
Contact Center Screen Pop	Works in conjunction with Contact Center PhoneSet Manager or Contact Center Softphone to launch applications and Web pages on ACD agent desktops when they receive calls

Table 30: Features and components included in the Contact Center Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
Data provider queries	Includes support for queries to SAP, Salesforce, Microsoft Dynamics CRM, Sugar CRM, and NetSuite (requires IVR)
Microsoft CRM Connector	Enables Contact Center Screen Pop / Screen Pop to provide Microsoft CRM-specific screen pop abilities Requires Microsoft CRM 2013, 2016, or Microsoft CRM Office 365
Salesforce.com Client and Salesforce.com Connector	Enables your contact center agents to perform all job functions through a single Salesforce user interface You require an account with Salesforce.com (Enterprise or Professional edition) and, optionally, IVR Routing, for Collect Caller Entered Digits **NOTE:** Support for the Salesforce.com Connector is being discontinued by Salesforce.com and is being replaced by the MiVoice Integration for Salesforce. Post-8.x, the Salesforce.com Connector will no longer be available and all new customers will be expected to use the MiVoice Integration for Salesforce instead. (see below)
MiVoice Integration for Salesforce	Includes 5 concurrent OIG Advanced Call Control User licenses for Salesforce Using an open CTI Toolkit from Salesforce, this web-based OIG connector replaces the desktop toolkit available in pre-8.0 versions of MiContact Center Business and, since it is web based, a separate client installation is not required This implementation requires a separate OIG server
Messaging and Routing	Includes, and is limited to, 240 ports For a list of activities included in Messaging and Routing, see "IVR and Messaging and Routing" on page 103 **NOTE:** MiContact Center Business does not support a mixture of Messaging and Routing ports with IVR ports on the same enterprise

Table 31: Optional features and components available to the Contact Center Starter Pack

FEATURE / COMPONENT	DESCRIPTION
Multimedia Agents	5 concurrent Multimedia Agents per license Enables agent handling, historical reporting, and real-time monitoring for chat, email, and SMS **NOTE:** Voice licensing is not a prerequisite for multimedia licensing
Workforce Scheduling Agents	1 Workforce Scheduling Agent per license (named agent licensing) Enables you to forecast scheduling requirements, create customized schedules, and print schedule reports. Schedule Adherence compares the real-time activities of agents to the schedule and provides alerts when agents are out of adherence. Employee Portal enables employees to view and trade shifts online and request changes to schedules for time off, shifts, and availability. Schedulers can view employee requests, perform what-if scenarios, quickly approve or deny requests, and automatically update schedules Advanced Supervisors can run Workforce Scheduling reports, view Adherence monitors, and approve or deny Employee Portal requests. They can also use the Forecasting tool in Contact Center Client to generate data for all media types and then export this data to Workforce Scheduling to assess staffing needs across all media
Contact Center Softphone	Enables agents to use their desktop computers as IP-based phones
MiVoice Analytics Client	MiVoice Analytics Client replaces the pre-8.0 license component known as Integrated Client Available as an option for MiVoice Analytics customers, MiVoice Analytics Client enables screen pop (the ability to launch applications and Web pages on desktops when non-ACD agents receive calls) and gives non-ACD users access to Contact Center PhoneSet Manager, and CTI Developer Toolkit Client or Salesforce.com Client software

Table 31: Optional features and components available to the Contact Center Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
IVR (for MiContact Center Business - Contact Center)	Each Contact Center IVR license includes 1 Contact Center IVR port Additional ports can be purchased If you purchase Contact Center IVR ports, you are no longer considered licensed for Messaging and Routing (all Messaging and Routing capabilities are included in Contact Center IVR) For a list of activities included in Contact Center IVR, see "IVR and Messaging and Routing" on page 103. Port limitations: • Each IVR Routing Server supports up to 120 ports • Each MiVoice Business platform supports up to 120 ports If you need more than 120 ports, you require an additional IVR Routing server
Contact Center IVR Redundant/Remote Starter Pack	If your requirements exceed 120 IVR ports or you require active IVR instances at remote locations, you must deploy an additional IVR server and provision it with a remote starter pack license IVR servers that are licensed with this starter pack can be provisioned for remote or redundant purposes The number of redundant ports that can be purchased must be less than or equal to the number of licensed active ports
IVR Text to Speech / IVR Text to Speech Language Pack	Includes 1 IVR Text to Speech port Enables Text to Speech (integration with Nuance Vocalizer) The IVR Text to Speech Language Pack enables additional languages for Text to Speech Requires a Nuance server and applicable Nuance software

Table 31: Optional features and components available to the Contact Center Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
IVR Speech Recognition / IVR Speech Recognition Language Pack	Includes 1 IVR Speech Recognition port Enables Automatic Speech Recognition (integration with Nuance Recognizer) The IVR Speech Recognition Language Pack enables additional languages for speech recognition Requires a Nuance server and applicable Nuance software
Third-party Call Recording Connector	Integrates supported third-party call recording solutions with MiContact Center Business to provide start/stop recording control in Contact Center Client. Links to call recordings are available in Lifecycle reports. If you want to record calls from more than one telephone system using a third-party call recording solution, you require one third-party call recording solution server per telephone system. You can optionally record calls from multiple telephone systems if you have multiple licenses for the third-party call recording solution and point to all third-party call recording solution server IP addresses from YourSite Explorer MiContact Center Business Version 9.1 is supported for use with the following third-party call recording applications: • dvsAnalytics Encore 2.3.5 Red Box call recording integration was verified with the latest Quantify build against MiContact Center Business Version 8.1.2.0 and later.

Table 31: Optional features and components available to the Contact Center Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
Third-party Workforce Management Connector	Enables you to use MiContact Center Business to forecast data using third-party workforce management software. MiContact Center Business Version 9.1 is supported for use with Mitel's Teleopti WFM solution. Teleopti WFM Release 8.8 or later is required for multimedia forecasting, scheduling, and reporting capabilities. **NOTE:** This connector can also be provided to third-party Mitel Solutions Alliance partners. See the Mitel Solutions Alliance Catalog for a complete list of third-party WFM products that have been tested and the MiContact Center Business versions that support these products.

Workgroup Starter Pack

The following tables describe the features and components included in and available to (as add-on options) the Workgroup Starter Pack.

Table 32: Features and components included in the Workgroup Starter Pack

FEATURE / COMPONENT	DESCRIPTION
Workgroup Agents	Includes 5 concurrent Workgroup Agent licenses Additional Workgroup Agents can be purchased to a maximum of 100 agents
Advanced Supervisors	Includes unlimited Advanced Supervisors
System Administrators	Includes one System Administrator Additional System Administrators can be purchased individually
Historical reporting	Enables you to create, print, and email historical reports for devices for a selected time period. Reports can be scheduled to be emailed or printed automatically

Table 32: Features and components included in the Workgroup Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
Real-time monitoring and reporting	Enables you to monitor devices in real time using Contact Center Client and Ignite Enables you to use historical data to forecast the number of agents required, by interval, to handle the predicted workload

MiVoice Analytics (and MiVoice Analytics in supported regions)	Includes 50 MiVoice Analytics extensions
	MiVoice Analytics
	• Reporting on and monitoring of general business extensions and ring groups
	• Traffic Analysis
	  • Enables you to create unlimited reports on T1s and E1s, including call statistics for DTMF receivers, route lists, route plans, routes, and trunks
	MiVoice Analytics
	• Call costing
	  • Using detailed carrier reports, businesses can track the cost of incoming and outgoing calls and bill accordingly
	• Subscriber Services
	  • Using detailed subscriber reports, businesses can bill subscribers for the use of services provided and mark up or discount prices based on fixed rates or percentage rates

Chat capability	The MiCollab Client and Ignite integration provides enterprise presence and chat capabilities Contact Center Chat enables employees to chat with each other using Contact Center Client or Microsoft Skype for Business Chats initiated in Contact Center Client are exclusive of those initiated in MiCollab Client If you use Microsoft Skype for Business as an instant messaging client, Microsoft Skype for Business Server is required

Table 32: Features and components included in the Workgroup Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
Flexible Reporting	Enables you to create custom reports
Interactive Contact Center	Enables agents to control their availability and supervisors to control the availability of agents and ACD queues, as well as set business hours for auto opening and closing of queues A System Administrator is required to be able to configure business hours to automatically open and close queues
Interactive Visual Queue	Enables supervisors and agents to identify calls within queues and manually prioritize the call's position in the queue Abandoned callers can be viewed by queue and called back with a right-click call back option
Ignite	Ignite is the primary agent desktop tool for handling voice interactions. In addition, agents can use Ignite to view and adjust their agent group presence, see the presence of other agents within their agent groups, access their agent handling statistics, and record and manage agent greetings We recommend integrating Ignite with MiCollab Client to enable advanced call handling functionality When Multimedia Contact Center Agents are owned, Ignite is also able to handle email, chat, and SMS interactions Ignite is available as a desktop or Web version, each offering a unique agent experience. See the *MiContact Center Business User Guide* and the *Multimedia Contact Center Installation and Deployment Guide* for details

Table 32: Features and components included in the Workgroup Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
MiCollab Client Deskphone/Softphone	Includes MiCollab Client Requires separate purchase of MiCollab Server Integrating MiCollab Client with Ignite offers advanced call handling functionality in addition to Enterprise presence (non-ACD) and extended ACD presence. The MiCollab Client and Ignite integration is fully supported with the desktop version of Ignite only.
Contact Center PhoneSet Manager	Enables agents to use their desktop computers as IP-based phones, using a headset connected to a desk phone
MiContact Center Business Preview Dialer	Professional Services are required for implementation. Please contact micc_customdevelopment@mitel.com for more information
MiVoice Call Recording Connector	MiVoice Call Recording Connector provides start/stop recording control in Contact Center Client Links to call recordings are available in Lifecycle reports If you want to record calls from more than one telephone system using the MiVoice Call Recording Connector, you require one MiVoice Call Recording server per telephone system. You can optionally record calls from multiple telephone systems if you have multiple licenses for MiVoice Call Recording and point to all server IP addresses from YourSite Explorer Support for the MiVoice Call Recording Connector for MiContact Center Business Version 9.1 was verified using MiVoice Call Recording 9.2

Table 32: Features and components included in the Workgroup Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
CTI Developer Toolkit Client	Provides basic telephony functions (answer, hang up, transfer, and hold) and delivers caller information such as ANI, DNIS, Collected Digits, and call notes in real time as calls arrive The Computer Telephony Integration (CTI) Developer Toolkit is a programmable .NET C# Dynamic-link library (DLL) that can be used in any .NET (Release 4.5) application or website. It requires a skilled developer to implement The client-side DLL may be used to display information in a Customer Relationship Management (CRM) system, Microsoft Outlook, or custom applications
CTI Developer Toolkit Server	Provides the ability to relay custom third-party IVR data (for example, collected digits and custom query results) into MiContact Center Business, which then passes this data to the PhoneSet Manager toaster, Contact Center Screen Pop, Interactive Visual Queue monitor, and agent monitor card design, in addition to any custom client-side application
Contact Center Screen Pop	Works in conjunction with Contact Center PhoneSet Manager or Contact Center Softphone to launch applications and Web pages on ACD agent desktops when they receive calls
Data provider queries	Includes support for queries to SAP, Salesforce, Microsoft Dynamics CRM, Sugar CRM, and NetSuite (requires IVR)
Microsoft CRM Connector	Enables Contact Center Screen Pop / Screen Pop to provide Microsoft CRM-specific screen pop abilities Requires Microsoft CRM 2013, 2016, or Microsoft CRM Office 365

Table 32: Features and components included in the Workgroup Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
Salesforce.com Client and Salesforce.com Connector	Enables your contact center agents to perform all job functions through a single Salesforce user interface You require an account with Salesforce.com (Enterprise or Professional edition) and, optionally, IVR Routing, for Collect Caller Entered Digits **NOTE:** Support for the Salesforce.com Connector is being discontinued by Salesforce.com and is being replaced by the MiVoice Integration for Salesforce. Post-8.x, the Salesforce.com Connector will no longer be available and all new customers will be expected to use the MiVoice Integration for Salesforce instead. (see below)
MiVoice Integration for Salesforce	Includes 5 concurrent OIG Advanced Call Control User licenses for Salesforce Using an open CTI Toolkit from Salesforce, this web-based OIG connector replaces the desktop toolkit available in pre-8.0 versions of MiContact Center Business and, since it is web based, a separate client installation is not required This implementation requires a separate OIG server

Table 33: Optional features and components available to the Workgroup Starter Pack

FEATURE / COMPONENT	DESCRIPTION
Multimedia Agents	5 concurrent Multimedia Agents per license Enables agent handling, historical reporting, and real-time monitoring for chat, email, and SMS **NOTE:** Voice licensing is not a prerequisite for multimedia licensing

Table 33: Optional features and components available to the Workgroup Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
Workforce Scheduling Agents	1 Workforce Scheduling Agent per license (named agent licensing) Enables you to forecast scheduling requirements, create customized schedules, and print schedule reports. Schedule Adherence compares the real-time activities of agents to the schedule and provides alerts when agents are out of adherence. Employee Portal enables employees to view and trade shifts online and request changes to schedules for time off, shifts, and availability. Schedulers can view employee requests, perform what-if scenarios, quickly approve or deny requests, and automatically update schedules Advanced Supervisors can run Workforce Scheduling reports, view Adherence monitors, and approve or deny Employee Portal requests. They can also use the Forecasting tool in Contact Center Client to generate data for all media types and then export this data to Workforce Scheduling to assess staffing needs across all media
Contact Center Softphone	Enables agents to use their desktop computers as IP-based phones
MiVoice Analytics Client	MiVoice Analytics Client replaces the pre-8.0 license component known as Integrated Client Available as an option for MiVoice Analytics customers, MiVoice Analytics Client enables screen pop (the ability to launch applications and Web pages on desktops when non-ACD agents receive calls) and gives non-ACD users access to Contact Center PhoneSet Manager, and CTI Developer Toolkit Client or Salesforce.com Client software
Messaging and Routing	Includes, and is limited to, 120 ports For a list of activities included in Messaging and Routing, see "IVR and Messaging and Routing" on page 103. **NOTE:** MiContact Center Business does not support a mixture of Messaging and Routing ports with IVR ports on the same enterprise

Table 33: Optional features and components available to the Workgroup Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
IVR (for MiContact Center Business - Workgroup)	Each Workgroup IVR license includes one Workgroup IVR port Additional ports can be purchased to a maximum of 10 ports For a list of activities included in Workgroup IVR, see "IVR and Messaging and Routing" on page 103. **NOTE:** MiContact Center Business does not support a mixture of Workgroup IVR ports with Messaging and Routing ports on the same enterprise
IVR Text to Speech / IVR Text to Speech Language Pack	Includes 1 IVR Text to Speech port Enables Text to Speech (integration with Nuance Vocalizer) The IVR Text to Speech Language Pack enables additional languages for Text to Speech Requires a Nuance server and applicable Nuance software
IVR Speech Recognition / IVR Speech Recognition Language Pack	Includes 1 IVR Speech Recognition port Enables Automatic Speech Recognition (integration with Nuance Recognizer) The IVR Speech Recognition Language Pack enables additional languages for speech recognition Requires a Nuance server and applicable Nuance software

Table 33: Optional features and components available to the Workgroup Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
3rd Party Call Recording Connector	Integrates supported third-party call recording solutions with MiContact Center Business to provide start/stop recording control in Contact Center Client Links to call recordings are available in Lifecycle reports If you want to record calls from more than one telephone system using a third-party call recording solution, you require one third-party call recording solution server per telephone system. You can optionally record calls from multiple telephone systems if you have multiple licenses for the third-party call recording solution and point to all third-party call recording solution server IP addresses from YourSite Explorer MiContact Center Business Version 8.0 is supported for use with the following third-party call recording applications: • dvsAnalytics Encore 2.3.5 Red Box call recording integration was verified with the latest Quantify build against MiContact Center Business Version 8.1.2.0 and later.
3rd Party Workforce Management Connector	Enables you to use MiContact Center Business to forecast data using third-party workforce management software MiContact Center Business Version 8.0 is supported for use with the following third-party workforce management applications: • Verint Impact 360 V10 SP4 or greater and Verint Impact 360 V11 or greater • NICE IEX Workforce Management (TotalView) V4.6 • QMax V6.1 • Monet V5 • Teleopti V8.2

Table 33: Optional features and components available to the Workgroup Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
Workgroup to Contact Center Starter Pack Upgrade	Provides an upgrade to MiContact Center Business Starter Pack Includes one additional System Administrator license Upgrade agent licenses are not included and must be purchased separately (see below) Upgrade IVR port licenses are not included and must be purchased separately (see below)
Workgroup Agent to Contact Center Agent Upgrade	Provides an upgrade to Contact Center Agent licenses Includes one Contact Center Agent license **NOTE:** MiContact Center Business does not support mixing Workgroup with Contact Center agents in the same enterprise. When upgrading, all Workgroup Agents must be upgraded to Contact Center Agents
Workgroup IVR to Contact Center IVR Upgrade	Provides an upgrade to Contact Center IVR **NOTE:** MiContact Center Business does not support mixing Workgroup IVR ports with Contact Center IVR ports in the same enterprise. When upgrading, all Workgroup IVR ports must be upgraded to Contact Center IVR ports

IVR and Messaging and Routing

Contact Center and Workgroup have access to, either by inclusion in the starter pack or via add-on options, to Messaging and Routing and IVR.

Contact Center IVR is available as a standalone product. (See "Contact Center IVR Starter Pack" on page 113.)

The following table describes the type of features available to each routing package:

Table 34: Features and capabilities available to Messaging and Routing, IVR, and Contact Center IVR Routing

FEATURE	CAPABILITIES	MESSAGING AND ROUTING	IVR	CONTACT CENTER IVR (STANDALONE)
Messaging	Use default, included responses or record new responses	X	X	X
	Playback of numbers, monetary amounts, and dates	X	X	X
	Create a play menu with limitless input branches	X	X	X
	Access Text to Speech abilities (requires purchase of Text to Speech ports)	X	X	X
	Play position in queue updates	X	X	-
	Share ports using Dynamic RADs, reducing the number of ports required	X	X	-
Reporting	Callback reporting	X	X	-
	Workflow reporting	X	X	X
	DNIS reporting	X	X	X
	Hunt group reporting	X	X	X
ANI/DNIS routing	Use ANI and DNIS caller information to route calls	X	X	X
Send emails/SMS	Send emails or SMS using workflows	X	X	X

Table 34: Features and capabilities available to Messaging and Routing, IVR, and Contact Center IVR Routing (continued)

FEATURE	CAPABILITIES	MESSAGING AND ROUTING	IVR	CONTACT CENTER IVR (STANDALONE)
Voice/Web callback	Assign callbacks to queues, queue groups, and agents	-	X	-
	Assign callbacks to extensions	-	X	X
	Enable customers to request voice callbacks from your company's website	-	X	X
	Enable customers to request web callbacks from your company's website	-	X	-
	Save callback request states to the SQL database, enabling reporting using the Global Callback monitor	-	X	X
Remote database access	Read and write information through a MS SQL connection, ODBC connection, Excel sheet, or LDAP provider	-	X	X
	Proxy data through modern WebAPIs and standard database interfaces	-	X	X

Table 34: Features and capabilities available to Messaging and Routing, IVR, and Contact Center IVR Routing (continued)

FEATURE	CAPABILITIES	MESSAGING AND ROUTING	IVR	CONTACT CENTER IVR (STANDALONE)
Outbound callflow	Initiate outbound callflows	-	X	X
	Make outbound voice calls and send emails and SMS	-	X	X
	Direct voice callbacks to queues, queue groups, or agents	-	X	-
	Direct voice callbacks to extensions	-	X	X
Digit collection	Collect and store digits	-	X	X
	Read back digits and confirm input	-	X	X
	Display digits in a screen pop or ringing toaster	-	X	X
	Enable digit collection via spoken caller input (requires purchase of Automatic Speech Recognition ports)	-	X	X
Call controls	Answer	X	X	X
	Hang Up	X	X	X
	Conference	-	X	X
	Make Call	-	X	X
	Hold	-	X	-

Table 34: Features and capabilities available to Messaging and Routing, IVR, and Contact Center IVR Routing (continued)

FEATURE	CAPABILITIES	MESSAGING AND ROUTING	IVR	CONTACT CENTER IVR (STANDALONE)
Schedule conditions	Branch workflows based on date and time conditions, enabling a workflow to respond to a business's hours of operation	X	X	X
	Access weekly and holiday schedules	X	X	X
Queue conditions	Use real-time queue statistics to create up-to-the-minute announcements for callers	X	X	-
Language	Change the system language	X	X	X
PCI tools	Enable secure collection of confidential information, such as credit card and social security card numbers	-	X	-
Customization	Using the Execute activity, enable workflows to interact with external systems to run .exe scripts, PowerShell, Web Service (retrieve JSON or XML responses from web services using SOAP or REST), and CRM Service (send user defined queries to Microsoft CRM to retrieve data)	-	X	X
	Store retrieved data as a variable that can be used in workflows	-	X	X
Emergency mode	Enable authorized users to call in and alter the workflow behavior to respond to special situations, such as severe weather	X	X	X

Table 34: Features and capabilities available to Messaging and Routing, IVR, and Contact Center IVR Routing (continued)

FEATURE	CAPABILITIES	MESSAGING AND ROUTING	IVR	CONTACT CENTER IVR (STANDALONE)
Workflow Editor	Build workflows using a drag-and-drop graphical interface	X	X	X
	Create workflows or use included, default workflows to provide flexible, customizable routing	X	X	X
	Use branch conditions to support queue statistics	X	X	-
	Use branch conditions to support workflow variables, schedule conditions, and redirect value in call records	X	X	X
	Support the use of multiple conditions to determine if a branch in the workflow should occur and, upon success, which actions will occur	X	X	X

The following table lists the available activities for Messaging and Routing, IVR, and Contact Center IVR.

The activities that are available to IVR and Messaging and Routing are the same regardless of whether you are licensed for Workgroup or Contact Center:

Table 35: Messaging and Routing, IVR, and Contact Center IVR activities

ACTIVITY	MESSAGING AND ROUTING	IVR	CONTACT CENTER IVR (STANDALONE)
ANI	X	X	X
Answer	X	X	X
Callback Request	-	X	X
Collect Digits	-	X	X
Conference	-	X	X
Connect to Caller	X	X	-
Date Time Validation	-	X	X
Delay	X	X	X
DNIS	X	X	X
Email	X	X	X
Execute	-	X	X
Go To	X	X	X
Hang Up	X	X	X
Hold State	-	X	X
Hunt Group	X	X	X
Interflow	X	X	-
Language	X	X	X

Table 35: Messaging and Routing, IVR, and Contact Center IVR activities (continued)

ACTIVITY	MESSAGING AND ROUTING	IVR	CONTACT CENTER IVR (STANDALONE)
Make Call	-	X	X
Management	X	X	X
Menu	X	X	X
Mode of Operation	X	X	X
Offer to Agent	X	X	-
Offer to Agent Group	X	X	-
Offer to Preferred Agent	X	X	-
Play	X	X	X
Query	-	X	X
Queue	X	X	-
Queue Control	X	X	-
Record	X	X	X
Redirect	X	X	X
Retrieve Callback	-	X	X
Rules	-	X	X
Save Agent Greeting	X	X	-
Save Callback	-	X	X

Table 35: Messaging and Routing, IVR, and Contact Center IVR activities (continued)

ACTIVITY	MESSAGING AND ROUTING	IVR	CONTACT CENTER IVR (STANDALONE)
Schedule	X	X	X
Set Device Mode of Operation	X	X	X
Set System Mode of Operation	X	X	X
Set Variables	X	X	X
SMS	X	X	X
Subroutine	X	X	X
Swap Prompt	X	X	X
Terminate Workflow	X	X	X
Transfer	X	X	X
Variable Compare	X	X	X

CONTACT CENTER MULTIMEDIA STARTER PACK

The Contact Center Multimedia Starter Pack is suitable for contact centers who are not enabled for voice, and want the ability to handle interactions via email, chat, or SMS. The following tables describe the features and components included in and available to (as add-on options) the Contact Center Multimedia Starter Pack:

Table 36: Features and components included in the Contact Center Multimedia Starter Pack

FEATURE / COMPONENT	DESCRIPTION
Multimedia Agents	Includes 5 concurrent Multimedia Agents
Advanced Supervisors	Includes unlimited Advanced Supervisors
System Administrators	Includes two System Administrators Additional System Administrators can be purchased separately
Historical reporting	Enables you to create, print, and email historical reports for devices for a selected time period. Reports can be scheduled to be emailed or printed automatically
Real-time monitoring	Enables you to monitor devices in real time using Contact Center Client and Ignite
Interactive Contact Center	Enables agents to control their availability and supervisors to control the availability of agents and queues, as well as set business hours for auto opening and closing of queues A System Administrator is required to be able to configure business hours to automatically open and close queues
Interactive Visual Queue	Enables supervisors and agents to identify contacts within queues and manually prioritize the interaction's position in the queue
Ignite	Ignite is the primary agent desktop tool for handling email, chat, and SMS interactions. In addition, agents can use Ignite to view and adjust their agent group presence, see the presence of other agents within their agent groups, and access their agent handling statistics Ignite is available as a desktop or Web version, each offering a unique agent experience. See the *Multimedia Contact Center Installation and Deployment Guide* for details.

Table 37: Features and components available to the Contact Center Multimedia Starter Pack

FEATURE / COMPONENT	DESCRIPTION
Workforce Scheduling Agents	Includes 1 Workforce Scheduling Agent (named agent licensing) Enables you to forecast scheduling requirements, create customized schedules, and print schedule reports. Schedule Adherence compares the real-time activities of agents to the schedule and provides alerts when agents are out of adherence. Employee Portal enables employees to view and trade shifts online and request changes to schedules for time off, shifts, and availability. Schedulers can view employee requests, perform what-if scenarios, quickly approve or deny requests, and automatically update schedules Advanced Supervisors can run Workforce Scheduling reports, view Adherence monitors, and approve or deny Employee Portal requests. They can also use the Forecasting tool in Contact Center Client to generate data for all media types and then export this data to Workforce Scheduling to assess staffing needs across all media

CONTACT CENTER IVR STARTER PACK

The Contact Center IVR Starter Pack provides an automated method for routing calls, implementing automated responses, and executing questionnaires. There are endless options for configuring IVR workflows resulting in flexible, creative, solutions to your specific IVR needs. See the *MiContact Center Business Installation and Administration Guide* for detailed information regarding IVR workflows.

The Contact Center IVR Starter Pack is available as a standalone product only.

For a list of activities and capabilities available to the Contact Center IVR Starter Pack, see "IVR and Messaging and Routing" on page 103.

The following tables describe the components and features included in and available to (as add-on options) the Contact Center IVR Starter Pack:

Table 38: Features and components included in the Contact Center IVR Starter Pack

FEATURE / COMPONENT	DESCRIPTION
System Administrator	Includes 1 System Administrator Additional System Administrators can be purchased separately

Table 38: Features and components included in the Contact Center IVR Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
Contact Center IVR Port	License includes 1 Contact Center IVR Port Additional ports can be purchased Active ports can reside on local or remote IVRs
Contact Center IVR Redundant Port	License includes 1 Contact Center IVR Redundant Port Additional ports can be purchased The number of redundant ports that can be purchased must be less than or equal to the number of licensed active ports
Historical reporting	Enables you to create, print, and email historical IVR reports for a selected time period. Reports can be scheduled to be emailed or printed automatically

Table 39: Features and components available to the Contact Center IVR Starter Pack

FEATURE / COMPONENT	DESCRIPTION
IVR Text to Speech Port IVR Text to Speech Language Pack	License includes 1 IVR Text to Speech port Enables Text to Speech (integration with Nuance Vocalizer) The IVR Text to Speech Language Pack enables additional languages for Text to Speech Requires a Nuance server and applicable Nuance software
IVR Speech Recognition IVR Speech Recognition Language Pack	License includes 1 IVR Speech Recognition port Enables Automatic Speech Recognition (integration with Nuance Recognizer) The IVR Speech Recognition Language Pack enables additional languages for speech recognition Requires a Nuance server and applicable Nuance software

MIVOICE ANALYTICS STARTER PACK

The MiVoice Analytics Starter Pack is geared toward companies that require monitoring and reporting for general business extensions and ring groups. It is included with the Contact Center and Workgroup Starter Packs but is also available as a standalone product. MiVoice Analytics is included in the MiVoice Analytics Starter Pack in the following supported areas: North America, Latin America, United Kingdom, and the Benelux regions. In addition to detecting toll fraud, MiVoice Analytics enables businesses to track phone use, reconcile carrier bills, and bill back departments. MiVoice Analytics is also available as a standalone license. See "MiVoice Analytics Starter Pack" on page 119 for more information.

You license MiVoice Analytics based on the total number of physical extensions you would like to report on in your enterprise. Your license reflects the maximum number of extensions on which you can run reports.

The following tables describe the components and features included in and available to (as add-on options) the MiVoice Analytics Starter Pack:

Table 40: Features and components included in the MiVoice Analytics Starter Pack

FEATURE / COMPONENT	DESCRIPTION
MiVoice Analytics Extensions	Includes 50 MiVoice Analytics Extension licenses Additional MiVoice Analytics Extensions can be purchased
Advanced Supervisors	Includes unlimited Advanced Supervisors
System Administrators	Includes two System Administrators Additional System Administrators can be purchased individually
Historical reporting	Enables you to create, print, and email historical reports for devices for a selected time period. Reports can be scheduled to be emailed or printed automatically
Real-time monitoring and reporting	Enables you to monitor in real time and report on MiVoice Analytics extensions and ring groups Where MiVoice Analytics is supported, enables you to report on MiVoice Analytics extensions

Table 40: Features and components included in the MiVoice Analytics Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION

MiVoice Analytics (in supported regions)	MiVoice Analytics is included in the following supported areas: North America, Latin America, United Kingdom, and the Benelux regions
	Where supported, MiVoice Analytics provides:
	• Call costing
	  • Using detailed carrier reports, businesses can track the cost of incoming and outgoing calls and bill accordingly
	• Subscriber Services
	  • Using detailed subscriber reports, businesses can bill subscribers for the use of services provided and mark up or discount prices based on fixed rates or percentage rates

Traffic Analysis	Enables you to create unlimited reports on T1s and E1s, including call statistics for DTMF receivers, route lists, route plans, routes, and trunks
Network License	Provides access to a maximum of 99 sites/connection points If your cluster exceeds the 99 site recommendation, please contact Professional Services at micc_customdevelopment@mitel.com
MiVoice Analytics Resiliency	Provides reporting and real time views on a secondary controller in the event of an outage or failure on the primary controller
Contact Center PhoneSet Manager	Enables employees to use their desktop computers as IP-based phones, using a headset connected to a desk phone

Table 40: Features and components included in the MiVoice Analytics Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
MiVoice Call Recording Connector	MiVoice Call Recording Connector provides start/stop recording control in Contact Center Client Links to call recordings are available in Lifecycle reports If you want to record calls from more than one telephone system using the MiVoice Call Recording Connector, you require one MiVoice Call Recording server per telephone system. You can optionally record calls from multiple telephone systems if you have multiple licenses for MiVoice Call Recording and point to all server IP addresses from YourSite Explorer Support for the MiVoice Call Recording Connector for MiContact Center Business Version 9.1 was verified using MiVoice Call Recording 9.2
CTI Developer Toolkit Client	Provides basic telephony functions (answer, hang up, transfer, and hold) and delivers caller information such as ANI, DNIS, Collected Digits, and call notes in real time as calls arrive The Computer Telephony Integration (CTI) Developer Toolkit is a programmable .NET C# Dynamic-link library (DLL) that can be used in any .NET (Release 4.5) application or website. It requires a skilled developer to implement The client-side DLL may be used to display information in a Customer Relationship Management (CRM) system, Microsoft Outlook, or custom applications
Contact Center Screen Pop	Works in conjunction with Contact Center PhoneSet Manager or Contact Center Softphone to launch applications and Web pages on ACD agent desktops when they receive calls

Table 40: Features and components included in the MiVoice Analytics Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
Salesforce.com Client and Salesforce.com Connector	Enables your contact center agents to perform all job functions through a single Salesforce user interface You require an account with Salesforce.com (Enterprise or Professional edition) and, optionally, IVR Routing, for Collect Caller Entered Digits **NOTE:** Support for the Salesforce.com Connector is being discontinued by Salesforce.com and is being replaced by the MiVoice Integration for Salesforce. Post-8.x, the Salesforce.com Connector will no longer be available and all new customers will be expected to use the MiVoice Integration for Salesforce instead. (see below)

Table 41: Optional features and components available to the MiVoice Analytics Starter Pack

FEATURE / COMPONENT	DESCRIPTION
MiVoice Analytics Client	MiVoice Analytics Client replaces the pre-8.0 license component known as Integrated Client Available as an option for MiVoice Analytics customers, MiVoice Analytics Client enables screen pop (the ability to launch applications and Web pages on desktops when non-ACD agents receive calls) and gives non-ACD users access to Contact Center PhoneSet Manager, and CTI Developer Toolkit Client or Salesforce.com Client software
MiVoice Integration for Salesforce	Includes 5 concurrent OIG Advanced Call Control User licenses for Salesforce Using an open CTI Toolkit from Salesforce, this web-based OIG connector replaces the desktop toolkit available in pre-8.0 versions of MiContact Center Business and, since it is web based, a separate client installation is not required
Contact Center Softphone	Enables general business employees to use their desktop computers as IP-based phones

Table 41: Optional features and components available to the MiVoice Analytics Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
3rd Party Call Recording Connector	Integrates supported third-party call recording solutions with MiVoice Analytics to provide start/stop recording control in Contact Center Client Links to call recordings are available in Lifecycle reports If you want to record calls from more than one telephone system using a third-party call recording solution, you require one third-party call recording solution server per telephone system. You can optionally record calls from multiple telephone systems if you have multiple licenses for the third-party call recording solution and point to all third-party call recording solution server IP addresses from YourSite Explorer MiVoice Analytics Version 8.0 is supported for use with the following third-party call recording applications: • dvsAnalytics Encore 2.3.5 Red Box call recording integration was verified with the latest Quantify build against MiContact Center Business Version 8.1.2.0 and later.

MIVOICE ANALYTICS STARTER PACK

MiVoice Analytics is included in the MiVoice Analytics Starter Pack (in supported regions) but is also available as a standalone product. In addition to detecting toll fraud, MiVoice Analytics enables businesses to track phone use, reconcile carrier bills, and bill back departments. MiVoice Analytics is currently supported in the following areas: North America, Latin America, United Kingdom, and the Benelux regions.

You license MiVoice Analytics based on the total number of physical extensions you would like to report on in your enterprise.

The following tables describe the components and features included in and available to (as add-on options) the MiVoice Analytics Starter Pack:

Table 42: Features and components included in the Call Accounting Starter Pack

FEATURE / COMPONENT	DESCRIPTION
MiVoice Analytics Extensions	Includes 50 MiVoice Analytics Extension licenses Additional MiVoice Analytics Extensions can be purchased
Advanced Supervisors	Includes unlimited Advanced Supervisors Advanced Supervisors are required to run reports
System Administrators	Includes two System Administrators Additional System Administrators can be purchased individually
Historical reporting	Enables you to create, print, and email historical reports for devices for a selected time period. Reports can be scheduled to be emailed or printed automatically Includes access to Trunk, Attendant Console, Traffic, Call Costing, and Subscriber Services reports
Call costing	Using detailed carrier reports, businesses can track the cost of incoming and outgoing calls and bill accordingly
Subscriber Services	Using detailed subscriber reports, businesses can bill subscribers for the use of services provided and mark up or discount prices based on fixed rates or percentage rates
Traffic Analysis	Enables you to create unlimited reports on T1s and E1s, including call statistics for DTMF receivers, route lists, route plans, routes, and trunks
Network License	Provides access to a maximum of 99 sites/connection points If your cluster exceeds the 99 site recommendation, please contact Professional Services at micc_customdevelopment@mitel.com

Table 43: Features and components available to the Call Accounting Starter Pack

FEATURE / COMPONENT	DESCRIPTION
MiVoice Analytics Starter Pack to MiVoice Analytics Starter Pack upgrade	Provides an upgrade to MiVoice Analytics Starter Pack Includes upgrades for 50 extensions Additional MiVoice Analytics Extensions can be upgraded by purchasing the MiVoice Analytics Extension to MiVoice Analytics Extension upgrade (see below)
MiVoice Analytics Extension to MiVoice Analytics Extension upgrade	Provides an upgrade to MiVoice Analytics Extension licenses Includes 50 MiVoice Analytics extension licenses **NOTE:** You cannot mix MiVoice Analytics and MiVoice Analytics extensions in the same enterprise

MICONTACT CENTER BUSINESS HIGH AVAILABILITY AND DISASTER RECOVERY STARTER PACK

Table 44: MiContact Center Business High Availability and Disaster Recovery starter pack

FEATURE / COMPONENT	DESCRIPTION
MiContact Center Business HA Pair–Physical	Gives you the active/passive configuration with Neverfail Engine, also includes remote installation support, administrator training, and one year software assurance. This is for HA pairs that are installed on physical servers, rather than virtual machines.
MiContact Center Business HA Pair–Virtual	Gives you the active/passive configuration with Neverfail Engine, also includes remote installation support, administrator training, and one year software assurance. This is for HA pairs that are installed on virtual servers.
MiContact Center Business HA WanSmart	Bandwidth optimization solution that can be added when the HA pair is across the WAN.
MiContact Center Business Tertiary–Physical	Adds an additional passive/standby server in the disaster recovery configuration. This applies to physical server deployments.
MiContact Center Business Tertiary–Virtual	Adds an additional passive/standby server in the disaster recovery configuration. This applies to virtual server deployments.

STATEMENTS OF SUPPORT

The following section includes statements of support for our applications and integrated products.

STATEMENT OF SUPPORT AND SOFTWARE ASSURANCE FOR MiCONTACT CENTER BUSINESS SOFTWARE

Technical support is provided, for MiContact Center Business software systems that are in Software Assurance, for the two most recent releases of MiContact Center Business, IVR Routing, and MiVoice Analytics software: N.X-1. For example, if the current release of the software is Version 9.2, technical support is provided for Versions 9.2, 9.1, 9.0x, 8.1.x, and 8.0x. Upgrade support is provided for N.X-2. For example, if the current release of the software is Version 9.2, upgrade support is provided for Versions 9.1, 9.0x, 8.1.x, 8.0.x, 7.1.x, and 7.0.x.

A mandatory, minimum one year Software Assurance subscription must be purchased with all new MiContact Center Business system sales. If you optionally purchase 36+ months of Software Assurance at the same time, you are entitled to a 20% discount.

If you have less than one year remaining in your Software Assurance plan and purchase add-on products, additional Software Assurance for your add-on products will not be required until the renewal date for your MiContact Center Business software system.

If you have more than one year remaining in your Software Assurance plan and purchase add-on products, you will be required to purchase additional Software Assurance for your add-on products so that your expiry aligns with the expiry of your MiContact Center Business software system.

You have a 30-day grace period after your system expiry during which you can renew your Software Assurance package without incurring a re-enlist fee. The purchased subscription is retroactive to the original expiry date. Software Assurance entitlements are not extended during the grace period if there is no active subscription. After 30 days you will be required to pay a re-enlist fee equal to the value of one year of Standard Software Assurance coverage for your system.

You can either use the Mitel Configure Price Quote (CPQ) tool to calculate annual years of Software Assurance or email miccrenewal@mitel.com for a renewal queue.

SOFTWARE ASSURANCE FOR IVR AUTOMATIC SPEECH RECOGNITION AND TEXT TO SPEECH

There are two levels of Software Assurance available for Contact Center IVR Automatic Speech Recognition and Text to Speech: Standard and Premium. Software assurance for this product must be purchased separately from other MiContact Center Business software. For more information, email miccrenewal@mitel.com.

SUPPORTED BROWSERS

The following browser versions were verified as supported with MiContact Center Business Version 9.2 applications:

- Internet Explorer (Version 11.345.17134.0)
- Google Chrome (Version 70.0.3538.77)
- Safari (Version 12.0.1)
- Mozilla Firefox (Version 63.0.1, 64-bit)
- Microsoft Edge (Version 42.17134.1.0)

NOTE: Modern browsers are updated frequently and often without user interaction. As a result, deployed versions of these browsers may be newer than the versions that were tested prior to the release of MiContact Center Business Version 9.2 websites should continue to function through all browser updates. If an update released by a browser manufacturer causes adverse behavior, Mitel will make every effort to resolve the issue as per support and service level agreements.

NOTE: Internet Explorer does not support .wav file playback. While using the Agent Recording feature, for playback of your recording, use any other supported browser.

NOTE: Due to Microsoft's statement as Internet Explorer 11 being the last version of Internet Explorer, only getting security updates and technical support, it is recommended to upgrade to Microsoft Edge or other supported Web browser like Chrome, Firefox, or Safari. Please see the Detailed Release Notes for the software versions used in the system to check a list of known issues with MiContact Center Business and MiVoice Analytics software that requires upgrade to modern browsers when using Internet Explorer 11.

SUPPORTED MITEL TELEPHONE PLATFORMS AND SOLUTIONS

As a best practice, we recommend you stay up to date with the most current releases of the Mitel telephone systems you use in your business. Table 45 details general support for Mitel telephone systems by version.

NOTE:

- MiContact Center Business and MiVoice Analytics Version 8.1+ do not support Call Forward Always *from* Ring Groups. Call Forward Always *to* Ring Groups is supported.
- The SX-200, Axxess, and 5000 media servers are not supported with Version 7.x and Version 8.x, except as historical media servers. When upgrading to Version 7.x and 8.x, SX-200 media servers, along with their associated extensions, agents, agent groups, queues, trunks, and trunk groups, are set to historical. Axxess and 5000 media servers must be marked as historical before upgrading to Version 7.x and 8.x to retain historical data.
- MiContact Center Business applications support Mitel MiVoice Business platforms regardless of hardware or virtual platform. Previous platforms running 3300 ICP and MCD software are not supported. For a list of supported MiVoice Business releases, please see the following table.

Table 45: Supported Mitel telephone platforms

MITEL SOLUTION	SUPPORTED VERSIONS
MiVoice Business	MiVoice Business Versions 9.0 SP3, 9.0, 8.0 SP3, and 7.2 SP1
MiVoice Border Gateway (for remote agent and employee support using the MiVoice Border Gateway Connector)	Versions 11.0, 10.1, 10.0 SP2, 9.3, 9.2, and 9.1
Mitel OIG	Version 4.1 (with Salesforce Winter 2019)
MiCollab	Versions 9.0, 8.1 SP1, 8.1, and 8.0 SP1
ESXi	Version 6.5.0 **

* Ring Group real-time and reporting statistics were validated against MiVoice Business 7.0+. Previous versions of MiVoice Business do not support Ring Group real-time and reporting.

* MiCollab SIP Softphone requires MiVB 9.0 SP1 and MiCollab 8.1 SP1.

**The build used to test ESXi Version 6.5.0 is 10175896 on a Skylake chipset.

- If you use out-of-date ESXi builds, you might encounter performance issues.
- It is recommended to use Haswell and later chipsets for improved performance of MiCC systems.

TABLET SUPPORT

Microsoft Surface RT tablets are not supported.

SYNCHRONIZATION

Before you perform synchronization for MiVoice Business

- Ensure the MiVoice Business is running a supported firmware version. In order to use synchronization to synchronize the YourSite database with resilient, Network ACD, and clustered telephone systems you must enable the SDS Directory synchronization option on all of the telephone systems in your enterprise. Make Busy, DND and other agent state changes are distributed across SDS links between telephone system platforms in a clustered environment. Excessive agent state change events that are sent across the SDS link may impact the database update process.
- Ensure that you have completed programming the MiVoice Business platform and created a username and password for synchronization (on the MiVoice Business User Authorization Profile form). The MiVoice Business User Authorization Profile must include Application Access and System Admin Access. Desktop Admin and Group Admin options can be disabled. These steps must be completed for all MiVoice Business platforms in your Enterprise.
- Ensure your MiXML service is started by clicking Start=>Control Panel=>MiXML. Verify that port 18000 is entered on the Settings tab and click Start.
- Ensure that your Windows or Corporate firewall is not blocking the following ports
  - SOAP: 18000 (HTTPS)
  - UDP: 53
  - TCP: 7011
  - TCP: 22
  - TCP: 443 (SSH)
    NOTE: For a full list of ports required for MiContact Center Business, see http://micc.mitel.com/kb/KnowledgebaseArticle51887.aspx.
- Configure the user name and password for each of the MiVoice Business media servers in YourSite Explorer.
  For more information, see the *MiContact Center Business Installation and Administration Guide*.

NOTE:

- Synchronization and Validation uses the Mitel MiXML Server to gain access to your MiVoice Business.
- MiContact Center Business supports the synchronization of all currently supported Mitel Multiline, Single Line, and Wireless IP sets, in addition to generic Analog sets. Superset phones are not currently supported for synchronization.
- Not all Mitel handsets support ACD features. Please refer to the product documentation for your handset to determine suitability for ACD. All other sets are supported for general business reporting only.

You can synchronize the YourSite database with the queues, agents, agent groups, trunks, and extensions programmed on the telephone system using Synchronization and Validation. You can perform Synchronization and Validation on either an individual telephone system, on networked ACD assignments, or on all telephone systems in your enterprise. For detailed information on Synchronization and Validation, see the *MiContact Center Business Installation and Administration Guide*.

STATEMENT OF SUPPORT FOR VIRTUALIZATION

CAUTION: Any virtualization maintenance, such as snap shots, copying large files, and updates on the host server can affect guest image performance and availability.

MiContact Center Business and MiVoice Analytics server applications are supported in virtualized environments. Product testing has been limited to VMWare ESXi, Microsoft Virtual Server, and Microsoft Hyper-V.

MiContact Center Business and MiVoice Analytics application hardware and software recommendations do not change when running the Enterprise Server in a virtualized environment.

We highly recommend you use dedicated resourcing when running IVR Routing. If you use shared resourcing, please ensure that you have sufficient dedicated resources to run our software according to the hardware specifications as described in this guide. See "Server hardware requirements" on page 20.

Virtual host server requirements must be equal to or greater than the sum of all virtual machines that will run concurrently. Applications running on the host virtual machine as well as other virtual machines configured on the host can affect the functionality of the MiContact Center Business software. Please refer to your Virtual Server, Hyper-V, and VMware documentation for specific hardware requirements.

While MiContact Center Business, MiVoice Analytics, and IVR Routing are expected to function properly in a virtual environment, there may be performance implications which can invalidate the minimum system requirements as outlined in this document.

Should Mitel Networks suspect that the virtualization layer/software is the root cause of a problem, the customer may be required to

- Install the software on a non-virtualized server to determine if the problem still exists
- Contact the appropriate vendor to resolve the virtualization layer/software problem

For detailed information and specifications regarding running Microsoft or other third-party software in virtualized environments, please consult your software dealer or vendor.

For more detailed information regarding virtual appliance deployments, see the *Virtual Appliance Deployment Solutions Guide*.

Virtualization models

Virtualization is a method of partitioning a single physical computer (known as the virtual host) into multiple 'virtual' computers (known as virtual machines), giving each the appearance and capabilities of running its own dedicated machine. Each virtual machine functions as a full-fledged computer and can be independently controlled. The layer that controls these virtual machines is known as the hypervisor. The types of hypervisors are shown in Figure 13.

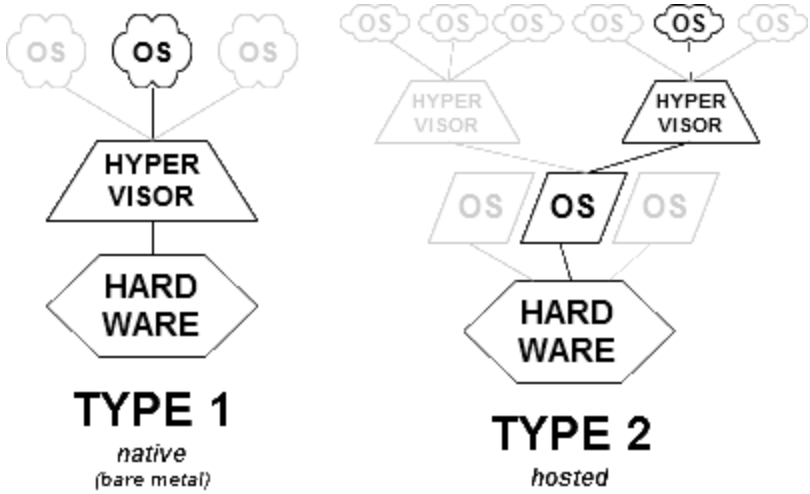


Figure 13: Types of hypervisors

There are two main types of hypervisors. Type 1 hypervisors, also known as native or 'bare metal' hypervisors, run directly on the hardware of the virtual host, whereas type 2 hypervisors (hosted hypervisors) run on the operating system layer. Type 1 hypervisors include Microsoft Hyper-V, VMware ESX/ESXi, and Citrix XenServer. Type 2 hypervisors include Microsoft Virtual Server and Microsoft Virtual PC.

Figure 14 displays a standard physical computer (left) compared to a virtual host running with a type 2 hypervisor (right).

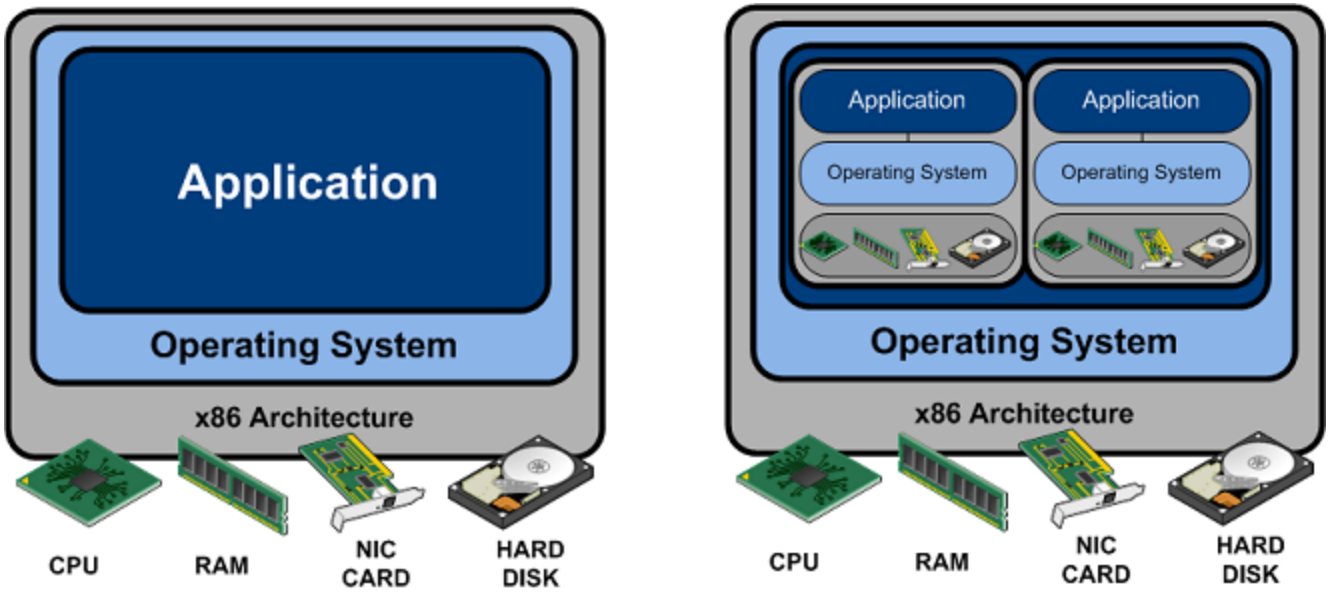


Figure 14: Type 2 hypervisor compared

The following applies to the standard physical computer (left)

- Runs a single operating system per machine
- Software and hardware are tightly coupled
- Running multiple applications on the same machine can create conflicts
- Resources can be under-utilized at times
- Is an inflexible and costly infrastructure

The following applies to the virtual host (right)

- Is hardware-independent of the operating system and applications
- Can provision multiple virtual machines on the host system
- Can manage operating systems and applications as a single unit by encapsulating them into virtual machines

In a type 2 hypervisor virtualization environment, the virtual host runs an operating system and the virtual machine runs within the host operating system. A type 1 hypervisor operates slightly differently, in that the virtual machines run on the host server's virtualization layer without the need for a host server operating system. Figure 15 displays a standard physical computer (left) compared to a virtualized computer running a type 1 hypervisor.

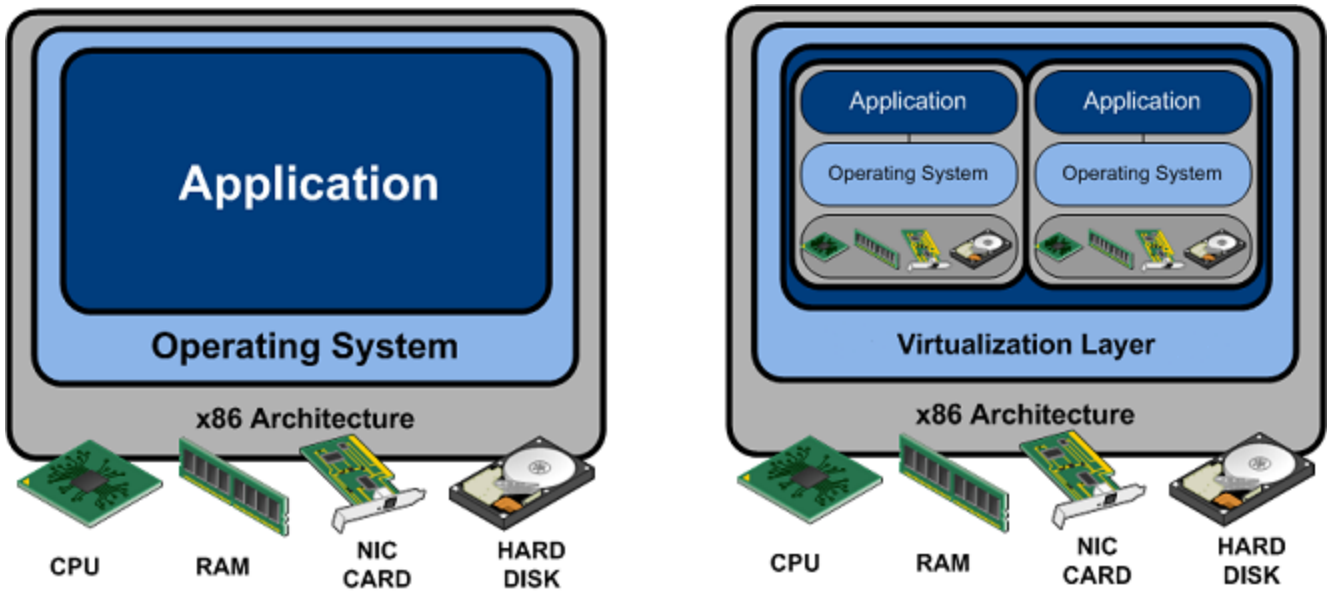


Figure 15: Type 1 hypervisor compared

In the type 1 hypervisor virtualization model, note that the virtual machines running on the virtual host (right) are run on the virtualization layer without the need of a host operating system, which reduces memory requirements on the system.

STATEMENT OF SUPPORT FOR REMOTE AGENTS

Remote agents require network access from their client machines to the MiContact Center Business Enterprise Server to ensure full-feature functionality. Each client machine with the Contact Center Client Component Pack must be able to communicate with the Enterprise Server as though it were on the corporate network regardless of the physical location or available network access for that client. Typically this is achieved using Virtual Private Network (VPN) infrastructure providers, such as Juniper Networks, F5 Networks, SonicWall, or Cisco, or through the use of network access technologies, such as Microsoft DirectAccess. When leveraging VPN or network access technologies, communication between the client and the Enterprise Server is accomplished by configuring connectivity over the MiContact Center Business ports, found here: http://micc.mitel.com/kb/KnowledgebaseArticle51887.aspx.

Support for agents working remotely over VPN and network access technologies is considered best effort and, at any time as an appropriate troubleshooting step, Mitel may require the client to be connected directly to the network to eliminate remote access infrastructure as the cause of unexpected behavior.

For additional information on configuring, supporting, maintaining, and testing VPN and network access technologies please refer to the appropriate vendor or manufacturer's documentation.

IVR ROUTING CONSIDERATIONS

When deploying IVR Routing, careful attention must be paid to the planning and sizing of your IVR Routing system. Each IVR Routing deployment is unique. This section outlines general guidelines to assist in planning how to implement IVR Routing to best suit your needs.

Planning for pre-announce and agent greeting

In MiContact Center Business Version 8.0+, IVR Routing can play pre-announcement and agent greeting messages, previously only managed and playable from individual client computers. Pre-announcement and agent greeting use the Agent Greeting port type and are serviced by the MiContact Center UPiQ service within the IVR Routing server. These ports are pooled by IVR Routing and are not assigned on a one-to-one basis to agents or queues, enabling fewer ports to support many pre-announce and agent greeting messages. Agent greeting and pre-announce use the conferencing feature on the MiVoice Business platform to play messages to agents and callers. Agents can record and manage agent greetings using Ignite (DESKTOP).

When deploying pre-announcement and agent greeting messages with IVR Routing, you must consider the following:

- Due to the level of conferencing resources required on the MiVoice Business platform, pre-announcement and agent greeting are only supported on:
  - MiVoice Business Virtual
  - MiVoice Business on ISS systems
- A MiVoice Business controller can handle a maximum of 75 simultaneous conferences. A conference is used during:
  - Consultation calls
  - Request help sessions
  - Party calls involving 3 or more participants
  - Silent monitor and whisper coach sessions
  - The playing of agent greetings or pre-announcement messages
- The following Class of Service (COS) options must be enabled:
  - The COS for ACD Agents using pre-announcement and agent greeting must have 'Silent Monitor Accept' enabled
  - The COS for the Agent Greeting port must have 'Silent Monitor Allow' enabled
- The pool of Agent Greeting ports must reside on the same controller as the ACD Agent using the port
  - For Network ACD deployments, you must provision Agent Greeting ports on each controller with active ACD agents using pre-announcement or agent greeting messages
- Resiliency of Agent Greeting ports is currently not supported
  - Agent Greeting ports should not have a secondary element defined

NOTE: The existing pre-announcement feature is still available for agents who have Contact Center PhoneSet Manager or Contact Center Softphone. See the *MiContact Center Business User Guide* for detailed information on this feature. We recommend you do not configure pre-announcement and whisper announcements on the same system.

Port sizing for pre-announce and agent greeting

To determine the number of ports required for pre-announce and agent greetings you must compile the following information for each individual MiVoice Business controller with active ACD agents requiring pre-announce or agent greeting messages:

- The maximum number of active agents using pre-announce or agent greeting
- The average duration of a pre-announce and agent greeting message
- The peak calls per hour of the active agents using pre-announce or agent greeting

Consider the following sample configuration:

- One primary ACD controller with active ACD agents and a resilient paired MiVoice Business controller
- 150 peak active agents using agent greeting
- The average agent greeting message length is six seconds
- The contact center, during peak business hours, has each agent handling on average 15 calls per hour, for a total of 2250 calls across all agents

Using this example, we can calculate the number of Agent Greeting ports required using the following formula:

$$\#\ of\ Ports = \frac{Total\ Calls\ per\ Hour}{3600\ Seconds / (Avg.Message\ Duration + 2\ Seconds)}$$

NOTE: The addition of two seconds to the Average Message Duration allows for call processing system overhead.

The calculated number of ports, based on the example above, is as follows:

$$5\ Ports = \frac{2250\ Calls}{3600\ Seconds / (6\ Seconds + 2\ Seconds)}$$

If the number of ports includes a decimal, round up to the nearest whole number.

The final port count is five ports. To ensure port availability during MiVoice Business failure, we recommend you provision five ports on the primary and resilient controllers, resulting in a total of 10 ports.

MULTIMEDIA CONTACT CENTER

This section contains support information for Multimedia Contact Center features and applications.

Ignite

Ignite is available as either a desktop or Web version. They share much of the same functionality but also offer unique agent and supervisor experiences. In our documentation, we refer to desktop Ignite and its features as Ignite (DESKTOP) and Web Ignite and its features as Ignite (WEB) or, where appropriate, as DESKTOP or WEB only.

Devices supported over WiFi require network communication between the wireless network and the Enterprise Server. Accessing the Ignite (WEB) client over the public Internet should be done using reverse proxies. Mitel is not responsible for any data charges that result from running Ignite (WEB) over the Internet.

MiContact Center Business supports using a reverse proxy to provide access to Ignite (WEB) over the public Internet, however, there are no security features in place. Customers with security concerns should not configure Ignite (WEB) for access over the public Internet. Ignite (WEB) supports connectivity over HTTPS and this is highly recommended in external access deployment scenarios.

In order for Ignite (WEB) to function, it must reside on the Enterprise Server. In addition, if you are using Internet Explorer 10 or 11 as your browser, you must disable Compatibility Mode.

You can access Ignite (WEB) from any supported, Web-enabled device, as follows:

- Full support for tablets (Apple, Android, and Microsoft)
- Partial support for smart phones (Apple, Android, and Microsoft), including the ability to log in and out, view dashboards, change ACD state, set and remove Make Busy (Busy) and Do Not Disturb, remove Work Timer, and interact with agent states via dashboards

NOTE:

- If running Ignite (WEB) on a tablet, supervisors can view interactions in queue and manage agent states, as well as handling emails, chats, and SMS. Handling voice calls is not supported while using Ignite (WEB) on a tablet.
- If running Ignite (WEB) on a smart phone, voice interactions are possible using an EHDA configuration but call control is not supported from the Web User Interface. DTMF is required to put callers on hold. Handling emails, chats, or SMS is not supported when using Ignite (WEB) on a smart phone.

For optimum performance, when using Ignite, we recommend you do not open more than two tabs in Ignite (WEB) simultaneously.

Please note the following regarding Ignite (DESKTOP)

- Ignite supports VPN and MiVoice Border Gateway connections to the Enterprise Server.
- Ignite's phone controls are not supported for External Hot Desking Agents.
- Ignite's phone functionality does not support multiple lines.
- Calls must be made from Ignite to display in real time and reporting.

Exchange Server support

NOTE: Email routing to blind-copied queues is not supported.

Table 46 lists versions of Exchange Server that have been tested and verified.

Table 46: Tested versions of Exchange Server

EXCHANGE	COMMENTS
Exchange Online (Office 365)	IMAP must be enabled
Exchange 2010, 2013, and 2016	IMAP must be enabled

NOTE: IMAP or SMTP connections through web proxies are not supported.

Google Apps for Business support

NOTE: Email routing to blind-copied queues is not supported.

Multimedia Contact Center supports integration with Google Apps for Business email servers. You must ensure that IMAP connections are enabled and that the Enterprise Server is allowed to send mail to the email server through SMTP. When using Google 2-step Verification, ensure that an application-specific password is generated for Multimedia Contact Center and is used in your mail server configuration.

For information on configuring your Google Apps for Business account to integrate with Multimedia Contact Center, see the following Mitel Knowledge Base article: http://micc.mitel.com/kb/KnowledgebaseArticle51960.aspx.

IBM Domino support

NOTE: Email routing to blind-copied queues is not supported.

Multimedia Contact Center supports integration with IBM Domino Version 9.0.1 and greater. For information on integrating IBM Domino with your contact center, see the *Multimedia Contact Center Installation and Deployment Guide*.

NOTE: IBM Domino was last verified with MiContact Center Business Version 7.1.

Non-empty Namespace IMAP Provider support

NOTE: Email routing to blind-copied queues is not supported.

Multimedia Contact Center supports integration with IMAP providers that use non-empty Namespace. Non-empty Namespace support has been tested with BlueHost. For information on integrating a non-empty Namespace IMAP, see the *Multimedia Contact Center Installation and Deployment Guide*.

Supported simultaneous mail server connections

Multimedia Contact Center supports simultaneous mail server connections for contact centers processing emails from multiple mail servers. Up to 10 mail servers can be simultaneously connected to Multimedia Contact Center.

Supported customer browsers for Chat

The following browser versions were verified as supported for use by customers when accessing the MiContact Center Business Version 9.2 Chat capability on company websites.

- Internet Explorer (Version 11.345.17134.0)
  Note: Internet Explorer is not supported when using Contact Center Messenger Chat.
- Google Chrome (Version 70.0.3538.77)
- Safari (Version 12.0.1)
- Mozilla Firefox (Version 63.0.1, 64-bit)
- Microsoft Edge (Version 42.17134.1.0)

NOTE:

- From the customer's perspective, Internet Explorer 10 and 11 must have Compatibility View disabled in order for customers to access your company's Chat service (CCMwa/Chat).
- Modern browsers are updated frequently and often without user interaction. As a result, deployed versions of these browsers may be newer than the versions that were tested prior to the release of MiContact Center Business Version 9.2. MiContact Center Business websites should continue to function through all browser updates. If an update released by a browser manufacturer causes adverse behavior, Mitel will make every effort to resolve the issue as per support and service level agreements.

Supported MiContact Center Business Chat and Contact Us web server and SSL deployments

MiContact Center Business Chat and Contact Us web features have specific supported deployments. The following web servers are supported for deploying MiContact Center Business Chat and Contact Us:

- Apache
- Internet Information Services (IIS)

MiContact Center Business Chat and Contact Us require reverse proxies to enable requests to your corporate website to be served. MiContact Center Business Chat and Contact Us support SSL, but only in End-to-End deployment on IIS or Apache web servers.

For instructions on configuring reverse proxies in Multimedia Contact Center, see the *Multimedia Contact Center Installation and Deployment Guide*. Due to the variance in possible deployment models, it is the responsibility of sites to deploy their own End-to-End SSL setup.

The following are the supported deployments for MiContact Center Business Chat and Contact Us tested with Multimedia Contact Center:

- IIS with no reverse proxy
  CAUTION: This deployment is recommended for testing purposes only and should not be used to offer MiContact Center Business Chat and Contact Us over the Internet.
- Deployments in DMZ with firewalls:
  - IIS with reverse proxy (See Figure 16)
  - Apache with reverse proxy (See Figure 16)
  - IIS with reverse proxy and end-to-end SSL (See Figure 17)
  - Apache with reverse proxy and end-to-end SSL (See Figure 17)

NOTE: Mitel is not responsible for decreased functionality or security if MiContact Center Business Chat and Contact Us are implemented on an unsupported deployment.

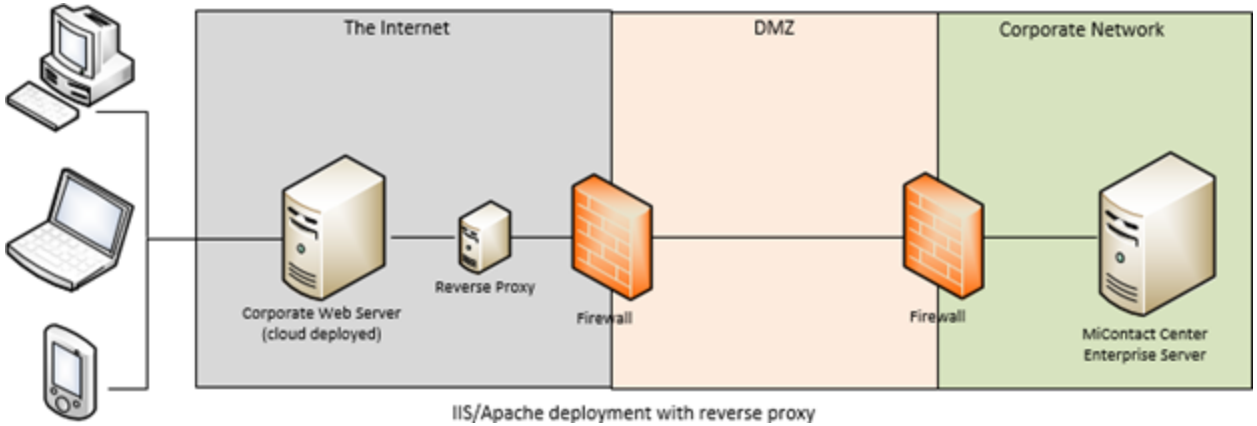


Figure 16: MiContact Center Business Chat and Contact Us reverse proxy deployment

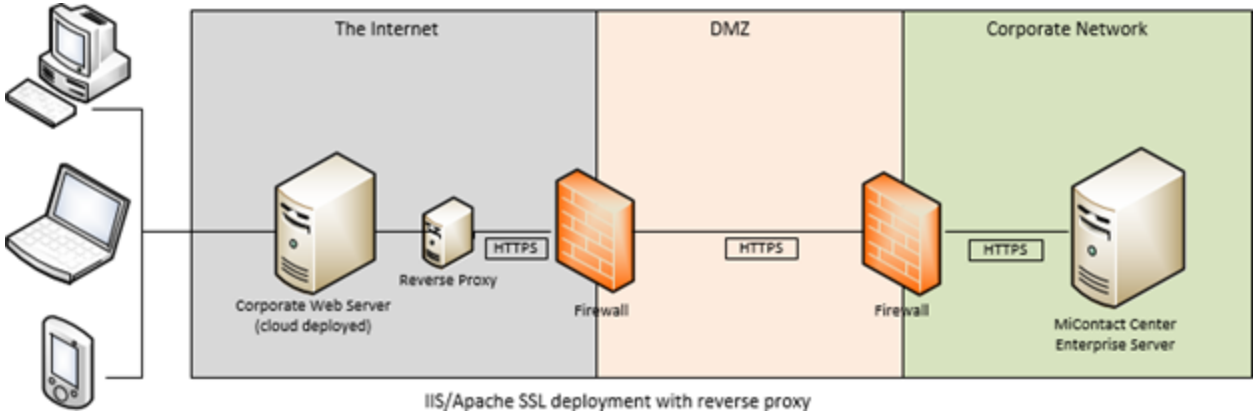


Figure 17: MiContact Center Business Chat and Contact Us SSL deployment

Statement of support for Gravatar

MiContact Center Business Chat supports avatars provided by Gravatar accounts in chat sessions. Chat JavaScript files can be configured to add Gravatar avatars to chat sessions to enable Gravatar avatars for both public users and contact center agents. Contact centers can choose to allow any public Gravatar avatar or can limit users to specified default avatars. Contact centers can also configure Gravatar accounts for their employees so that agents have unique avatars.

Gravatar must be enabled for chat sessions via your chat JavaScript configuration files. For consistency, if Gravatar is enabled for your contact center, it should be done so across the three JavaScript configuration files:

- chat.confg.DEFAULT.js
- chat.ui.agent.config.DEFAULT.js
- chat.ui.supervisor.config.DEFAULT.js

Multimedia Contact Center includes a Default Public Gravatar image for agents that can also be optionally used for customers instead of their Gravatar avatar. This image must be publically accessible on the Internet. Images being used for the Default Public Gravatar image must meet the following requirements:

- It must be publicly available.
- It must be accessible via HTTP or HTTPS on ports 80 and 443.
- It must be a .jpg, .jpeg, .gif, or .png image file.
- It must not include a querystring.

For configuration instructions for Gravatar in chat sessions, see the *Multimedia Contact Center Installation and Deployment Guide*.

SMS gateway provider support

Multimedia Contact Center integrates with the third party SMS gateway provider Twilio to support SMS interactions with contacts. With Twilio, Multimedia Contact Center supports long codes (60 SMS messages per minute per mobile number). Short codes are unsupported. MiContact Center Business does not support Multimedia Messaging Service (MMS). You must have an account with Twilio to handle SMS messages with Multimedia Contact Center.

Fax and historical SMS limitations

In 8.1, fax is supported as an email media type. However, when you upgrade to 8.1, if you need access to historical fax reports, you must generate such reports prior to upgrading as you will not be able to do so afterward.

See the *Mitel Multimedia Contact Center Installation and Deployment Guide* for more information regarding configuring fax.

SMS is supported in Version 8.0+. Historical SMS data from a pre-8.0 instance of Multimedia Contact Center will be available after an upgrade because in previous versions SMS was treated as email.

Social media integration

Multimedia Contact Center offers integration with third-party social media monitoring applications to provide uniform, knowledgeable, and responsive messaging to social media sites, industry blogs and wikis, knowledge bases, and forums. Using a third-party social media monitoring application, businesses can use advanced text analytics to detect relevant key words and phrases on social media sites and send email notifications to a skilled Multimedia Contact Center agent who can respond accordingly. This enables businesses to protect and promote their brand by identifying demoting, promoting, and influencing your business while measuring and managing the agent activity while they are responding to social media posts using the advanced real time and reporting capabilities of Multimedia Contact Center. For example, you could designate a specific agent (acting as representative of your company) to handle social media responses, set a service level objective on social media responses, and then monitor and report on that agent's handling of social media responses using Multimedia Contact Center.

The Multimedia Contact Center Social Media integration leverages existing MiContact Center Business and Multimedia Contact Center infrastructure to minimize startup costs. Customers only need an account with a third-party social media application to integrate with Multimedia Contact Center.

Mitel Multimedia Contact Center supports integration with three social media monitoring applications, Trackur, Imooty, and BizVu.

Nanospell tinymce spellchecker support

Multimedia Contact Center supports email integration with nanospell tinymce spellchecker.

NOTE: Nanospell tinymce spellchecker does not support the following languages

- Mandarin Chinese
- Russian

For information on using nanospell tinymce spellchecker when sending emails in Ignite, see the *Multimedia Contact Center Installation and Deployment Guide*.

Statement of support for Elasticsearch

Multimedia Contact Center uses Elasticsearch to support network drives (UNC paths) as the multimedia repository for storing emails. SMS and chat transcripts are stored in the Elasticsearch index. During installation, the Elasticsearch index is added to <drive>:\Program Files (x86)\Mitel\MiContact Center\Database\Elasticsearch.

For information about Elasticsearch or using Elasticsearch's capabilities outside of MiContact Center Business, consult Elasticsearch documentation available from http://www.elasticsearch.org/.

NOTE: Multimedia Contact Center Elasticsearch integration blocks Port 9200 and opens Port 9300 on the Windows Firewall. If your contact center uses a different firewall, make the corresponding changes to your firewall.

Elasticsearch supports a multi-node configuration for resiliency. For information on setting up a multi-node configuration with Elasticsearch, see the following Knowledge Base article: http://micc.mitel.com/kb/KnowledgebaseArticle52354.aspx.

Statement of support for screen readers

Multimedia Contact Center's customer-facing chat request pages and chat sessions support screen reading applications. All controls, graphics, buttons and input fields in customer-facing chat request pages and chat sessions are labeled with alternative tags for screen readers and buttons have proper hyperlink references and contain readable content needed for keyboard focus.

The following screen reader commands are built into chat request pages and customer-facing chat sessions:

- Ctrl + Alt + ? replays the current chat message
- Ctrl + Alt + Enter plays previous chat messages

When screen reader customers arrive on a chat request page, a message plays with instructions.

Multimedia Contact Center's chat request page and customer-facing chat application have been tested with the following screen reading applications and browsers:

- JAWS Version 17.0 with Internet Explorer 11 and Firefox 44.0.2
- NVDA Version 2015.4 with Firefox 44.0.2

The following Multimedia Contact Center applications and features do not support screen readers:

- Ignite, Web or Desktop
- Contact Us

Contact Center Messenger Chat Integration Overview

Contact Center Messenger chat does not require any reverse proxies to be configured and it only supports https and wss when communicating to CloudLink.

The following illustrations (Figure 18 and Figure 19) shows how Contact Center Messenger integration works with and without Google AI configured.

Note: When you use Contact Center Messenger, all traffic is initiated as outbound. If you are locking out Internet access from the server and\or clients, you may need to enable the following connections;

*https:// -> outbound from server to public internet *.mitel.io/* addresses*

*wss:// -> outbound + duplex websockets *.iot.*.amazonaws.com/* addresses*

Both the above connections are TLS over standard port 443 and both apply to Web Ignite (Client and MiCC Server) and Cloudlink Proxy Web Service (MiCC Server only).

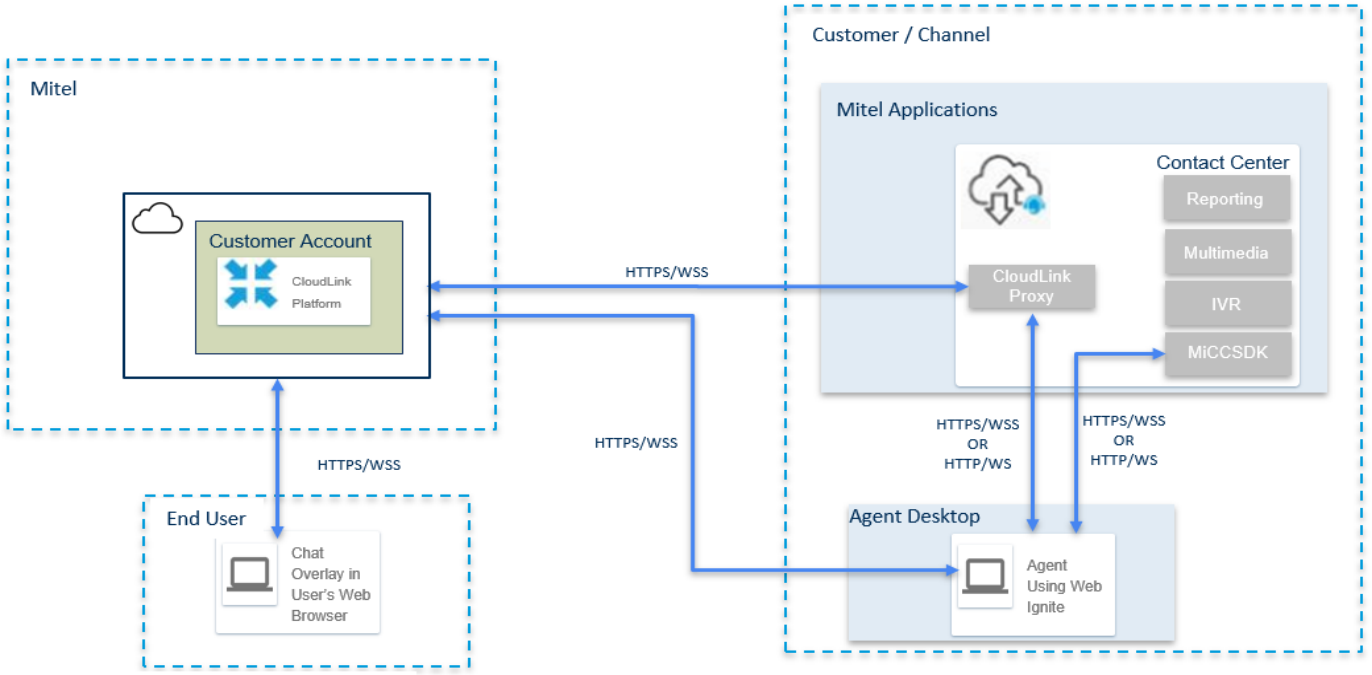


Figure 18: Contact Center Messenger Chat Integration when not configured to use Google AI features

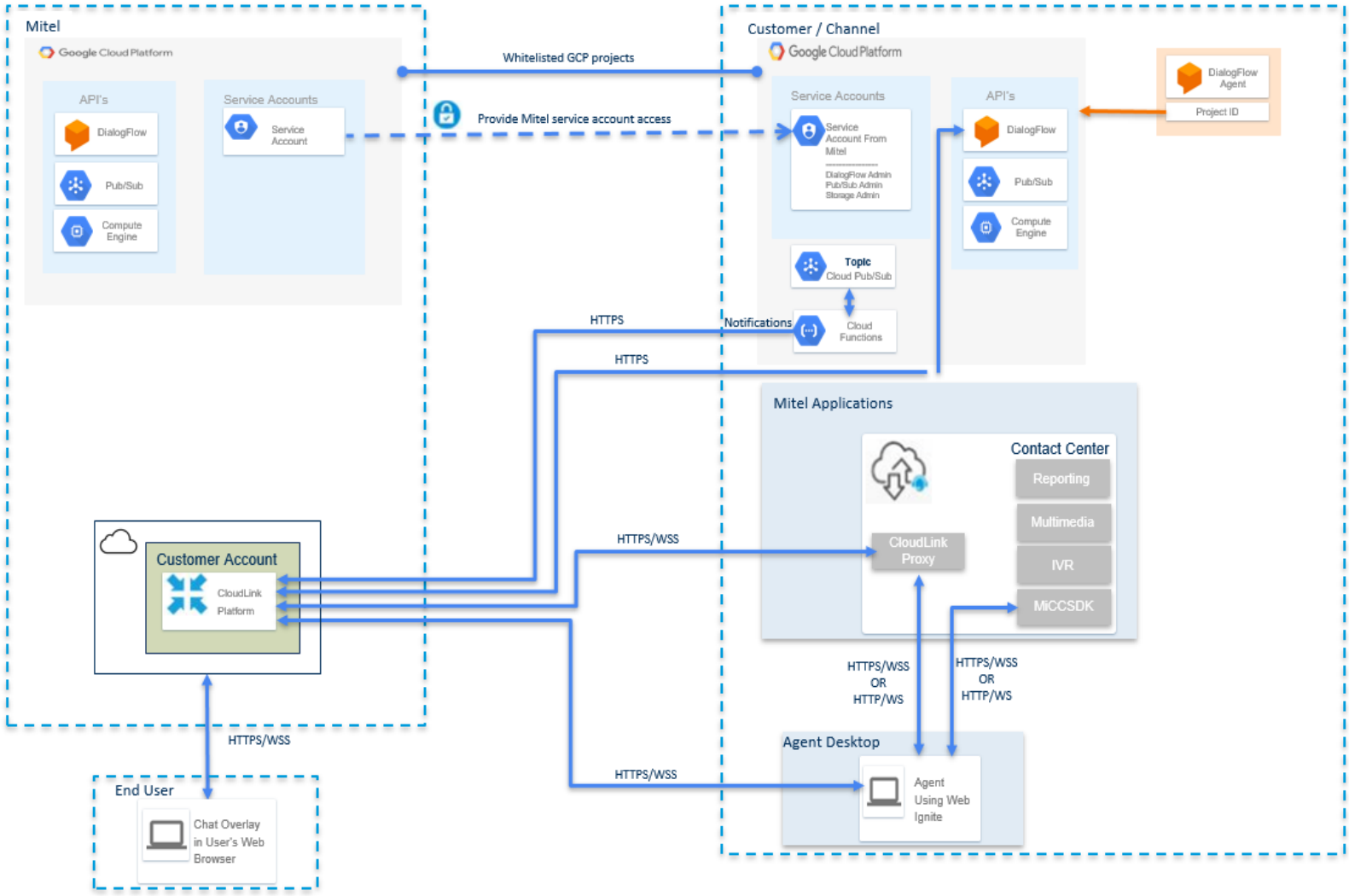


Figure 19: Contact Center Messenger Chat integration when configured to use Google AI features

CONTACT CENTER PHONESET MANAGER AND CONTACT CENTER SOFTPHONE

If you will deploy more than 750 contact center soft phones (Contact Center PhoneSet Manager or Contact Center Softphone), please contact your local Mitel Sales Engineer. Several performance variables, such as call traffic and other Mitel applications being used with MiVoice Business, must be considered.

Supported handsets for Contact Center PhoneSet Manager

MiContact Center Business and MiVoice Analytics software integrates with a variety of Mitel handsets, such as:

- 5212
- 5220
- 5224
- 5320e
- 5324
- 5330, 5330e
- 5340, 5340e
- 5360
- 6920
- 6930
- 6940

NOTE: MiContact Center Business supports only MiNET versions of 6920, 6930, and 6940 phones.

Tested headsets

The following headsets have been tested with Contact Center Softphone and are supported as audio devices only:

Plantronics models:

- Plantronics USB Headset – Savi D100/W430: Current
- Plantronics USB Headset – Blackwire
- C420

- C600 family
- Plantronics USB Headset – DA4
- Plantronics USB Headset – BUA 100

Jabra models:

- Jabra GN 9330e USB
- Jabra GN 2000 USB
- Jabra BIZ 2400 USB Duo MS

Support for pre-announcement messages

If you use Contact Center Softphone, you record pre-announcement messages in Contact Center Client on the soft phone toolbar. If you use Contact Center PhoneSet Manager, you must use a PCTI adapter.

A PCTI adapter enables the mixing of audio played from the PC and audio being spoken through a Mitel deskphone or headset connected to the PC.

Pre-announcement functionality is not supported using Contact Center PhoneSet Manager in regions other than North America. Customers outside of North America must use Contact Center Softphone to enable pre-announcement messages.

Currently, Contact Center Softphone only supports the Andrea Electronics PCTI 3-Way: Personal Computer Interface.

For detailed instructions on configuring the PCTI adapter for use with Contact Center PhoneSet Manager, see the *MiContact Center Business User Guide*.

STATEMENT OF SUPPORT FOR RING GROUPS

MiContact Center Business and MiVoice Analytics support Ring Groups with the following specifications:

- Ring Groups require a minimum of MiVoice Business 7.0. Customers running versions of MiVoice Business lower than 7.0 using Ring Groups may have real-time and reporting statistics populate based on their Ring Groups, but these statistics are not supported and will be inaccurate due to changes in the data provided by MiVoice Business.
- MiContact Center Business and MiVoice Analytics Version 8.1+ do not support Call Forward Always *from* Ring Groups. Call Forward Always *to* Ring Groups is supported.
- Clustered Ring Groups are not supported. Ring Groups, their extensions, interflow points, and any IVR ports transferring to Ring Groups must be on the same media server.
- Prime DNs and hot desking users are supported as members of Ring Groups.
- Personal Ring Groups are not supported.
- We recommend that calls to Ring Groups come in and remain on the same telephone system.

WEB CLIENT NOTES

The following MiContact Center Business web applications can be streamed via the MiVoice Border Gateway to create web accessible connections to the contact center server:

- CCMWeb
- Web Chat and Contact Us (using the MiVoice Border Gateway as the reverse proxy)
- Web Ignite

NOTE: This implementation requires, at a minimum, MiVoice Border Gateway Version 9.3.

See the *MiVoice Border Gateway Installation and Maintenance Guide* for configuration details.

STATEMENT OF SUPPORT FOR SIP TRUNKING

SIP trunking is compatible with all MiContact Center Business and MiVoice Analytics applications.

SIP trunking requirements and limitations

MiContact Center Business, MiVoice Analytics, and Traffic Analysis trunk performance reports are limited in the following ways:

- Individual SIP trunk performance may not be reported on in MiContact Center Business and MiVoice Analytics because all SIP trunk performance is consolidated into a single carrier view.
- Trunk group busy reports and all trunk performance reports that detail individual trunk data are unavailable.
- Traffic Analysis trunk reports are not supported.

E2T channel consumption is not circumvented when SIP trunks are deployed in a contact center. Ensure E2T consumption is considered when engineering sites with SIP trunks.

If you use external outbound SIP trunks, they must be programmed with a unique reporting number and not the default x9999.

For further information on SIP trunking compliance, see Technical Service Bulletin 09-5127-00016.

INTERACTIVE CONTACT CENTER AND INTERACTIVE VISUAL QUEUE

Table 47 lists the telephone system hardware and software components required for Interactive Contact Center.

Table 47: Telephone system requirements for Interactive Contact Center

REQUIREMENTS COMPONENT	MiVOICE BUSINESS
MiTAI/HCI - Basic Telephony Feature package software option	Required
MiTAI/HCI - Advanced Telephony Feature package software option	Required
Mitel Applications Capacity Level (MiTAI/HCI Traffic) option	Required
Class of Service Options Assignment Form - Group Presence Control	Required
Class of Service Options Assignment Form - Group Presence Third Party Control	Required

WALLBOARDER SUPPORT

MiContact Center Business integrates with Spectrum wall signs to provide real-time performance statistics and text messages on one or more Spectrum Light Emitting Diode (LED) wall signs.

MiContact Center Business supports Spectrum LED wall signs only.

NOTE: Wallboarder is not supported in a Windows Server 2012 R2 environment in MiContact Center Business Version 8.0+.

For more information on Wallboarder functionality and configuration details, see the *MiContact Center Business Installation and Administration Guide*.

MiVOICE BORDER GATEWAY SUPPORT

Using MiVoice Border Gateway, remote employees can connect to the Enterprise Server using a VPN-like connection, and use all MiContact Center Business and MiVoice Analytics applications as if they were in the office.

With the MiVoice Border Gateway Connector, customers can now optionally configure connections to multiple instances of the MiVoice Border Gateway. When employees connect to the system using the MiVoice Border Gateway Connector, they can specify which MiVoice Border Gateway they will connect to. After remote employees attempt to connect to the system for the first time, a MiVoice Border Gateway system administrator must approve the MiVoice Border Gateway certificate from the MiVoice Border Gateway web application. Once approved, remote users are connected and have access to all of the MiContact Center Business and MiVoice Analytics applications for which they are licensed and have the required security permissions. While active, the MiVoice Border Gateway Connector is visible in the Windows system tray and displays the name of the active connection. Only one connection can be made at a time. The name of the MiVoice Border Gateway connection will become the address in all application login windows and users sign in with their normal username and password.

The MiVoice Border Gateway Connector offers the same trusted characteristics as a standard MiVoice Border Gateway deployment: local streaming, secure RTP, jitter buffering and packet handling QoS, and G.729 and G.711 encoding. For more information on how to configure MiContact Center Business and MiVoice Analytics software to support MiVoice Border Gateway, see the *MiContact Center Business Installation and Administration Guide*.

NOTE:

- The MiVoice Border Gateway Connector supports MiVoice Border Gateway Versions 8.0, 9.0, 9.1, 9.2, 9.3, 10.0 SP2, and 11.0.
- The following corporate firewall ports must be open in order to take advantage of the full features and functionality provided by the MiVoice Border Gateway Connector: 80, 443, 1433, 5024, 5025, 5026, 5030, 6802, 7001, 7003, 8083, 8084, 36000-36004, 35001-35007, and 42440.
- On client machines, you must disable any application or service using port 80 (for example IIS and SQL Server Reporting Service). Port 80 is required for the MiVoice Border Gateway Connector. Any other applications or services that consume port 80 should also be disabled or shut down.
- Ensure the Start button is enabled at all times on the MiVoice Border Gateway web application user interface or the MiVoice Border Gateway Connector will fail without error.
- The MiVoice Border Gateway Connector is not supported for use in conjunction with MiContact Center Business / MiVoice Analytics Windows Authentication sign-in model. Windows Authentication requires direct access to a domain controller on the network and therefore a VPN solution must be used if you want to use the MiVoice Border Gateway Connector remotely.
- You must be logged in as an administrator on a client computer in order to configure a connection to a MiVoice Border Gateway. Once the connection has been made, any user on the computer can connect using the MiVoice Border Gateway Connector.

The following MiContact Center Business web applications can be streamed via the MiVoice Border Gateway to create web accessible connections to the contact center server:

- CCMWeb
- Web Chat and Contact Us (using the MiVoice Border Gateway as the reverse proxy)
- Web Ignite

NOTE: This implementation requires, at a minimum, MiVoice Border Gateway Version 9.3.

See the *MiVoice Border Gateway Installation and Maintenance Guide* for configuration details.

Client requirements

To be fully integrated members of the primary office site, remote agents and employees require

- An IP phone or a USB headset (for Contact Center Softphone) or be configured as an External Hot Desking Agent
- A computer
- A router
- A high-speed Internet connection

STATEMENT OF SUPPORT FOR MiVOICE INTEGRATION FOR SALESFORCE

MiContact Center Business integrates with Mitel Open Integration Gateway and MiVoice Integration for Salesforce to manage interactions between MiContact Center Business and Salesforce.com. Calls route through the MiContact Center Business server, where information is collected from the customer. If licensed for IVR, customer-entered digits can be collected and Salesforce can be used as a data provider for IVR workflows. The information is then passed from MiContact Center Business to the Mitel Open Integration Gateway server and presented to the agent in MiVoice Integration for Salesforce.

For information about MiVoice for Salesforce Integration, see the *MiVoice Integration for Salesforce Administration Guide* and the *MiVoice Integration for Salesforce User Guide*.

NOTE: If you are using Windows Authentication, the email address configured under the user in Salesforce must match the email address configured for the corresponding employee in YourSite Explorer.

MiVoice Integration for Salesforce can run in Standard or Console mode in Salesforce. If the contact center requires multiple tabs in Salesforce, the contact center must run Salesforce in Console mode. Running in Console mode may require additional configuration in Salesforce to optimize the console for ACD agent use. Console mode is available based on the following Salesforce licenses:

- Enterprise, Performance, Unlimited, and Developer editions in Service Cloud
- Performance and Developer editions with Sales Cloud
  NOTE: Console mode is also available in Enterprise and Unlimited editions with Sales Cloud for an extra cost.

For more information about Salesforce, visit www.salesforce.com.

STATEMENT OF SUPPORT FOR SALESFORCE.COM CONNECTOR

NOTE: Support for the Salesforce.com Connector is being discontinued by Salesforce.com and is being replaced by the MiVoice Integration for Salesforce. Post-8.x, the Salesforce.com Connector will no longer be available and all new customers will be expected to use the MiVoice Integration for Salesforce instead.

For more information about Salesforce, visit www.salesforce.com.

THIRD-PARTY SOFTWARE INTEGRATIONS

MiContact Center Business and MiVoice Analytics software integrate with a variety of third-party software products. It is the responsibility of the customer to ensure that any third-party application meets the requirements provided by the third-party vendor. Installation, configuration, support, and maintenance is to be provided by the third-party vendors only and is not the responsibility of Mitel Networks.

NOTE: As of Version 7.0, the CTI toolkit application uses .NET Framework 4.5. Upon upgrade to Version 7.0 or greater, any third-party products that use the CTI Toolkit will need to be recompiled using the latest CTI Toolkit dlls.

STATEMENT OF PCI COMPLIANCE SUPPORT

IVR Routing and PCI compliance

IVR Routing offers tools for building workflows compliant with the Payment Card Industry (PCI) Data Security Standard. All efforts have been made to ensure that data collected in IVR Routing is protected as per the guidelines outlined by the PCI Security Standard Council. IVR Routing can be configured to secure customer data as follows:

- Customer data can be masked to prevent viewing by others
- During IVR collection of digits, agents can be placed on hold and cannot listen in to hear DTMF tones
- Data collected is not retained in memory or on a physical drive
- A secure socket connection is supported to securely transfer card data to a 3rd party system

In addition, access to the IVR for administration is both licensed and protected by unique logins that can be authenticated by SQL or Active Directory depending upon the implementation. Only authorized users can access system programming data and each administrator has their own unique secure login access. As a result of these security features, IVR Routing covers the following PCI Data Security Standard requirements:

- Requirement 3: Protect stored cardholder data
- Requirement 4: Encrypt transmission of cardholder data
- Requirement 7: Restrict access to cardholder data by business need to know
- Requirement 8: Identify and authenticate access to system components

Contact centers using IVR Routing are responsible for verifying they meet PCI requirements.

In addition, MiVoice Business, by default, encrypts all Real Time Protocol and signaling traffic using the 128 bit AES block cypher. This meets the requirements of PA-DSS 3.31 to use strong cryptography to render all payment application passwords unreadable during transmission.

As IVR Routing runs on a Windows Server operating system, additional security techniques can be used to support IVR Routing's security features, such as encrypting the hard drive with Bitlocker, applying regular Windows Updates, and using anti-virus software.

IVR Routing runs in a network environment and should be protected from unauthorized connectivity using standard network security techniques such as firewalling and Access Control Lists (ACLs) to ensure PCI compliance. If a network has a designated PCI Zone, IVR Routing can be located within that zone.

Multimedia Contact Center and PCI compliance

Multimedia Contact Center does not have inherent support for PCI compliance and it is not recommended that Multimedia Contact Center email or chat be used to process secure transactions. As a best practice, as customers may attempt to submit sensitive personal information over a chat or email, it is recommended that a statement be added to your multimedia workflows (such as with a Say activity in a chat workflow or an Email activity in an email workflow) that informs customers that they should not enter sensitive information. For example:

"For security purposes, please do not submit credit card numbers or bank account information through our live chat or email services. Your transactions can be securely processed by calling our 24-hour customer service line."

This mitigates the risk of personal data being collected and stored.

STATEMENT OF SUPPORT FOR HIGH AVAILABILITY, DISASTER RECOVERY, AND BUSINESS CONTINUITY

The following are not supported:

- Physical to Virtual architecture
- SIP platforms (MiVoice Office 400, MiVoice 5000, MiVoice Connect, Microsoft Skype for Business)
- MiContact Center Business installed on Windows Server 2008 R2 SP1 (64-bit)
- Any voice scenario not supported by MiVoice Business. Please refer to their documentation.
- Using Neverfail to protect MiContact Center Business servers without applying the MiContact Center Business High Availability license.
- Using Neverfail to protect remote servers.
- Any environment that is not supported by Neverfail. See the Neverfail documentation.
- Architectures that do not meet the requirements as stated in the Server Deployment Architecture Options in the Installation Guide for Neverfail Continuity Engine. An example of an architecture that is not supported is to have both virtual machines in a virtual-to-virtual pair on the same ESX host.

Note the following with regard to MiContact Center Business version 9.2:

- It is possible to receive a duplicate email for processing if a failover occurs between the time of downloading the email and updating its state on the mail server.
- if the Enterprise Server is offline, calls coming in through a remote IVR will still be handled, but the agent experience will be different. There will be no searchable voice interaction, no case number, no notes, and no contact information.
- Note that real-time events from the PBX will not be received and processed while the MiCC server is offline. This information is lost. For example, this can result in a call still present in an agent's inbox even if the call ended while the MiCC server was offline. Another example is if an agent completes one call and accepts another call during failover, this will look like only one call in the statistics.
- If the agent state changes while the MiCC Server is offline, this is not reflected after the system comes online. This corrects itself if the agent logs out and logs back in, or receives a new call state change.
- Caller is in queue while a failover occurs who were hearing UPIQ (updated position in queue) messages before the failover, they will not continue to hear UPIQ messages after the failover for their duration of time in the queue. New callers into the queue after the failover hear the UPIQ messages.
- When the Enterprise Server restarts, by default it replays the day's data to bring the system back to the last known state. If a failover occurs on a day when there is no activity by an agent for the entire time before the failover, the agent will show as offline in Contact Center Client (CCC) and Web Ignite although calls will still be presented to the agent. This incorrect state will be automatically corrected once a call is presented to the agent. Also, the agent can manually set their state as available. The default amount of data to replay after the Enterprise Server restarts is configurable by changing an EnterpriseServer.config option. To avoid having the agent state being incorrect, this could be set so that the replay begins from a time when the agent is known to be active, for example, the day before the failover. However, note that increasing this will increase the amount of time required to recover from a failover.
- If a High Availability license is added on an existing MiCC system which is using IP addresses instead of FQDN, please log into YSE and change the system to use FQDN. This is needed so that clients and remote servers can connect automatically to the Enterprise Server after a failover or switchover.
- Note that upgrades are outside the scope of this solution. There will be downtime while the servers are being upgraded.