MiCONTACT CENTER BUSINESS- SIP

Release 9.2 SP1
System Engineering Guide

Mitel®

NOTICE

The information contained in this document is believed to be accurate in all respects but is not warranted by Mitel Networks™ Corporation (MITEL®). The information is subject to change without notice and should not be construed in any way as a commitment by Mitel or any of its affiliates or subsidiaries. Mitel and its affiliates and subsidiaries assume no responsibility for any errors or omissions in this document. Revisions of this document or new editions of it may be issued to incorporate such changes.

Trademarks

System Engineering Guide

Release 9.2
September 2019
Document Version 9.2

MiCONTACT CENTER BUSINESS

This guide describes the MiContact Center Business SIP implementation. For a list of supported systems, see "Supported telephone systems" on page 71.

The Mitel MiContact Center Business portfolio is composed of MiContact Center Business (available in two licensing bundles: Workgroup and Contact Center) and IVR Routing. For more information on licensing, see "Licensing" on page 47.

- **Contact Center**
  Contact Center is the licensing level of choice for businesses with more than 100 concurrent agents, who require more than 10 IVR endpoints. 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 endpoints. 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.
- **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 and is an add-on option for Workgroup. 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 57.

ABOUT THIS GUIDE

The *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 volume, this section helps you to determine the hardware required for the server based on Tier 1 and Tier 2 deployment models. This section also provides recommendations for collocating server applications.
- **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.
- **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 is also discussed here.
- **Bandwidth and storage requirements**
  This section 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.

To report an issue with this document, please email techpubs@mitel.com.

SEARCHING FOR KEY WORDS AND TOPICS

You can search for content in this PDF by using the search function built into Adobe Acrobat or Reader. Consult your Adobe documentation for other search options.

To search for a key word or topic

1. In the open PDF, press **Ctrl+F**.
   Alternatively, right-click in the document and select Find.
2. Type the key word or topic for which you want to search.
3. Press **Enter**.
4. Navigate the results by clicking the **Next** or **Previous** buttons.

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 documentation library includes the following guides. The latest version of each guide is available from http://edocs.mitel.com or Mitel Connect=>InfoChannel=>Worldwide=>Products and Solutions=>MiContact Center=>MiContact Center Business.

- *MiContact Center Business User Guide*: provides information on the use of all agent and supervisor desktop applications within the MiContact Center Business suite. This guide focuses on voice media.
- *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
  - All IVR Routing configuration

- *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 contact volume
  - Recommendations for collocating server applications
  - System requirements, including server and client hardware and software requirements
  - Server and client virtualization details and best practices
  - Performance and scalability details, including verified capacity results for all media types (alone and blended) and IVR Routing scalability
  - 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.
- *MiContact Center Business Deployment Guide*: discusses the following topics:
  - Solution licensing
  - Deployment topologies
  - Call handling infrastructure

MiCONTACT CENTER BUSINESS DEPLOYMENT MODELS

The hardware required to run your server successfully depends on the role it will play in your environment. You can determine the number of servers you will require based on the following:

- **Contact volume:** The number of contacts being handled affects the level of hardware required.

DEPLOYMENT MODELS BASED ON VOLUME

Refer to the figure below to determine your server hardware requirements based on volume. Your deployment should fit into one of the server configurations described in this section (Tier 1 or Tier 2).

The volume of interactions per hour and active agent count have the greatest impact on performance and help determine which server specification to deploy.

See "Server hardware requirements" on page 12 for Tier 1 and Tier 2 server requirements.

RECOMMENDATIONS FOR COLLOCATING SERVER APPLICATIONS

MiContact Center Business requires collocation of contact center roles and their supporting solution technologies.

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 36.

IVR and ACD routing recommendations

By design, IVR and ACD routing are collocated on the Enterprise Server. Each IVR Routing server can handle a maximum of 5400 calls per hour and a maximum of 90 simultaneous calls.

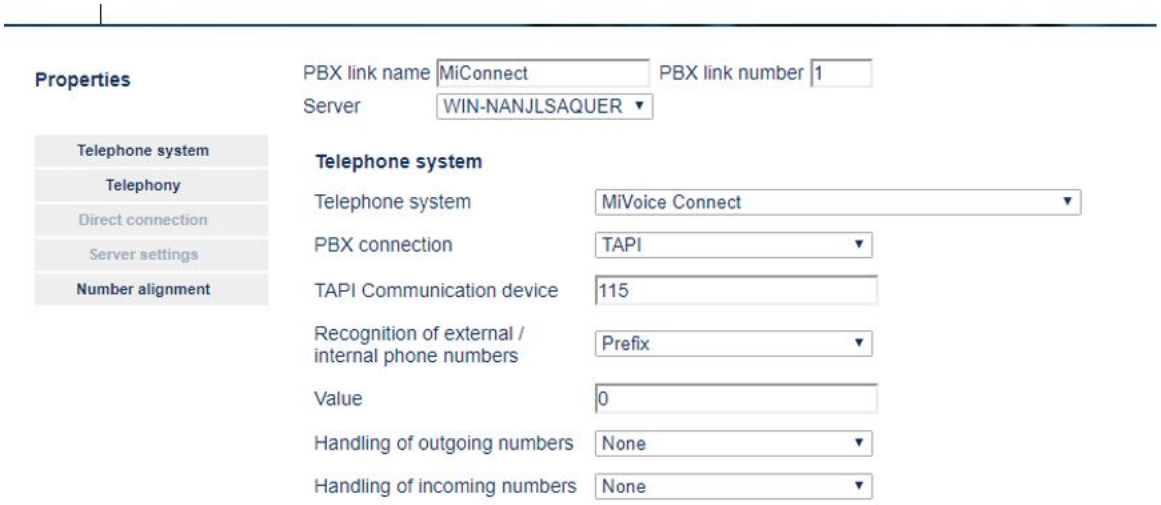
BluStar Server recommendations

To facilitate CTI server functionality on the MiVoice Office 400, MiVoice 5000, and MiVoice Connect telephony platforms, the BluStar Server service must be installed on the MiContact Center Business Server. The BluStar Server service should be treated as a pre-requisite component when planning to deploy CTI server functionality as part of a MiContact Center Business deployment. As such, it is recommended to install the BluStar Server service before installing the MiContact Center Business Server software. BluStar Server service is available from the Mitel Knowledge Management System.

The BluStar Server service enables CTI server functionality for extension monitoring and provides a communication channel to execute call control features on sets registered to the telephone platform. The MiContact Center Business Server facilitates call control functionality through the MiContact Center Data Collection service, which is relayed to the telephony platform by the BluStar Server. A sample CTI command routing from an agent wishing to answer a call using a desk set is displayed in the following figure.

NOTE:

- For MiVoice Connect you must install the BluStar Server only on the Connect Server, as the BluStar server needs to connect to the Connect server using TAPI instead of CSTA.



- For MiVoice Connect, you must select " Generic PBX" option from the listed options on the first screen of installation.

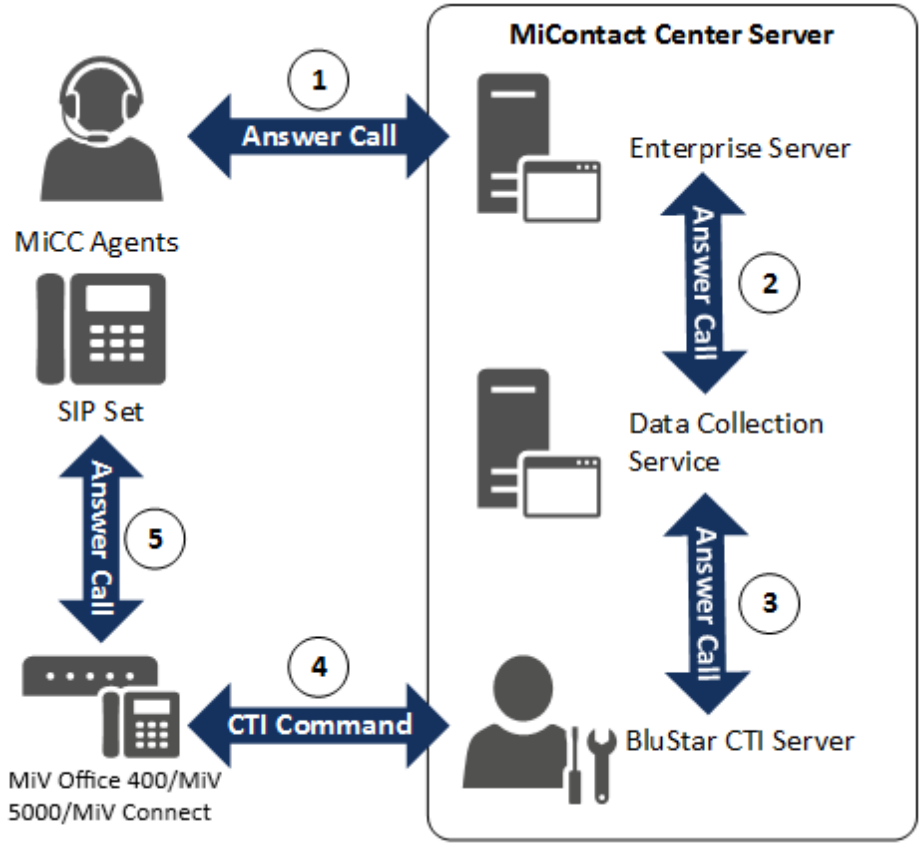


Figure 1: Sample CTI command routing with BluStar CTI Server

Microsoft SQL Server recommendations

A local Microsoft SQL Express instance is required on the 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 36.

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.

TYPICAL DEPLOYMENT SCENARIOS

The following figures outline two typical deployment scenarios:

- A basic MiContact Center Business deployment with collocated SQL Express, with voice, email, and SMS multimedia capabilities
- A more advanced MiContact Center Business deployment utilizing an existing SQL Server infrastructure, with voice, email, SMS, and chat multimedia capabilities

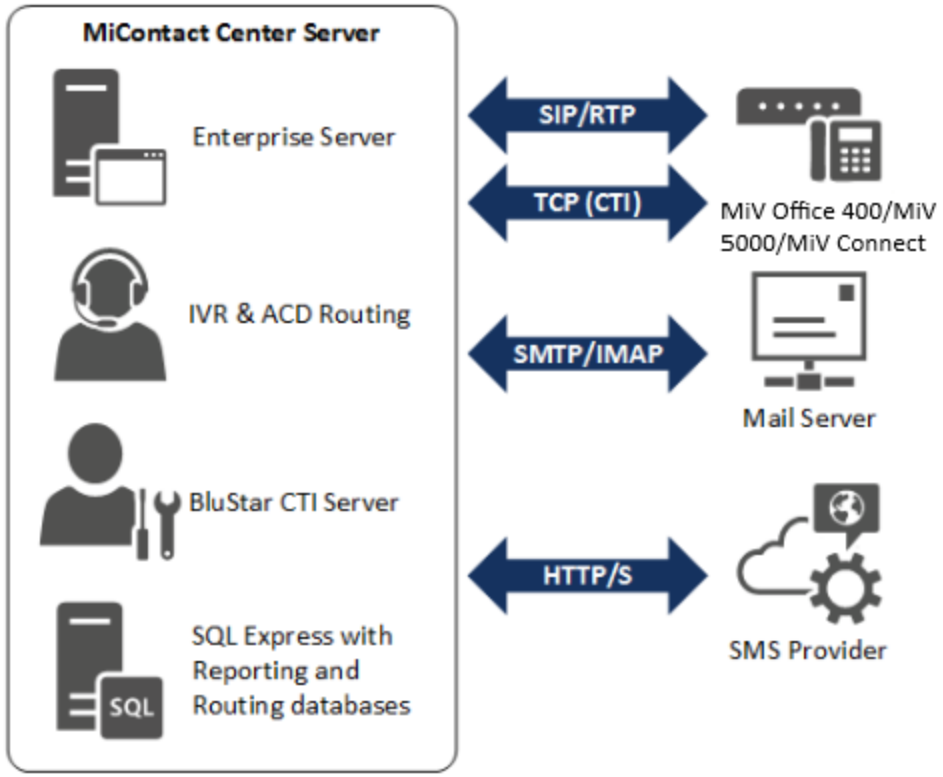


Figure 2: A basic MiContact Center Business deployment with voice, email, and SMS

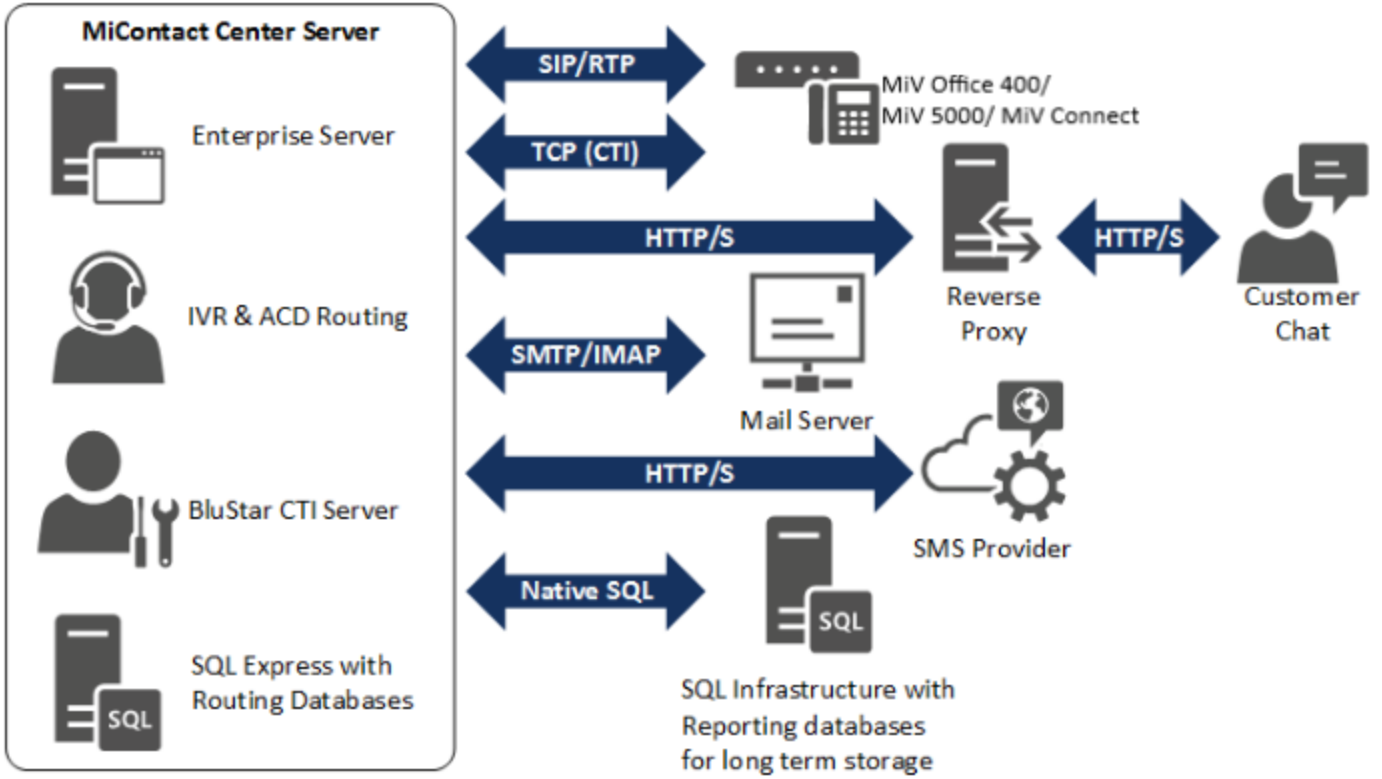


Figure 3: An advanced MiContact Center Business deployment with voice, email, MiContact Center Business chat, and SMS

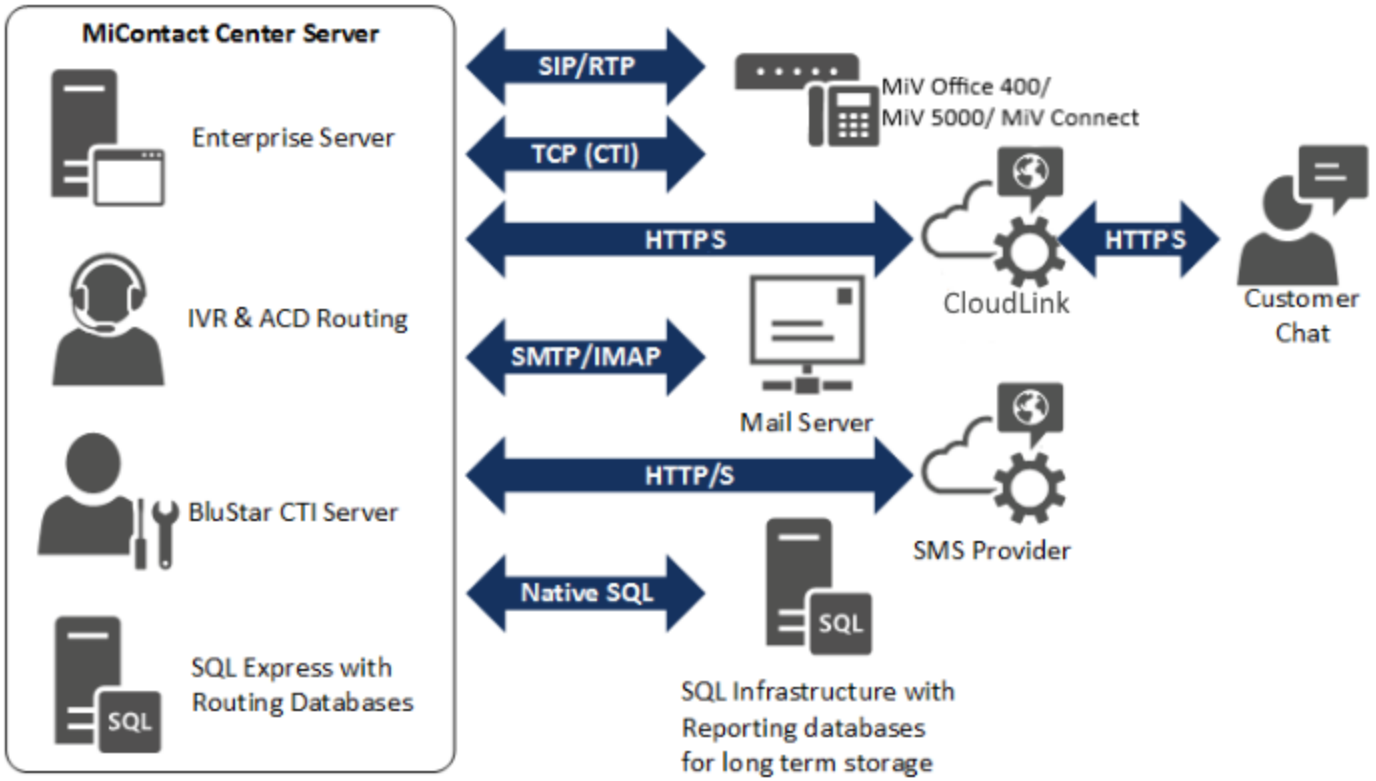


Figure 4: An advanced MiContact Center Business deployment with voice, email, Contact Center Messenger chat and SMS

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 supports 64-bit servers only. The following table describes the hardware requirements for a 64-bit server.

To determine which server you require, carefully consider the information outlined in "MiContact Center Business deployment models" on page 4 and "Performance and scalability" on page 29 . If any of the criteria described in Table 1 is applicable to your business, you require the highest corresponding hardware specifications. For example, if your active agents count exceeds 100 but your traffic falls below 2700 interactions per hour, you must adhere to the Tier 2 system requirements.

See"Performance and scalability" on page 29 for more information.

Table 1: Server requirements

HARDWARE	TIER 1	TIER 2
CPU cores	6 @ 2.0GHz	8 @ 2.0GHz
Memory	12 GB	16 GB
Storage	See "Bandwidth and storage requirements" on page 36	
Criteria		
Conversations per hour limit	Less than 2700	Up to 5400
Active agents limit	Less than 100	Up to 200

SERVER SOFTWARE REQUIREMENTS

The following table defines which software technologies are supported or required by MiContact Center Business 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 2: Supported server software technologies

SOFTWARE	NOTES
Operating Systems	
Windows Server 2019 Standard and Datacenter	
Windows Server 2016 Standard and Datacenter	**NOTE**: Microsoft Windows Server 2016 Essentials is not supported.

Table 2: Supported server software technologies (continued)

SOFTWARE	NOTES
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 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	
VMware Horizon 7.4.0	
Citrix XenApp/XenDesktop 7.18	

Table 2: Supported server software technologies (continued)

SOFTWARE	NOTES
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 3 describes our minimum requirements for client hardware.

Table 3: Client hardware requirements

SPECIFICATIONS

	Profile: **Single usage of Contact Center Client, CCMWeb, or YourSite Explorer, Ignite (WEB)**	**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 does not support display configurations using 3 or more monitors.	
Network interface	Bytes Rec/sec : Avg : 6,796 / Max : 65,936 Bytes Sent/Sec : Avg : 4,165 / Max : 88,431 Bytes Total/Sec : Avg : 10,961 / Max : 96,421	

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 3. 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 3.

CLIENT SOFTWARE REQUIREMENTS

Table 4 defines which software technologies are supported by MiContact Center Business 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 16. 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 4: 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 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 4: 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

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.

The following products and softwares are supported in MiContact Center Business9.2 :

- MBG 11.0, 10.1, 10.0 SP2, 9.3, 9.2, 9.1
- MiCollab 9.0, 8.1 SP1, 8.1, 8.0 SP1
- MiV-CR 9.2 SP2, 9.1 SP4, 9.0
- Windows 10, 8.1, 8, 7
- Microsoft SQL Server 2017, 2016, 2014
- Microsoft Hyper-V (Windows Server 2016, 2012R2, 2012)
- VMware ESX 6.7, 6.5, 6.0
- VMware Horizon 7.4.0
- Citrix XenApp/ XenDesktop 7.18
- Nuance 6
- Microsoft CRM 2013

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.

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.

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 9.2 supports 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 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 server being starved of processor resources or the hypervisor providing a lower processor priority for the MiContact Center Business guest operating system instruction execution. When the MiContact Center Business server is starved for resources, you may experience the following adverse effects:

- Degradation of audio quality in IVR, when listening to music on hold and queue announcements, and during voice calls
  Note: When MiVoice Business is the telephony platform, Music on Hold is provided by the MiVoice Business and not the IVR. For MiContact Center Business SIP platform, Music on Hold is provided by the IVR.
- Delays of call control commands such as answering calls, transfers, and ending calls
- Delays of user interface notifications of new interactions in Ignite

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 is 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.

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*.

CLIENT VIRTUALIZATION

Client-side virtualization falls into two categories:

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

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 (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 (WEB) with Contact Center Client

Citrix XenApp

Client virtualization was been validated for Citrix XenApp version 7.18 and Citrix XenServer version 6.5, with MiContact Center Business Version 9.2.

Our verification testing environment consisted of the following:

- Client testing with Windows 8 operating systems and all current Windows updates
- Server 2012 R2 for XenApp controller server
- XenServer 6.5 virtual machine image to host applications
- MiContact Center Business 9.2 Server

The Citrix software used was:

- XenApp 7.18
- XenServer 6.5

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

- YourSite Explorer
- Contact Center Client
- MiCollab Client Softphone

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

The following feature is not supported:

- 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 70.

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:

- Contact Center Client

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

- YourSite Explorer
- 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 16 and "Client software requirements" on page 17.

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 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.

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 10.2
- 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 agent and interaction traffic capacity results displayed below 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.

Note: WFM connector is supported for MiVoice 400, MiVoice 5000, and MiVoice Connect systems.

MiVoice 5000

In a fully blended media environment (one using voice, email, chat, and SMS) the MiContact Center Business Enterprise Server can handle a maximum of:

- 200 concurrently logged in and active agents
- 5400 voice interactions in the busy hour
- 600 emails in the busy hour
- 200 total combined chats and SMS interactions in the busy hour
- 165 concurrently active chat / SMS sessions
- 300 calls concurrently waiting in queue
- 148,800 total interactions per day

This represents a total allowed maximum of 6200 total interactions across all media types in the busy hour. No single media can exceed the maximums outlined above, and the combined traffic within a 24-hour period cannot exceed 148,800 total interactions per day.

MiVoice Office 400

In a fully blended media environment (one using voice, email, chat, and SMS) the MiContact Center Business Server can handle a maximum of:

- 50 concurrently logged in and active agents
- 1350 voice interactions in the busy hour
- 600 emails in the busy hour
- 200 total combined chats and SMS interactions in the busy hour
- 165 concurrently active chat / SMS sessions
- 300 calls concurrently waiting in queue
- 51,600 total interactions per day

This represents a total allowed maximum of 2150 total interactions across all media types in the busy hour. No single media can exceed the maximums outlined above, and the combined traffic within a 24-hour period cannot exceed 51,600 total interactions per day.

MiVoice Connect

In a fully blended media environment (one using voice, email, chat, and SMS) the MiContact Center Business Enterprise Server can handle a maximum of:

- 200 concurrently logged in and active agents
- 5400 voice interactions in the busy hour
- 600 emails in the busy hour
- 200 total combined chats and SMS interactions in the busy hour
- 165 concurrently active chat / SMS sessions
- 300 calls concurrently waiting in queue
- 148,800 total interactions per day

This represents a total allowed maximum of 6200 total interactions across all media types in the busy hour. No single media can exceed the maximums outlined above, and the combined traffic within a 24-hour period cannot exceed 148,800 total interactions per day.

Note: MiCollab is not supported for MiVoice Connect.

VERIFICATION ENVIRONMENT

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

- MiContact Center Business in Tier 2 server configuration (Virtual Guest)
- MiVoice Office 400 Version 6.0, 5.0
- MiVoice 5000 Version 6.5 SP1, 6.5, 6.4 SP1
- **MiVoice Connect Version R1909**
- VMware ESXi 6.0 , 6.5
- Windows Server 2019, 2016, 2012R2, 2012
- Microsoft SQL Server 2017, 2016, 2014
- HP Proliant DL360 Generation 9 (Virtual Host Machine)
  - 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 configuration is described in the following table:

Table 5: Verification environment components

MEDIA TYPE	QUEUES	AGENTS	AGENT GROUPS	MAILBOXES
Voice	20	200	20 Each agent in 1 group, each group has 10 agents	n/a
Email	20	200	20 Each agent in 1 group, each group has 10 agents	1 Receiving emails from 20 unique distribution groups
Chat/SMS	20	200	20 Each agent in 1 group, each group has 10 agents	n/a

VERIFICATION TOPOLOGY

The following figure demonstrates the verification topology of the MiContact Center Business performance lab:

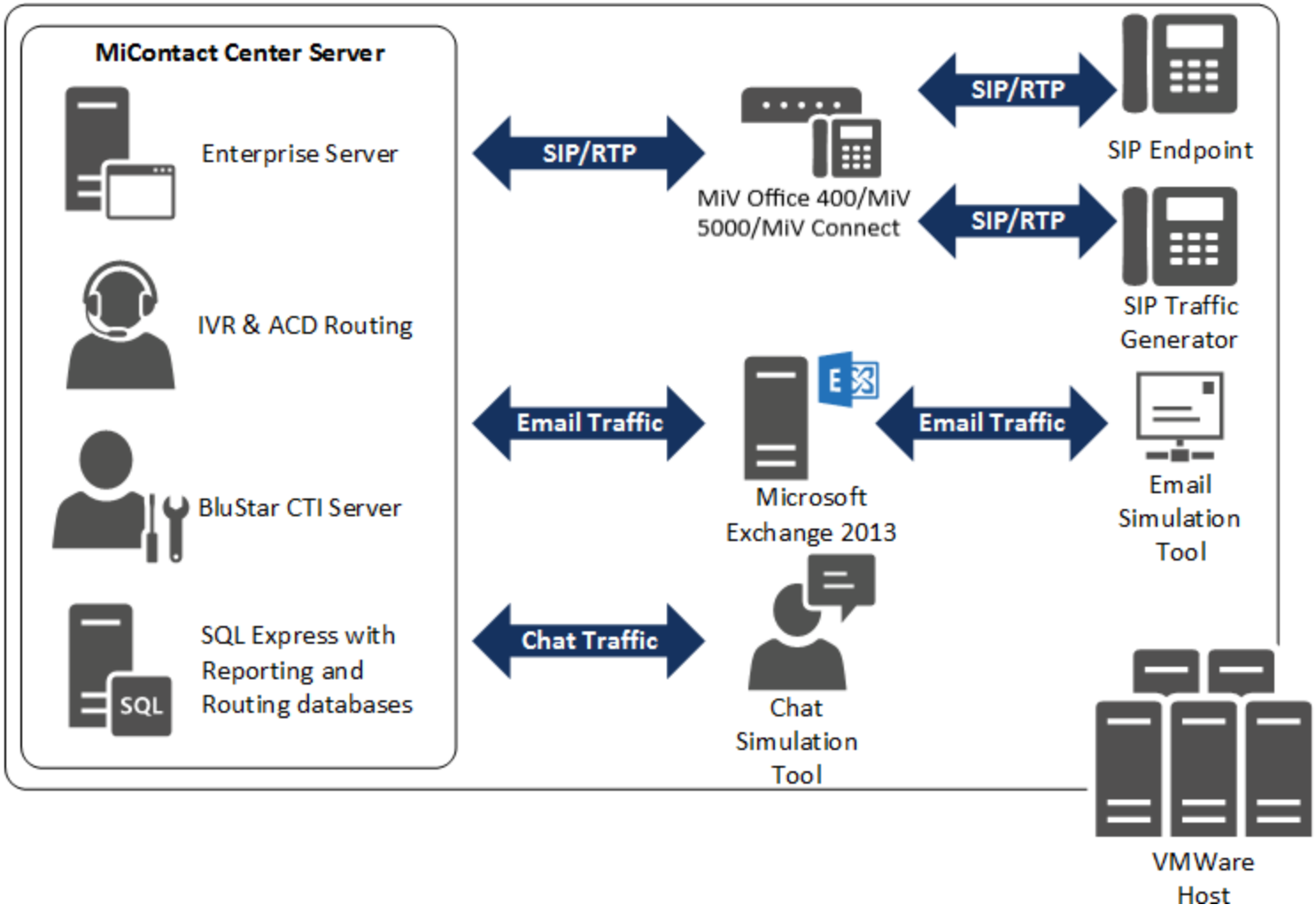


Figure 5: MiContact Center Business Performance Lab Topology

INTERACTION CHARACTERIZATION

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

- Voice – inbound only, where handling time is relative to the total interactions per hour when running at 100% 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 32 messages (16 inbound and 16 outbound), each containing one line of text (approximately 180 characters), for a total session length of 8 minutes

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:

- The IVR Callback feature is not supported when running at maximum capacity.
- 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.
- 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:

- If your contact center is 24/7, set maintenance to run at the least busy period of the day

IVR ROUTING SCALABILITY

IVR Routing scales vertically, through the use of concurrent call licenses, to handle increased traffic. The following table provides a general overview of the number of IVR Routing concurrent call licenses required to achieve a specific call per hour rate and the number of concurrent calls required to service inbound calls based on the average time spent in IVR.

Table 6: IVR Routing scalability parameters

Calls Per Hour	Time in IVR (s)	Concurrent Calls Required	Time in IVR (s)	Concurrent Calls Required	Time in IVR (s)	Concurrent Calls Required	Time in IVR (s)	Concurrent Calls Required
400	60	7	90	10	120	14	180	20
1400	60	24	90	35	120	47	180	70
2400	60	40	90	60	120	80	180	120
3400	60	57	90	85	120	114	180	170
4400	60	74	90	110	120	147	180	220
5400	60	90	90	135	120	180	180	270

A single MiContact Center Business server can handle a maximum of 5400 calls per hour and .a maximum of 90 simultaneous calls.

Several factors can impact the number of concurrent call licenses that are required and should be considered when estimating the number of concurrent call licenses to purchase:

- 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 that require specific workflow types, such as outbound calls for automated callbacks and power dialing

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

Table 7: 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 8 and Table 9 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 8: Reference configurations for data growth sizing when using MiContact Center Business Chat

	SMALL	MEDIUM	LARGE
Operational Information			
Inbound calls per hour	750	5000	17000
Total hours of operation per day	24	24	24
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
Feature Use Information			
Call notes	Yes	Yes	Yes
Call recording integration	Yes	Yes	Yes
Lifecycle reporting	Yes	Yes	No
Inbound/outbound trace reporting	Yes	Yes	Yes

Table 9: Reference configurations for data growth sizing using Contact Center Messenger Chat

	SMALL	MEDIUM	LARGE
Operational Information			
Inbound calls per hour	750	5000	17000
Total hours of operation per day	24	24	24
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 10: 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 11: 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 12: 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 13 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 13: SearchStorage requirements

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

NETWORK CONNECTIVITY REQUIREMENTS

Table 14 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 14: Network connectivity requirements

SERVER OR CLIENT ROLE	REQUIRED NETWORK CONNECTION
Enterprise Server	100 Mbps network connection speed is the minimum requirement
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 15 details the average expected bandwidth use of 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 15: 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

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
- Backing up data

TRANSLATED LANGUAGES AND SUPPORTED OPERATING SYSTEMS

Table 16 details the languages MiContact Center Business applications are translated to and the corresponding operating systems within which the translated applications are supported.

Table 16: Translated MiContact Center Business applications and supported operating systems

APPLICATION	LANGUAGES	SUPPORTED OPERATING SYSTEMS
MiContact Center Business • Interactive Visual Queue • Interactive Contact Center • Ignite • 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.
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.

SYNCHRONIZED TIME SETTINGS IN MiCONTACT CENTER BUSINESS

MiContact Center Business is 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 (such as the Enterprise server 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 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 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
  - **For new installations of 8.1 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
  - **For new installations of 8.1 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.
  - **For new installations of 8.1 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
  - **For new installations of 8.1 and above:**
    <drive>:\Program Files (x86)\Mitel\MiContact Center\WebSites\CCMWa\Scripts\Chat.Config.DEFAULT.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

The licensing model for Version 9.2 includes two MiContact Center Business licensing levels (Contact Center and Workgroup) and standalone offerings for Multimedia Contact Center and IVR Routing.

The following section describes licensing packages and options for MiContact Center Business, 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
- 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, 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.

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 and the number of IVR endpoints needed to handle incoming traffic. Workgroup is geared toward smaller contact centers with fewer than 100 concurrent agents, requiring a maximum of 10 IVR endpoints. Contact Center is the licensing level of choice for businesses with more than 100 concurrent agents and a requirement for more than 10 IVR endpoints. 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.

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 17: 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
Interactive Visual Queue	Included	Included
Interactive Contact Center	Included	Included

Table 17: Feature and component comparison - Workgroup and Contact Center (continued)

FEATURE / COMPONENT	WORKGROUP	CONTACT CENTER
IVR-enabled screen pop	Included	Included
Data provider queries	Included	Included
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
MiCollab Client Deskphone/Softphone with Teleworker	Included	Included
Messaging and Routing	Add-on option	Included
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 18: 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

Table 18: Features and components included in the Contact Center Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
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 and access data in reports
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
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

Table 18: 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
IVR-enabled screen pop	Using variables within IVR Routing workflows, screen pops are populated with relevant customer information and presented to agents when interactions are received
Data provider queries	Includes support for queries to SAP, Salesforce, Microsoft Dynamics CRM, Sugar CRM, and NetSuite (requires IVR)

Table 18: Features and components included in the Contact Center Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
Messaging and Routing	Includes 12 SIP trunk licenses If you require more than 12 calls in queue, then additional SIP trunk licenses must be purchased For a list of activities included in Messaging and Routing, see "IVR and Messaging and Routing" on page 57 **NOTE:** MiContact Center Business does not support a mixture of Messaging and Routing endpoints with IVR endpoints on the same enterprise

Table 19: 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
IVR (for MiContact Center Business - Contact Center)	Each Contact Center IVR license includes 1 Contact Center IVR endpoint Additional endpoints can be purchased If you purchase Contact Center IVR endpoints, 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 57.

Table 19: Optional features and components available to the Contact Center Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
IVR Text to Speech / IVR Text to Speech Language Pack	Includes 1 IVR Text to Speech endpoint 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 endpoint 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

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 20: 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

Table 20: Features and components included in the Workgroup Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
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 and access data in reports
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
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

Table 20: Features and components included in the Workgroup 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.
IVR-enabled screen pop	Using variables within IVR Routing workflows, screen pops are populated with relevant customer information and presented to agents when interactions are received
Data provider queries	Includes support for queries to SAP, Salesforce, Microsoft Dynamics CRM, Sugar CRM, and NetSuite (requires IVR)

Table 21: 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
Messaging and Routing	Includes 12 SIP trunk licenses If you require more than 12 calls in queue, then additional SIP trunk licenses must be purchased For a list of activities included in Messaging and Routing, see "IVR and Messaging and Routing" on page 57. **NOTE:** MiContact Center Business does not support a mixture of Messaging and Routing endpoints with IVR endpoints on the same enterprise
IVR (for MiContact Center Business - Workgroup)	Each Workgroup IVR license includes one Workgroup IVR endpoint Additional endpoints can be purchased to a maximum of 10 endpoints For a list of activities included in Workgroup IVR, see "IVR and Messaging and Routing" on page 57. **NOTE:** MiContact Center Business does not support a mixture of Workgroup IVR endpoints with Messaging and Routing endpoints on the same enterprise
IVR Text to Speech / IVR Text to Speech Language Pack	Includes 1 IVR Text to Speech endpoint 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 21: Optional features and components available to the Workgroup Starter Pack (continued)

FEATURE / COMPONENT	DESCRIPTION
IVR Speech Recognition / IVR Speech Recognition Language Pack	Includes 1 IVR Speech Recognition endpoint 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
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 endpoint 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 endpoints with Contact Center IVR endpoints in the same enterprise. When upgrading, all Workgroup IVR endpoints must be upgraded to Contact Center IVR endpoints

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 67.)

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

Table 22: 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
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 22: 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 22: 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 22: 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
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 22: 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 23: Messaging and Routing, IVR, and Contact Center IVR activities

ACTIVITY	MESSAGING AND ROUTING	IVR	CONTACT CENTER IVR (STANDALONE)
Add Dial Out of Queue Option	X	X	-
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
Employee Control	X	X	-
Execute	-	X	X
Go To	X	X	X
Hang Up	X	X	X
Hold State	-	X	X
Interflow	X	X	-

Table 23: Messaging and Routing, IVR, and Contact Center IVR activities (continued)

ACTIVITY	MESSAGING AND ROUTING	IVR	CONTACT CENTER IVR (STANDALONE)
Language	X	X	X
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	-

Table 23: Messaging and Routing, IVR, and Contact Center IVR activities (continued)

ACTIVITY	MESSAGING AND ROUTING	IVR	CONTACT CENTER IVR (STANDALONE)
Save Callback	-	X	X
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 table describes the features and components included in the Contact Center Multimedia Starter Pack:

Table 24: 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.

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 57.

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

Table 25: 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
Contact Center IVR Endpoint	License includes 1 Contact Center IVR Endpoint Additional endpoints can be purchased
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 26: Features and components available to the Contact Center IVR Starter Pack

FEATURE / COMPONENT	DESCRIPTION
IVR Text to Speech Endpoint	License includes 1 IVR Text to Speech endpoint Enables Text to Speech (integration with Nuance Vocalizer)
IVR Text to Speech Language Pack	The IVR Text to Speech Language Pack enables additional languages for Text to Speech Requires a Nuance server and applicable Nuance software

Table 26: Features and components available to the Contact Center IVR Starter Pack (continued)

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

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 software:

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 TELEPHONE SYSTEMS

The following table lists telephone systems that are supported for MiContact Center Business Version 9.2:

Table 27: Supported telephone systems

TELEPHONE SYSTEM	SUPPORTED VERSION
MiVoice Office 400	6.0 SP1, 5.0
MiVoice 5000	7.0, 6.5 SP1, 6.5, 6.4 SP1
MiVoice Connect	19.1, 1807 SP2

NOTE:

- To enable CTI server capabilities, MiVoice Office 400, MiVoice 5000, or MiVoice Connect; requires BluStar Server software to be installed on the MiContact Center Business Enterprise Server. MiContact Center Business Version 9.2 supports BluStar Server Version 7.3.0 build 211.
- To support MiVoice Call Recording on the MiVoice 5000, you require a minimum of MiVoice Call Recording Version 9.2 and MiVoice 5000 Versions 7.0, 6.5 SP1, 6.5, and 6.4 SP1.
- MiContact Center Business Version 9.2 supports MiCollab Versions 9.0, 8.1 SP1, 8.1, 8.0 SP1. MiCollab is not supported with MiVoice Connect.
- MiVoice Office 400, MiVoice Office 5000, and MiVoice Connect telephone systems cannot be mixed.

SUPPORTED PHONES

MiContact Center Business software integrates with a variety of phones. The following table lists the devices tested with MiContact Center Business Version 9.2:

Table 28: Supported phones

PHONE TYPE	PHONE
MiCollab Client	
SIP	Mitel 6863 SIP
SIP	Mitel 6865 SIP
SIP	Mitel 6867 SIP
SIP	Mitel 6869 SIP
IP/Digital	MiVoice 5370
IP/Digital	MiVoice 5380
SIP DECT/TDM	Mitel 612
SIP DECT/TDM	Mitel 622
SIP DECT/TDM	Mitel 632
SIP DECT/TDM	Mitel 650
MiVoice Connect	6910/6920/6930/6940 IP 420 480 485 425 Connect Softphone IP 485G, IP 230G, IP 420

For information on specific desk phone behavior with MiContact Center Business, see the following MiContact Center Business Knowledge Base article: http://micc.mitel.com/kb/KnowledgebaseArticle52441.aspx.

AUDIO CODEC SUPPORT

When a call is connected to MiContact Center Business, the system performs codec negotiation to determine which audio codec to use.

The following codecs are supported:

- OPUS
- PCMA (G711.A (aLaw))
- PCMU (G711.U (uLaw))
- G729
- GSM

TABLET SUPPORT

MiContact Center Business Version 9.2 provides support for the following applications on the Microsoft Surface Pro tablet:

- Contact Center Client
- Ignite
- CCMWeb

NOTE: Microsoft Surface RT tablets are not supported.

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 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 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 12.

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 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.

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 6.

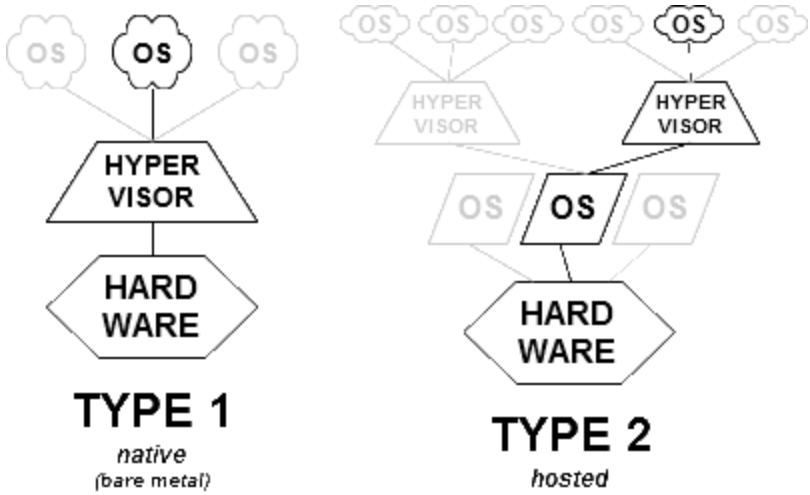


Figure 6: Types of hypervisors

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

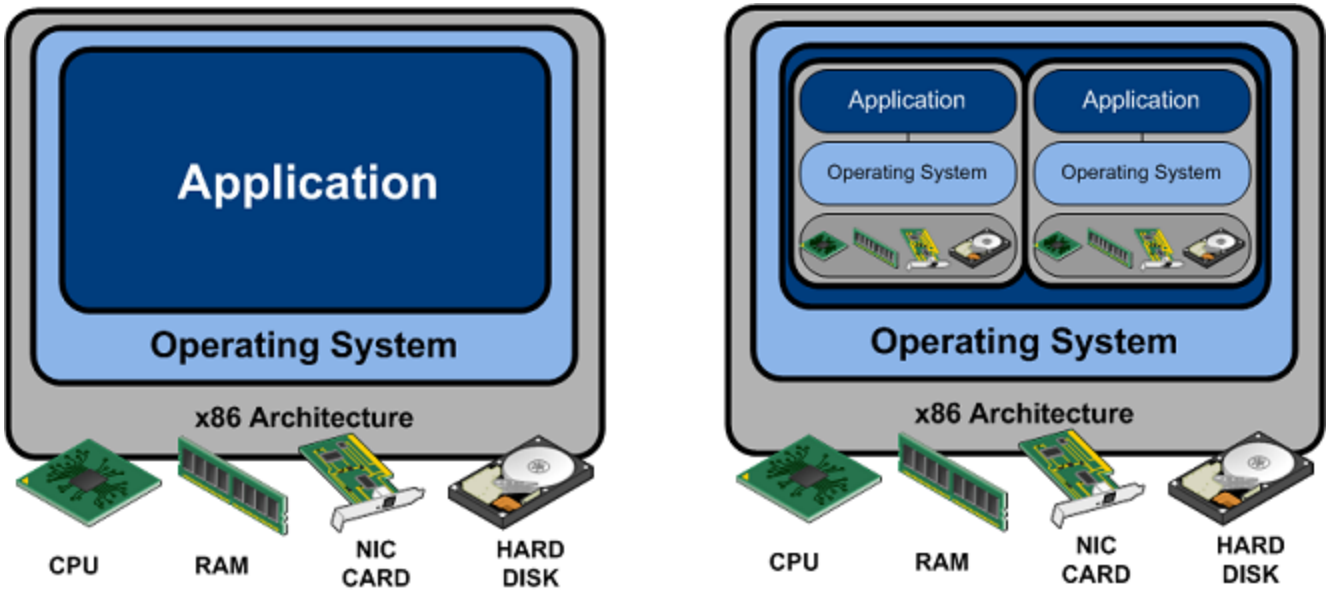


Figure 7: Type 2 hypervisor compared

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 8 displays a standard physical computer (left) compared to a virtualized computer running a type 1 hypervisor.

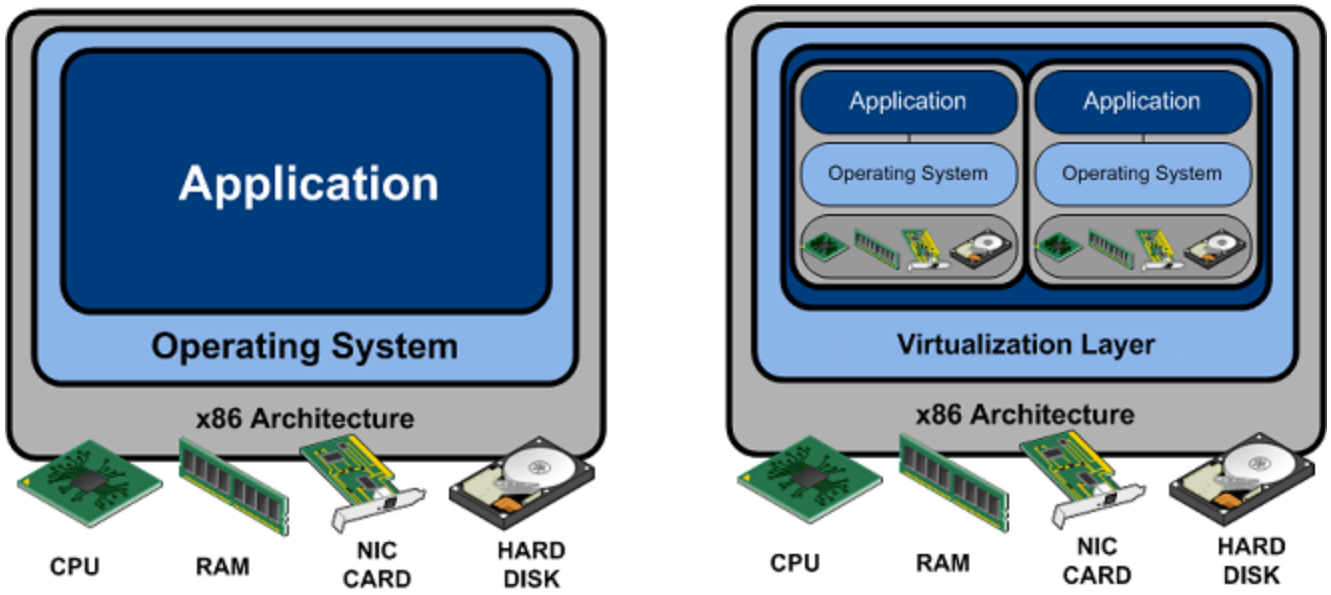


Figure 8: Type 1 hypervisor compared

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

IVR Routing can be configured to play pre-announcement and agent greeting messages. Pre-announcements and agent greetings are serviced by the MiContact Center Media Router service within the MiContact Center Business Server. Agent greeting and pre-announce use conferences to play messages to agents and callers. Agents can record and manage agent greetings using Ignite. Each agent greeting and pre-announce serviced by the MiContact Center Business Server is covered by the concurrent call license and should be considered when calculating total call handling time to determine the number of concurrent call licenses to purchase.

Concurrent call sizing for pre-announce and agent greeting

To determine the number of concurrent calls required for pre-announcement and agent greetings you must compile the following information for each individual MiVoice Office 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
- 150 peak active agents using agent greeting
- The average agent greeting message length is 6 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 using the following formula:

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

NOTE: The addition of 2 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:

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

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

The final port count is 5 concurrent calls.

MULTIMEDIA CONTACT CENTER

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

Ignite

Ignite is available as Web version. In our documentation, we refer to Web Ignite and its features as Ignite (WEB) or, where appropriate, as 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.
- Ignite's phone functionality does not support multiple lines.
- Calls must be made from Ignite to display in real time and reporting.

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

Exchange Server support

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

Table 29 lists versions of Exchange Server that have been tested and verified.

Table 29: 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.

NOTE: If Multimedia Contact Center is also handling chat and SMS, the combination of emails, chats, and SMS interactions cannot exceed 12,000 interactions per day, and a busy hour traffic of 800 interactions.

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 9)
  - Apache with reverse proxy (See Figure 9)
  - IIS with reverse proxy and end-to-end SSL (See Figure 10)
  - Apache with reverse proxy and end-to-end SSL (See Figure 10)

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

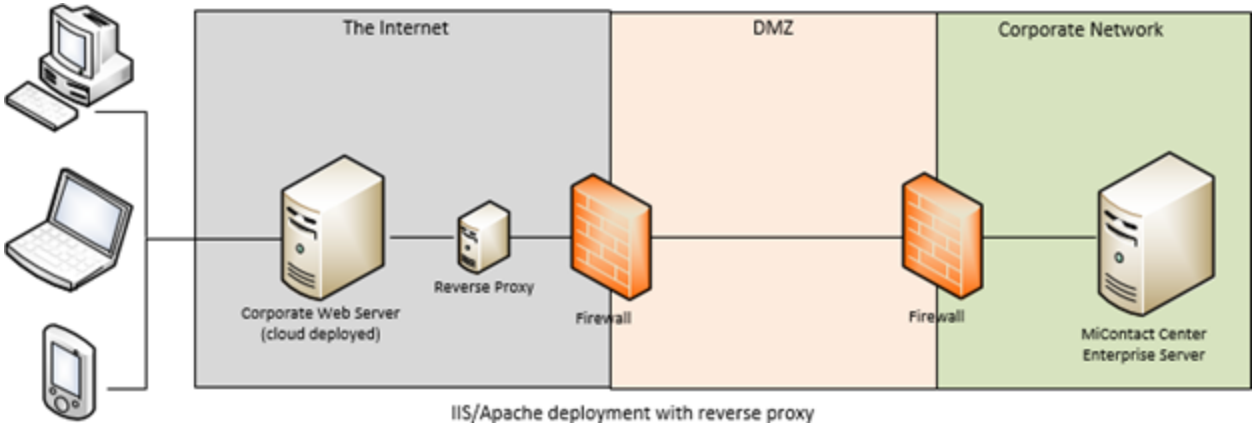


Figure 9: MiContact Center Business Chat and Contact Us reverse proxy deployment

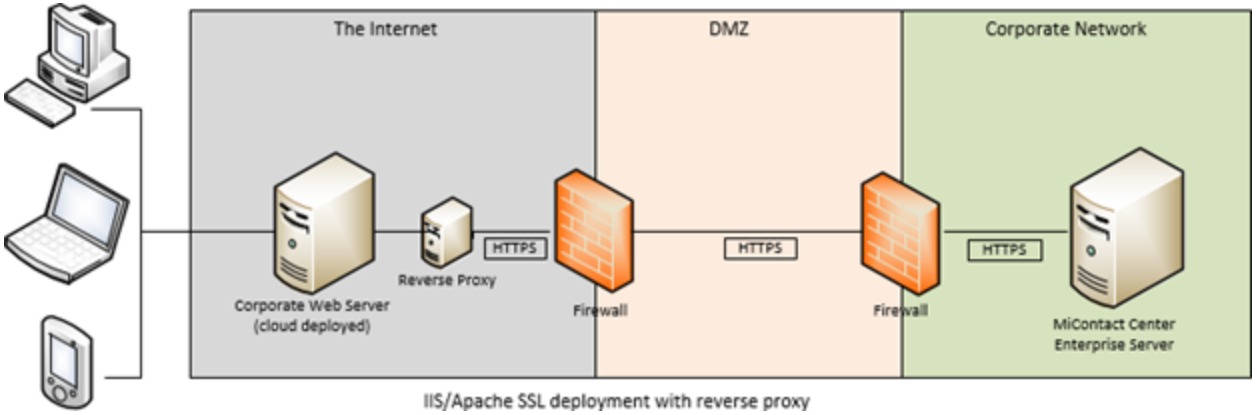


Figure 10: MiContact Center Business Chat and Contact Us SSL deployment

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.

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 11 and Figure 12) 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).

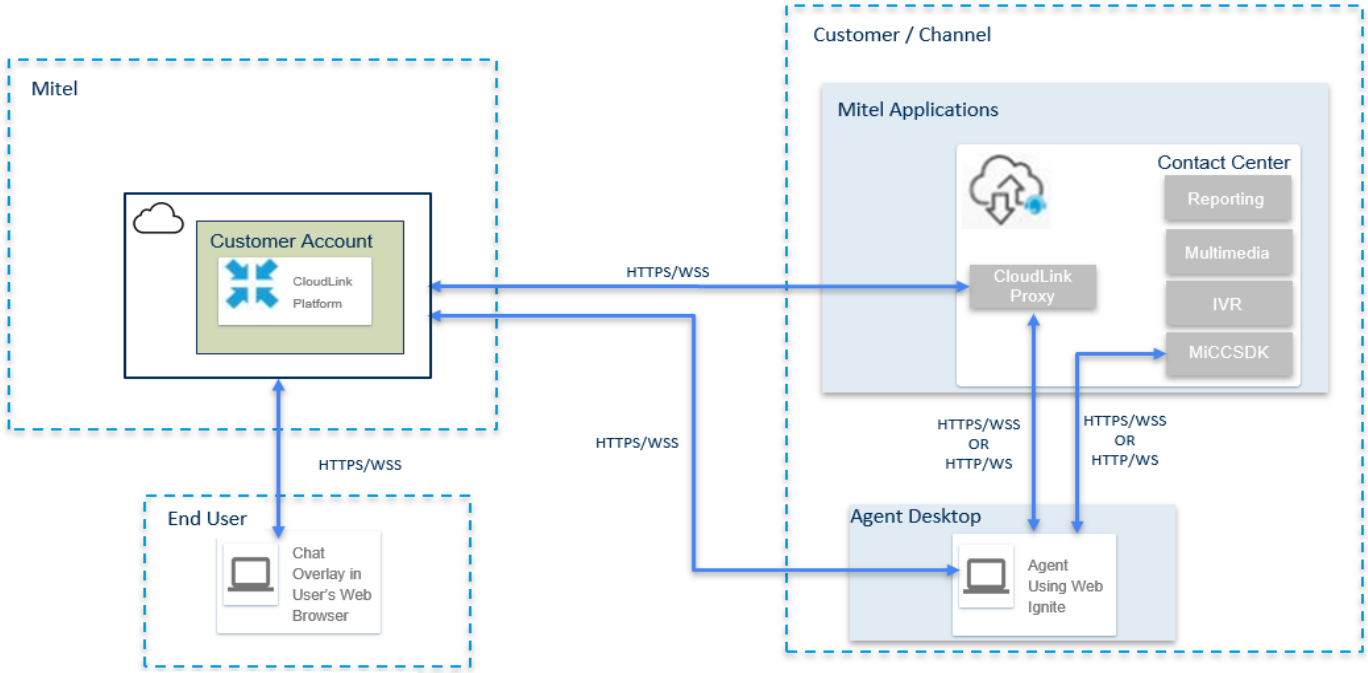


Figure 11: Contact Center Messenger Chat Integration when not configured to use Google AI features

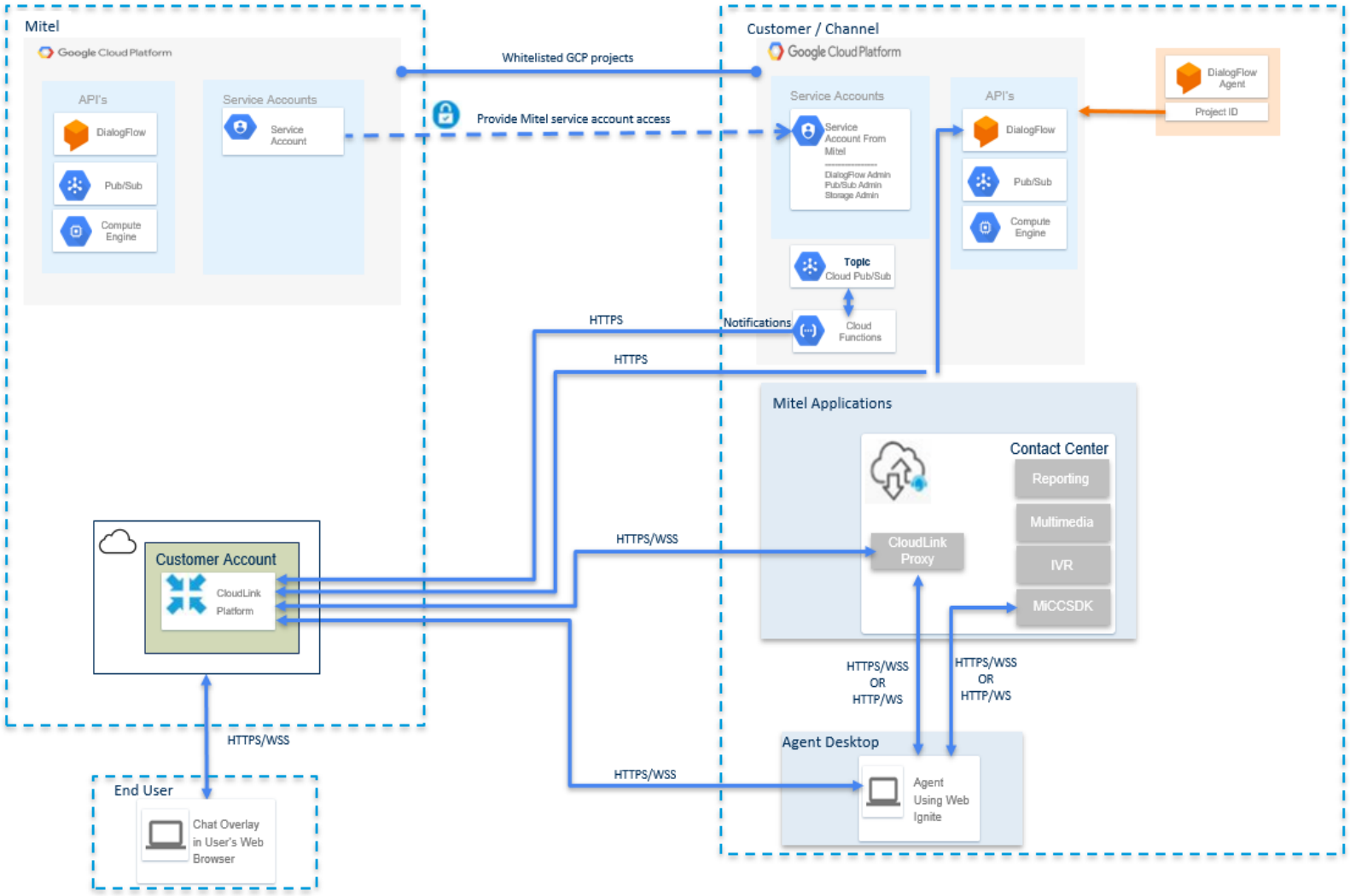


Figure 12: Contact Center Messenger Chat integration when configured to use Google AI features

WEB CLIENT NOTES

The following MiContact Center Business web applications are available as part of a standard MiContact Center Business deployment:

- CCMWeb
- Web Chat and Contact Us
- Ignite (WEB)

These web applications can be accessed using any browser included in "Supported browsers" on page 70.

Connectivity to MiContact Center Business web clients is supported over both HTTP and HTTPS and can be configured for access over the public internet through a reverse proxy.

For additional information, requirements, and important notes for deploying Ignite (WEB), see "Ignite" on page 80.

STATEMENT OF SUPPORT FOR SIP TRUNKING

Connectivity of audio and signaling between the MiContact Center Business server and the telephony platform is provided by SIP trunks.

SIP trunks to the MiContact Center Business server do not support:

- Secure RTP (SRTP)
- Secure SIP Signaling (TLS)

The MiContact Center Business server listens for SIP traffic on port 5060 over TCP or UDP. SIP trunks to the MiContact Center Business server do not require authentication or registration.

See "Audio codec support" on page 73 for a list of supported audio codecs.

NOTE: MiContact Center Business does not support the registration of SIP sets directly to the MiContact Center Business server. All sets must be registered with the telephone platform.

For additional platform-specific trunk settings, see the following Mitel Knowledge Base article:
http://micc.mitel.com/kb/KnowledgebaseArticle52448.aspx.