MOBILITY AND PRIVATE WIRELESS

SOLUTIONS GUIDE

DECEMBER 2014

Mitel®

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Mitel Mobility and Private Wireless Solutions
Release 4.0
December 2014

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Chapter 1

INTRODUCTION

Introduction

Whether employees are working at home, on the road, or even on-site but rarely at a desk, mobility is a part of your business requirement. Increasingly, businesses are also being asked to integrate employee-owned mobile devices into their networks, with all the security challenges that implies.

Mitel allows you to add mobile devices to your network in several ways, depending on what capabilities you need.

Table 1: Mitel Mobility Solutions

	CONNECT	UNIFY	COLLABORATE
MOBILE	• Dynamic Extension	• MiCollab Mobile Client (formerly UCA Mobile) (BlackBerry®, iOS, Android)	• MiCollab Audio, Web, and Video conferencing (formerly MCA)
MOBILE + ON-PREMISE CONVERGENCE	• Dynamic Extension	• MiCollab Mobile Client (formerly UCA Mobile) (iOS, Android) • BlackBerry MVS • MSA 3rd-party gateways	• MiCollab Audio, Web, and Video conferencing (formerly MCA)
ON-PREMISE WIRELESS	• Dynamic Extension	• Mitel IP-DECT • Ascom Wi-Fi • Polycom Wi-Fi	

Mitel offers a full line of mobile solutions to cover all of these scenarios:

- On-premise wireless:
  - Wi-Fi and IP-DECT solutions are available for sites such as manufacturing sites, warehouses and hospitals, where certain staff members must be available immediately, no matter where they are on the premises or campus.
  - Employees' Wi-Fi-enabled mobile devices can be connected through the Wi-Fi network, saving roaming charges while employees are on-site; for example, iOS and Android smart phones and MiCollab Mobile Client (formerly UCA Mobile) are supported.
  - Dynamic extension allows employees to associate a mobile device to their business number, and make and receive calls on multiple devices associated to their business number.
- Mobile integration: combining Mobile devices and IP solutions
  - The MiCollab Mobile Client for Smart Phones provides remote access to MiCollab Client features on a mobile device, allowing mobile users to use their personal mobile phones and tablet computers including BlackBerry, Android, and iOS-based devices.

For other mobile devices such as Windows Mobile, MiCollab Web Portal provides remote access to a subset of MiCollab Client features.

- Employees can work from home or elsewhere using one of the following Mitel products:
  - Teleworker IP phone (requires an MBG)
  - MiCollab Client Softphone
  - MiCollab Mobile Client for Smart Devices (iPhone, iPad, Android)
- Dynamic extension allows employees to make and answer calls on any of their devices, working through the corporate PBX, no matter where they are in the world.
- Employees can use company-supplied BlackBerrys that run on the BlackBerry Enterprise Server (BES) and Mobile Voice System (MVS), integrated with the Mitel PBX. This solution offers e-mail and voice service, and routing all employee business calls through the corporate network. Integrating with the Mitel PBX also offers BlackBerry users access to Mitel phone features, including twinning the phone with their desk phone.
- Solutions are available from Mitel Solutions Alliance (MSA) partners to allow integration with third-party products. For information about the MSA program, refer to http://www.mitel.com/partners/partner-programs/mitel-solutions-alliance

Terms and Acronyms

The following table defines some of the terms used in this guide.

Table 2: Terms and Acronyms

TERM	DEFINITION
AWV	MiCollab Audio, Web, and Video conferencing feature
BES	BlackBerry® Enterprise Server
DAS	Dial Access Strings
DECT	Digital Enhanced Cordless Telecommunication
EHD EHDU EHDA	External Hot Desk External Hot Desk Users External Hot Desk Agents
ICP	Mitel Internet Protocol Communication Platform
IETF	Internet Engineering Task Force
IP	Internet Protocol
IP-DECT	Internet Protocol - Digital Enhanced Cordless Telecommunication
LAN	Local Area Network
MBG	MiVoice Border Gateway (previously Mitel Border Gateway)
MCA	Mitel Collaboration Advanced (now called MiCollab Audio, Web, and Video conferencing (AWV))
MCD	Mitel Communications Director (now called MiVoice Business)
MICD	Multi-Instance Communications Director (now called MiVoice Business Multi-instance)
MiVB	MiVoice Business
MSA	Mitel Solutions Alliance
MVS	BlackBerry Mobile Voice System
MWI	Message Waiting Indicator
NAT	Network Address Translation
OAP	Over-the-Air Programming
PBX	Private Branch Exchange
PRG	Personal Ring Group
RFC	Request For Comments (used by the IETF to create new interworking standards)
RFID	Radio Frequency ID
RTP	Real-time Transport Protocol
SIP	Session Initiation Protocol (IETF RFC 3261)

Table 2: Terms and Acronyms

TERM	DEFINITION
SRTP	Secure Real-time Transport Protocol
TOD	Time of Day
TUI	Telephone User Interface
UCA UC Advanced	Mitel Unified Communicator Advanced (now called MiCollab Client)
UCA Mobile	Mitel Unified Communicator Advanced Mobile (now called MiCollab Mobile Client)
UC Server	Mitel Unified Communications Server (now called MiCollab Client Service)
VLAN	Virtual LAN
VoIP	Voice over Internet Protocol
Wi-Fi	Wireless Fidelity (IEEE 802.11 wireless networking)
WLAN	Wireless LAN
WMM™	IEEE 802.11 Wi-Fi Multimedia™ Offers QoS for Wi-Fi networks.

Chapter 2

DESIGNING A MOBILITY SOLUTION

Mitel Mobility and Private Wireless

Mitel provides a wide range of Unified Communication and Collaboration (UCC) solutions to organizations of all types and sizes worldwide. The Mitel UCC mobility benefits include:

- Allowing employees to access the corporate network from their personal smart phones and tablets
- Enabling employees to work from home while collaborating using Teleworker IP phones and MiCollab Client
- Allowing employees to have a “portable office” while travelling
- Allowing smart phone calling using the corporate PBX (OfficeLink); allows mobile users to make business calls from their mobile phone without sharing their mobile phone number
- Allowing mobile workers to have a single identity; one phone number and one voice mail box
- Business Application Integration with Microsoft® Outlook, IBM Lotus Notes, and ACT!
- Call recording and logging from MiCollab Client clients
- Location-based presence capabilities of MiCollab Mobile Client for BlackBerry allowing presence status updates using GPS, Bluetooth, and Wi-Fi
- Collaboration viewer web client (for desktops, tablets, and smart phones)

What does mobility encompass?

Figure 1 shows a fictional large enterprise. It illustrates how each of the Mitel mobility solutions can be used. Table 3 gives an overview of the mobility features available with the Mitel mobility product lines.

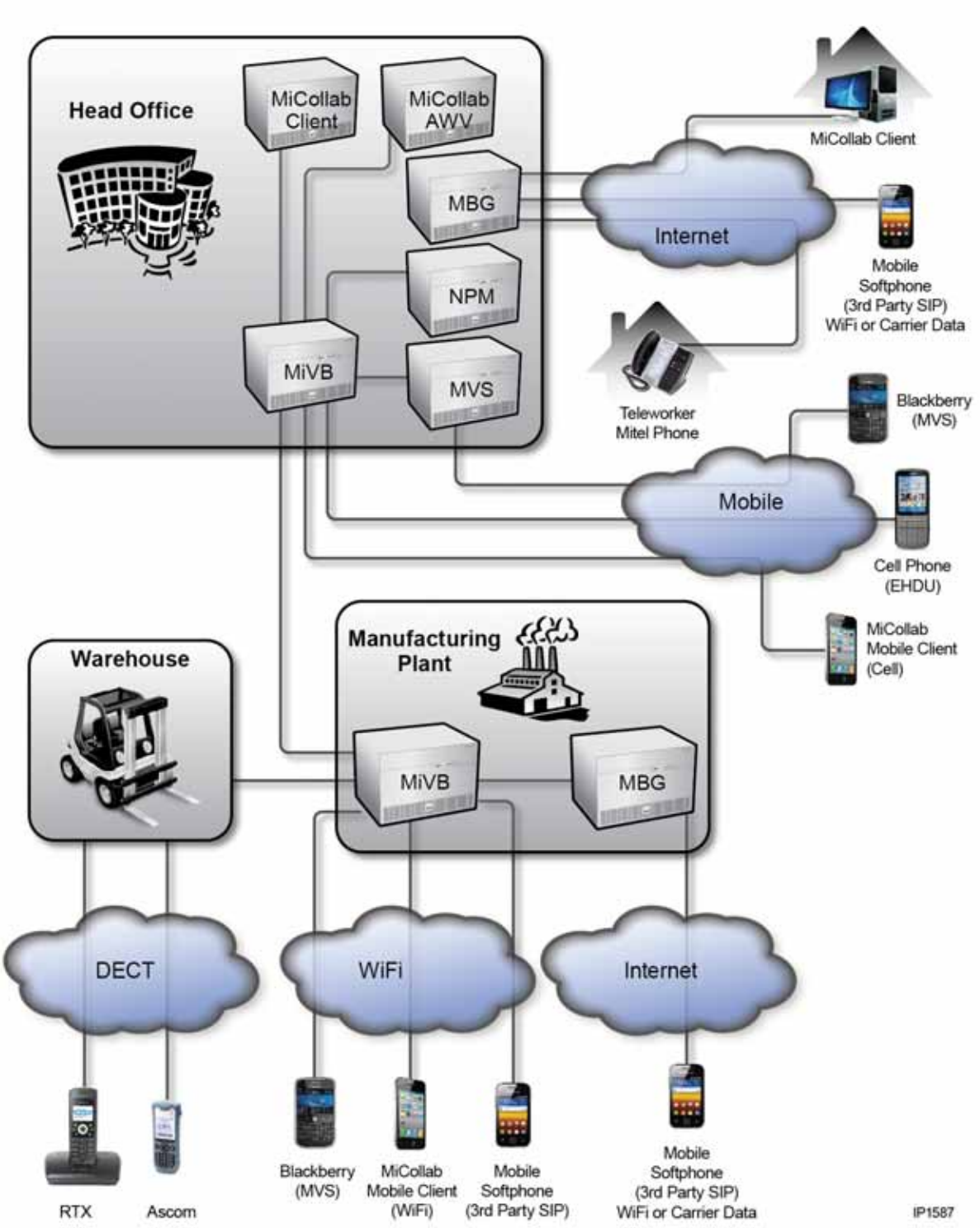

Figure 1: Example mobility deployment

The following functionality matrix shows how the various Mitel mobility products address mobility needs.

Table 3: Mitel Mobility Functionality Matrix

	DYNAMIC EXTENSION	MICOLLAB MOBILE CLIENT	BLACKBERRY MVS/ MOBILE FUSION	MICOLLAB AWV	IP-DECT/ WI-FI
Single number reach	√	√	√		√
MiVB call features	√	√	√		√
Call hand-off	√	√	√		√
Single identity		√	√		√
VoIP with cellular hand-over		Future	√		
Dual persona		Future	√		
Dynamic presence		√			
Unified communications		√ C H, Corp D, Visual Voice Mail, Instant Messaging			
Device management			√		
Business process		Future APIs, BPI Gateway	√ SharePoint		√ Vertical Apps
Collaboration				√ audio, web, video	

Note: MiVB = MiVoice Busines

How to design a mobility solution

There are many types of mobility solutions, and different customers may have completely different needs.

First, you must determine what problem the customer is trying to solve. Will they need mostly an on-site solution, or do many of their employees travel? Do many of their employees work from home, or do they mostly stay in a relatively small work area?

The design of your mobility solution depends on what services you need to provide:

- Do you need on-site mobility, or off-site mobility, or both?
- Will your users need access worldwide?
- Will your network contain wireless handsets, BlackBerry handsets, Apple or Android devices, or all of these?
- Will users be calling from their desktop computers?
- Will they need real-time sharing of documents?
- What are the primary security considerations?

The answers to these questions and many more will define the mobility solution the customer needs.

Determining the right solution

Figure 1 shows an example deployment for a large company. The graphics show all of the major mobility deployments in one enterprise. This is just an example, and you may not need all of these solutions. The following tables illustrate the design questions you need to ask, and show how the answers to the questions lead to the mobility solutions needed.

If workers in different facilities in your organization have different needs, they may need different mobility solutions, so plan the solution for each facility and each worker type separately. If you have different types of users in the same facility, you should analyze and plan for each distinct user group separately.

For example, you may have a building or campus that includes office workers, and factory or warehouse workers, and on-site emergency or security workers. If these groups of workers needs are very different, you may consider deploying more than one solution in the same facility.

Mobile user types (persona) and requirements

Users can be divided into five main categories, and Mitel has a mobility solution tailored for each type. Your organization may have workers in two or more of these categories, and perhaps in all of them. Determining the persona of each user group in your organization will allow you to design the right mobile solution for each one.

Mitel classifies users in five general user personas. The example enterprise shown in Figure 1 would require provisioning for all five.

- Desk Worker

- Telecommuter
- Mobile Information Worker
- Hyper-Mobile Professional
- Mobile Task Worker

Use the information in Figure 2 to determine which user types exist (or will soon exist) in your organization.

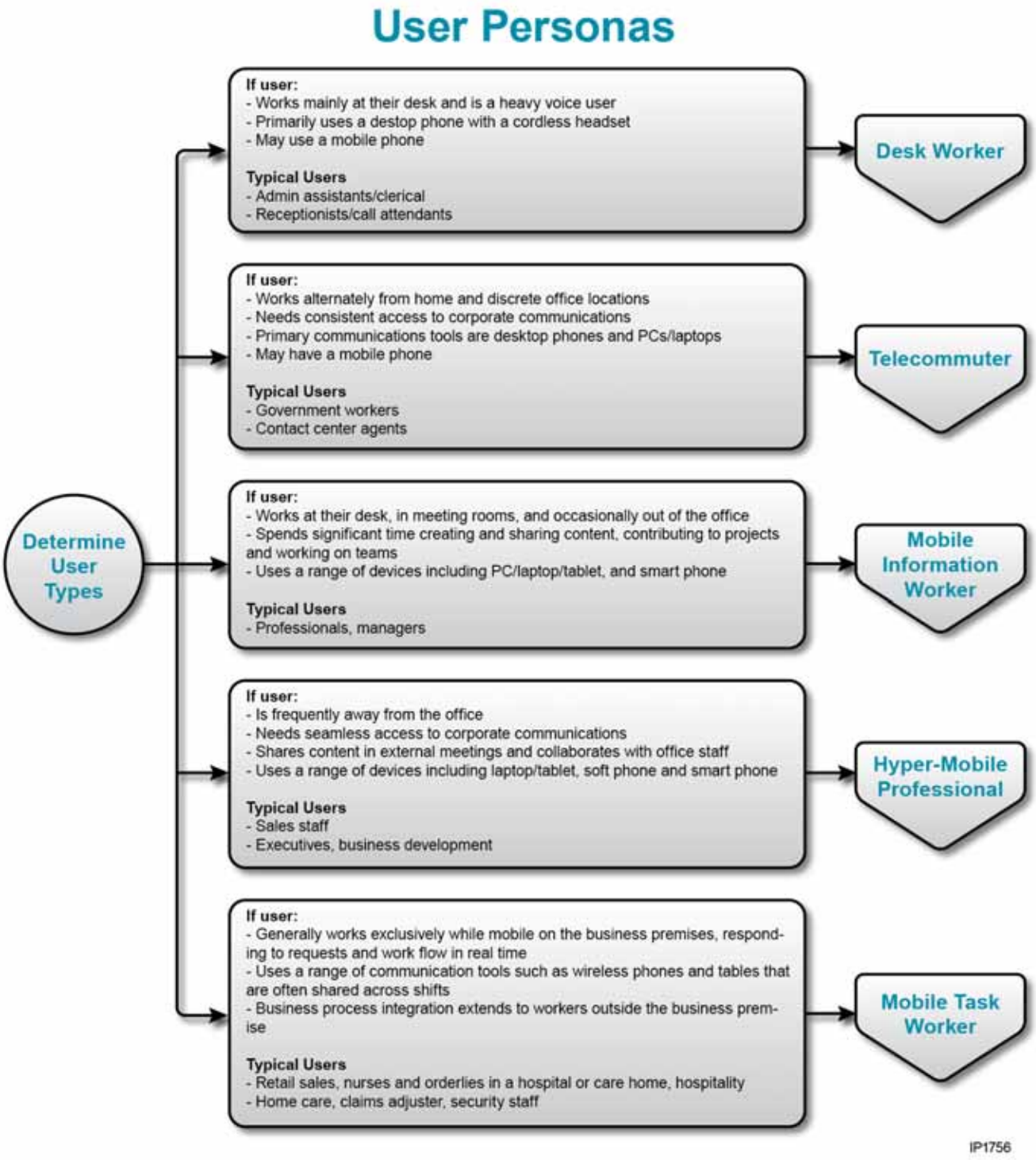

Figure 2: Determining User Personas

Desk Worker

The Desk Worker category is assumed to include both Desk Workers and On-site Task Workers.

Workspace mobility: The Desk Worker makes and takes calls in and near the personal workspace using a cordless headset, handset, or Bluetooth headset with a desktop phone. They are able to hand off calls to a mobile phone when moving away from the workspace.

Telecommuter

Hotdesking: The Telecommuter logs in their corporate extension/identity from a softphone when working in the office. Uses a mobile phone as the associated handset for calls initiated and controlled using the desktop software.

Mobile Information Worker

Flex working: The Mobile Information Worker needs to take business calls on a desk phone at the workspace, on a mobile device when away from the desk, or commuting, and on a remote desk phone when working from home. Occasionally needs to hand off calls between mobile and desk phones to alternately gain mobility or enhanced audio capability.

Team working: The Mobile Information Worker uses their mobile device or tablet in ad hoc hallway or scheduled meetings to speed information access and decision making. Views and share presence (location and activity) status with colleagues and engages seamlessly using instant messaging and voice as required. Has access to single identity (OfficeLink) calling from a mobile devices.

Hyper-Mobile Professional

Seamless mobile voice: The Hyper-Mobile Professional requires seamless mobile business (OfficeLink) calling using corporate and mobile contacts from home, office, public places, and vehicles, both local and international. Calls are routed seamlessly over wired, cellular, and Wi-Fi networks to ensure access and minimize costs. Active calls can be moved between devices (smart phone, desktop, tablet) to optimize the user's experience, and personal identity calls can be made to bypass the corporate network.

Mobile collaboration: The Hyper-Mobile Professional requires access to accelerated collaboration through remote and mobile access to work spaces, meetings, and presentations. Needs rapid set-up, and simple join, re-join, and Add Users functions for audio and web content, Needs to view, and occasionally share, content using a tablet or laptop PC with local and remote audiences while working from a customer site, remote office, home, or public space.

Mobile video collaboration: The User has access to remote and mobile video communication from laptop, tablet, or smart phone for higher fidelity interaction with distributed staff and virtual teams, including integrated content sharing. Requires rapid set-up and re-connect for peer-to-peer and video conferencing. The mobile device may occasionally be connected to the local display for sharing.

Mobile Task Worker

Workflow integration: The Mobile Task Worker must respond to calls, messaging, and alarms, integrated with tasks and workflow applications and processes while fully mobile, on-premise

or off. Needs access to location and imaging technologies to ensure personal safety and optimize task and work flow. On-site staff are able to log in to a shared pool of specialized wireless (DECT or Wi-Fi) devices or Wi-Fi-enabled smart phones and tablets. Off-site, mobile smart phones and tablets are used.

User Personas and licensing

Mitel sells convenient UCC Mobility license bundles tailored to each user persona, so you can be sure that every worker has everything they need, and the following tables are tailored to match the appropriate license bundle to the user persona you are provisioning, as shown in Table 4. Also see Table 11 for more information about what is available in each license bundle.

Table 4: User Personas and the matching Mitel UCC license bundle

ENTRY	STANDARD	PREMIUM
Desk Worker	Telecommuter	Mobile Task Worker
On-site Task Worker	Mobile Information Worker	Hyper-Mobile Professional

Your answers to the questions in the following tables will help you decide what types of users exist in your enterprise, and the products they will need.

Desk Workers: Most of your clerical staff work from their desk area, and may spend a lot of time on the phone. They primarily use a desk phone with a headset, while some may use a mobile phone.

On-Site Mobile Task Workers: If your factory or warehouse (for example) relies on a group of workers that absolutely must be reachable at all times while on-site, then you need to supply them with wireless handsets and a local network that provides very high coverage in your environment. The following table provides a guide to determining if you have a business-critical or mission-critical group of workers.

These workers may have to contend with harsh environments, and the handsets may have to withstand rougher use. In this case, the handsets must be able to work well in hazardous environments, including being resistant to solvents, disinfectants, liquids, dust, and dirt.

Table 5: Desk Workers and On-Site Task Workers

QUESTIONS	CONSIDERATIONS	PRODUCTS REQUIRED
Desk Workers at Head Office, or On-Site Task Workers at the Warehouse or Factory Examples of workers that would have these requirements: • Administrative assistants, receptionists • Clerical staff/data processing personnel • Software developers, technical support/call attendants • Retail staff, who cannot remain at a stationary phone, but must be available to customers on the floor • Nurses and orderlies in hospitals or care homes • Supervisory or troubleshooting and repair staff on the manufacturing floor • Warehouse personnel • Security staff This table assumes that workers need to be reachable on-site only.		

Table 5: Desk Workers and On-Site Task Workers

QUESTIONS	CONSIDERATIONS	PRODUCTS REQUIRED
Do workers need some work-space mobility? Do workers need to answer work-related calls on their mobile phone?		Dynamic Extension: Allows users to twin their desk phone with another phone, their mobile phone, for example, so that they can continue to take business calls when they are temporarily away from their desk phone.
Do they need to use instant messaging to contact co-workers? Do they need to know where their co-workers are and whether they will be available.	Switchboard operators and receptions find it useful to be able to check status of their co-workers before re-directing callers and visitors.	MiCollab Client (Desk phone mode)
Will users ever work from home, or are there shift workers who will share a desk and phone?	The customer service center in the example enterprise operates 24 hours a day, so there are 3 shifts. The contact center workers need to share desks and phones.	MBG/Teleworker: Hot desking
Do users want or need untethered access to their phones?	If workers need to be able to check files while on the phone, or if they need to fetch coffee for guests while still being available for the phone, they will need untethered access.	Fixed-range cordless phone (MiVoice 5610) or Bluetooth headset The 5610 offers greater range than the Bluetooth headset does.
Will users need to call from their computer desktops?	This will reduce the need for telephone sets on every desk.	MiCollab Client (Softphone)
Will users need to host or participate in web conferences?	R & D staff need to be able to host or attend web conferences from their desks or meeting rooms.	MiCollab AWV
Do users have to be reachable and available while on-site?	If users must be reachable, and are on the move all the time, they may not need voice mail.	long-charge wireless handsets
Is the campus or building area difficult to cover?	In the case of steel factory or warehouse buildings with interior shielding walls, shelving, or equipment, a wireless signal may not be as reliable as needed.	Consider IP-DECT network
Are there shift workers who will share a desk and phone?		Rechargeable IP-DECT or Wi-Fi handsets (shared)
Is voice communication mission-critical or business-critical?		Consider IP-DECT network
Is the work environment hazardous to workers or handsets? Does the worker need a barcode reader? Does the worker need to receive alarms and messages in real-time?		Specialty Polycom or Ascom wireless phone sets See Figure 14 for the list of supported phones and their features.

Table 6: Mobility products required by Desk and On-Site Task Workers

MITEL PRODUCT	ALSO NEEDS...	NOTES
Dynamic Extension	• MiVoice Business user license • EHDU license for twinning	
MiCollab Client	• MiVoice Business user license • MiCollab Client user license	• Softphone, desk phone, or both
MiCollab Audio, Web, and Video conferencing (formerly MCA)		• Per-port licensing; see your Mitel representative for details
Fixed range cordless phone (5610)	• MiVoice Business user license	
MBG/Teleworker	• MiVoice Business user license • Teleworker license	
Cordless handset or headset Bluetooth headset		
IP-DECT or Wi-Fi	• IP DECT base stations	
Polycom or Ascom wireless handsets		These handsets can include features like: • barcode reader • messaging and alarms • resistance to dust, dirt, solvents, disinfectants, and rough use (dropping)

The following table provides a guide for determining the needs of your professional staff, both those who spend most of their time in your enterprise building or campus, and those who alternate between office and home, or move between offices.

Table 7: Telecommuter and Mobile Information Workers

QUESTIONS	CONSIDERATIONS	PRODUCTS REQUIRED
Mobile Information Workers at head office who use their mobile phone and laptop at any location on campus. They work mostly on-site, with some off-site meetings and client visits. Telecommuters who work from two or more discrete locations. Examples of Mobile Information Workers and Telecommuters: • R&D staff (Some R&D staff may also be Desk-based workers.) • Contact center agents • Technical support staff (on-call while off-premise) • Management/Executive personnel		
Do users need on-site mobility?	Will they need to be able to answer calls at other phones—at other desks or on their mobile phone, for example?	Dynamic Extension: Allows calls to be redirected to up to 8 different numbers

Table 7: Telecommuter and Mobile Information Workers

QUESTIONS	CONSIDERATIONS	PRODUCTS REQUIRED
Do users need mobile communications? Will users need wireless handsets or smart phones?	Do users need to be reachable throughout the campus, and occasionally off-campus? Do users need access to e-mail and presence info from their smart phones?	MiCollab Mobile Client for Smart devices MiCollab Mobile Client
Will users be using corporate BlackBerrys?	Assuming the enterprise has deployed Blackberry Enterprise Server (BES).	Blackberry MVS
Do users need Wi-Fi calling from mobile devices?		MiCollab Client (formerly UCA) (Desk phone mode)
Do they need to use instant messaging to contact co-workers?		MiCollab Client
Do they need to know where their co-workers are and whether they will be available?		MiCollab Client
Will users work from home, or will their primary workplace be remote? Will they work alternate between different discrete offices?		MBG/Teleworker: Hot desking
Will users need to call from their computer desktop?	This will reduce the need for telephone sets on every desk.	MiCollab Client (Softphone)
Will users need to host or participate in web conferences?	Staff need to be able to host or attend web conferences from their desks or meeting rooms.	MiCollab audio, web. and video conferencing (formerly MCA)

Table 8: Products required by Telecommuter and Mobile Information Workers

MITEL PRODUCT	ALSO NEEDS...	NOTES
Dynamic Extension	• MiVoice Business user license	• Allows making and receiving business calls from any one of eight phones
MiCollab Client	• MiVoice Business user license • MiCollab Client user license	• Softphone, desk phone, or both
MiCollab Mobile Client MiCollab Mobile Client for Smart devices (SIP client)		
MiCollab Audio, Web, and Video conferencing (formerly MCA)		• Per-port licensing; contact your Mitel representative for details
MBG/Teleworker	• MiVoice Business user license • Teleworker license	
Blackberry MVS	• Blackberry Enterprise Server	

Hyper-Mobile Professionals and Mobile Task Workers are rarely at a desk, but they must be reachable, wherever they are. Find the answers to the questions in Table 9 to determine the Mitel products they will need.

Table 9: Mobile Task Workers and Hyper-Mobile Professionals

QUESTIONS	CONSIDERATIONS	PRODUCTS REQUIRED
Fully mobile workers who must be reachable, and able to respond and collaborate from wherever they are, whether on-site or off-site: Examples of Mobile Task Workers are: • nurses, home care workers • retail sales, hospitality workers • security staff		
Examples of Hyper-Mobile Professionals are: • sales people • executives		
Do users need on-site mobility?	Will they need to be able to answer calls at other phones—at other desks or on their mobile phone, for example?	Dynamic Extension: Allows calls to be redirected to up to 8 different numbers.
Do users need mobile communications? Will users need wireless handsets or smart phones?	Do users need to be reachable throughout the campus, and/or off campus? Do users need access to e-mail and presence info from their smart phone?	MiCollab Mobile Client MiCollab Mobile Client for Smart Devices
Is there an installed base of corporate BlackBerrys?	Assumes the need for Blackberry Enterprise Server (BES)	Blackberry Mobile Voice System (MVS)
Do users need to access their documents worldwide?		MiCollab audio, web, and voice conferencing
Do users need to be able to host and join conferences world-wide		MiCollab audio, web, and voice conferencing
Do users have to be reachable and available while on-site?	If users must be reachable, and are on the move all the time, they may not need voice mail.	Long-charge wireless handsets
Is the campus or building area difficult to cover?	In the case of steel factory or warehouse buildings with interior shielding walls, shelving, or equipment, a wireless signal may not be as reliable as needed.	Consider IP-DECT network
Are there shift workers who will share a desk and phone?		Rechargeable IP-DECT or Wi-Fi handsets (shared)
Is voice communication mission-critical or business-critical?		Consider IP-DECT network
Is the work environment hazardous to workers or handsets? Does the worker need a barcode reader? Does the worker need to receive alarms and messages in real-time?		Specialty Polycom or Ascom wireless phone sets See Figure 14 for the list of supported phones and their features.

Table 10: Required by Mobile and on-site task workers

MITEL PRODUCT	ALSO NEEDS...	NOTES
Dynamic Extension	• MiVoice Business user license	
MiCollab Client		Softphone, desk phone, or both
MiCollab Mobile Client MiCollab Mobile Client for Smart Devices (SIP client)		
MiCollab Audio, Web, and Video conferencing		
Blackberry MVS	Blackberry Enterprise Server	
IP-DECT and/or Wi-Fi		
Polycom or Ascom handsets		

Example mobility solutions

The following sections illustrate how to analyze the user types to determine the right mobility solutions for the fictional business in Figure 1.

Head Office is likely to have several types of workers:

- Office workers, some with remote or at-home offices
  - Desk Workers
  - Telecommuter
- Professional staff who spend all their time in meetings, some of which may take place off-campus
  - Mobile Information Workers
  - Hyper-Mobile Professionals
- Executive and sales staff who travel much of the time

When planning the mobility solutions to deploy at the Head Office, see Table 5, Table 7, and Table 9. For product documentation, see Mitel OnLine.

The Factory, as shown in Figure 1, is likely to have several types of workers:

Many of the workers will remain at their stations, but they may not need phones. Supervisors will want to use their cell phones as they move around the plant. They may also want to occasionally work on a PC at a desk.

Workers in the factory may include the following types:

- Office workers

    - Desk Workers
- Professional staff that spend time both in the factory and at Head Office
    - Mobile Information Workers
- Assembly-line trouble shooters that must be available in real time, and are never at a desk.
    - On-Site Mobile Task Workers

When planning the mobility solutions to deploy at the Factory, see Table 5, Table 7, and Table 9. For product documentation, see Mitel OnLine.

Warehouse workers, as shown in Figure 1, are more likely to operate in a dusty environment, so standard phones may not be practical. Worker would not need any off-site communications, but it is important for them to be able to respond immediately to requests. Some proportion of the warehouse workers would also need bar code readers. There may also be security workers on staff.

Workers in the warehouse shown in Figure 1 are likely to be:

- On-site Mobile Task workers

When planning the mobility solutions to deploy at the Warehouse, see Table 5. For product documentation, see Mitel OnLine.

Licensing details - what you get

Table 11 shows the capabilities and product licenses that you get with each level of license bundle. For more information about licensing your enterprise, please speak with your Mitel representative or reseller.

Table 11: Licensing details

	ENTRY	STANDARD	PREMIUM
	DESK WORKER ON-SITE TASK WORKER	TELECOMMUTER MOBILE INFORMATION WORKER	MOBILE TASK WORKER HYPER-MOBILE PROFESSIONAL
MOBILE VOICE			
Single Number reach	Mobile phone • Hand-off (desk/mobile) features	Multiple devices • Hand-off (desk/mobile) features	Multiple devices • Hand-off (desk/mobile) features
Single Identity Calling		Corporate directory • MiCollab Mobile Client (for Web)	Corporate directory, native contacts • MiCollab Mobile Client for Smart Devices
Presence		Share/View Activity • MiCollab Mobile Client (for Web)	Share/View Location and Activity • MiCollab Mobile Client for Smart Devices

Table 11: Licensing details

	ENTRY	STANDARD	PREMIUM
	DESK WORKER ON-SITE TASK WORKER	TELECOMMUTER MOBILE INFORMATION WORKER	MOBILE TASK WORKER HYPER-MOBILE PROFESSIONAL
Call control		Smart phone/ IP-DECT • MiCollab Client Desktop	Smart phone/Tablet/ IP-DECT • MiCollab Client Softphone
VoIP Wi-Fi/4G calling			
Remote desktop			
MOBILE COLLABORATION			
Audio/Web			
Video			
MOBILE WORK FLOW			

Security for mobility solutions

For information about securing voice and video in your Mitel Mobility Solutions, refer to the MiVoice Business System Administration Online Help, under the topic Voice Streaming Security. MiVoice Business Release 7.0 adds a setting on the **System Options** form to enable voice and video SRTP encryption. (**Voice/Video SRTP Encryption Enabled**)

Chapter 3

MOBILITY INTEGRATION

Mobile Integration

This chapter discusses integration of smart phones and tablets with your company networks.

MiCollab Client and MiCollab Mobile Client

MiCollab Client (formerly UCA) merges the call control capabilities of Mitel communications platforms with contact management, dynamic status and collaboration, to simplify and enhance communications. Use MiCollab Client or MiCollab Mobile Client, or both together.

MiCollab Client offers:

- Rich presence and availability
- Softphone
  - Access from any location with a high-speed connection
  - Communicate and collaborate from anywhere
  - Cost savings for no-phone set environments
  - Softphone has complete desk phone functionality: all phone calls, prompts, and features are available from a PC.
- Point-to-point video
- Secure instant messaging
- Visual voice mail
- Mobility support for BlackBerry, Android, iPhone, and iPad
- Integration with Microsoft Outlook and Office, and IBM Lotus Notes
- Integrated with MiCollab audio, web and video conferencing (previously called MCA): You can launch MiCollab conferences from the MiCollab Client main window.
- Knowledge Management: Stores project docs and associates them with a MiCollab Client user, so you can pull them up easily when working with another MiCollab Client user.
- Teamwork Mode is available in MiCollab Client 5.1: Teamwork Mode provides the ability for a web-based client to have certain MiCollab Client functions without having a Mitel phone (without being tied to a PBX). Non-telephony based features such as contact grouping, presence, dynamic status and chat are supported.

When you add MiCollab Mobile Client, you add the following functionality:

- Mobile SIP Softphone: Users can use the SIP-based softphone on Desktop, Android, and iOS clients.

Note: The SIP Softphone is supported on MCD Release 5.0 SP2+, and also on the MiVoice Office.

- Users can access corporate resources without a computer, using the browser on any mobile device that includes browser support.

- MiCollab Mobile Client supports mobile access from browsers on PC, Mac®, BlackBerry, iPhone, iPad, Android, Microsoft Windows® Mobile®, and Nokia. For detailed information about features supported on each of these devices, see Table 13, “MiCollab Mobile Client Comparison,” on page 11.
- Users can initiate calls from the corporate PBX for call management and recording, and to move the cost from the mobile network to the enterprise (using OfficeLink).

Note: OfficeLink is embedded in the MiCollab Mobile Client. When accessing the feature from the Client, the remote worker specifies the called party number and their local device number; MiCollab Mobile Client places a call to the local device and once answered, places the outbound call and links the two calls together. This is an extremely cost-effective solution for businesses that require a disaster recovery solution, or for users who travel internationally.

- Users gain location-based presence based on their GPS, Bluetooth, or Wi-Fi location.
- MiCollab Web Portal allows remote access to key information from a web browser or mobile device, including:
  - Managing Dynamic Status
  - Editing Dynamic Extension
  - Viewing corporate contact details and presence information
  - Viewing detailed call history
  - Viewing voice mail message details

You can also combine MiCollab Client with other solutions.

- MiCollab Client with MVS. See “BlackBerry Mobile Voice System (MVS)” on page 15.
- MiCollab Client Softphone options. MiCollab Client can be used through MBG or through an existing VPN:
  - MBG: Configure to support Real-time Transport Protocol (RTP) traffic generated by remote softphones.
  - VPN: A gateway-to-gateway VPN can be constructed between branch offices (or homes) and the main office, if desired, such that all the PCs in the remote office have full access to the corporate LAN. However, Mitel advises that only non-voice traffic be routed across the VPN; voice traffic between sets and the MBG should traverse the Internet whenever possible. Routing real-time voice protocols across a VPN can result in poorer service.
- MiCollab Mobile Client for BlackBerry working through MBG or through the BlackBerry Enterprise Server (BES) to connect to MiCollab Client server.
  - MBG: See “MiVoice Border Gateway (MBG) - SIP only” on page 9.
  - BES/MVS: See “BlackBerry Mobile Voice System (MVS)” on page 15.
- MiCollab Mobile Client clients:
  - Wi-Fi connections: When mobile phones are used on a Wi-Fi connection, you avoid mobile and roaming charges.

- GSM connections: When mobile phones are connected on the global cellular network, roaming charges apply. You can save money by setting up staff mobile phones to use your company Wi-Fi network while they are on-site.

Comparing MiCollab Mobile Client and Dynamic Extension

Table 12 compares the features supported by Dynamic Extension and MiCollab Mobile Client.

Table 12: Dynamic Extension vs. MiCollab Mobile Client

CAPABILITY	DYNAMIC EXTENSION	MICOLLAB MOBILE CLIENT
Single Number Reach	√	Note 1
Single Business Voice Mail	√	Note 1
Simultaneous Ring	√ - Up to 8	Note 1
Mid-call PBX Features using keypad	√	Note 1
PBX Feature GUI on Mobile		
Call Hand-off - moving active calls between devices	√ - Any PRG device	Note 1
User Admin - Twinning ON/OFF	√ - Desktop/TUI	√ - GUI
User Admin		
• Twinning Scheduling (TOD)		√
• Routing by Status, Calendar, Location		√
• Twinned number via GUI		√
OfficeLink		
• Call-back: web: PBX-based calling		√
• Call-back: Mobile: PBX-based calling	√ - EHD	√ - Web/Mobile
• Call-through: Mobile: PBX-based calling	√ - EHD	
• From Mobile Contacts/Call log		√ - Excludes Call Log[2]
• From Corporate Directory		√ - Mobile
Presence Status		
• of Mobile User	√	√[3]
• of Corporate Contacts		√ - Mobile[3]
Corporate Directory from Mobile		√
Instant Messaging on Mobile		√ - Mobile
Visual Voice Mail on Mobile		√
Unified Call History on Mobile		√

Notes:

1. With Dynamic Extension.
2. Except for MiCollab Mobile Client for Apple iOS.
3. Telephony and Instant Messaging.

MiCollab Audio, Web and Video conferencing (AWV)

MiCollab audio, web and video conferencing (formerly MCA) is an integrated application to create audio, video, and web conferences using corporate directories and personal address books from Microsoft Outlook and Lotus Notes.

MiCollab audio, web and video conferencing is a feature of MiCollab (formerly MAS) server, which is linked by an Ethernet connection to the IP network. A link on the MiCollab server provides access to a web-based administrator interface for configuring conference parameters, scheduling conferences, viewing conference calls, and administering collaboration controls. You can access all interfaces through HTTP or HTTPS.

Because MiCollab AWV must be installed on a MiCollab server (v2.0 or later), hardware requirements for the server are determined by MiCollab requirements. Refer to the *MiCollab AWV Conferencing Configuration and Maintenance Manual* and the *MiCollab Client Engineering Guidelines* for detailed information. These guides are available on Mitel OnLine.

Authorization and authentication allow only valid users to access services. To meet the highest security requirements, MiCollab AWV uses Secure Sockets Layer (SSL) encryption for secure messages, server-side digital certificates, and CAST 128-bit encryption for data transmission during web conferences. MiCollab AWV provides:

- Instant, flexible calling: Initiate an instantaneous call or create a conference call from a two-party call. You can also schedule a conference call for a meeting time in the future.
- Complete call control and management: Add and drop call participants and mute, hold, or transfer the call directly from the desktop. A Call Detail Record (CDR) provides a log of all calls. The CDR includes the dates and times and call duration of all calls for billing purposes.
- Cost-effective conferencing: Delivers the most cost-effective group calling, with ultimate flexibility to customize solutions to best meet individual needs.
- Web-based collaboration tools: Facilitates online meetings, training, and presentations, with features designed for sharing your desktop or individual applications. MiCollab AWV enhances conferences to increase participation and understanding by using interactive markup tools, user polling, and video-conferencing. Use the file transfer utility to immediately share the outcome of online collaborative sessions by transmitting updated files and presentations to conference participants.
- Conference archiving: Create recordings of conference calls and collaborative sessions for playback later.

MiCollab Audio, Web, and Video client

The full MiCollab AWV client allows you to perform all configuration, user provisioning, and administration, in addition to the conferencing and collaboration functionality:

- Web conferencing settings
- Port reservation settings
- System options
- LDAP configuration
- Voice prompts

- Music on Hold settings
- Licensing
- User interface (with the User Interface Wizard)
- DAS (Dial Access String) rules
- SIP Server for Mitel 330 ICP, Mitel 5000, or Inter-Tel Axxess

MiCollab AWV web client

MiCollab AWV includes a web client that is supported on several browsers, including tablet and smart phone browsers. The MiCollab AWV web client supports a subset of the features. You can use the following features from the web client:

- Chat
- Participant: tab functions - Mute, Hold, Drop participant, Add participant, View participant properties
- Share: documents, application, region of desktop
- Signaling

For supported browsers and versions, refer to the MiCollab AWV documentation.

MiVoice Border Gateway (MBG) - SIP only

MBG is used for businesses of all sizes, and by service providers, for the secure deployment of multiple network connectivity services in a variety of network edge scenarios. MBG provides secure, trusted connectivity between LAN and public Internet, and allows MiVoice Business to work seamlessly behind a company firewall. MBG turns any phone into a teleworker device.

Use MBG in the following applications:

- Teleworker service: Secure remote MiNET and SIP access for IP Phones on MiVoice Business, and NAT traversal for tenant offices for MICD.
- SIP Trunk Proxy Service: Serves as a SIP-aware firewall at the edge of the company network, and eliminates the need for third-party firewalls. MBG also simplifies configuration and deployment.
- Application Web Proxy Service: Enables trusted connectivity between the company LAN and the Public Internet to provide secure access for unified communication and collaboration using the MiCollab.

Mobility applications of MBG

There are two primary ways to use the MBG to provide mobility functions: in Teleworker applications, and in the ability to maintain secure and unified communications with head office from anywhere using Mitel Unified Communications products like MiCollab Client (formerly UCA).

Using MBG in Teleworker applications

When a MBG server is installed in the office network, extensions from the supported switch can be extended across the Internet to permit Mitel phones to work from homes, remote offices, and hotels, for example.

Using MBG with MiCollab Client

MiCollab Client supports mobile access from browsers on PC, Mac, BlackBerry, iPhone, iPad, Android, Microsoft Windows Mobile, and Nokia devices.

To allow remote users to use MiCollab Client, MBG acts with the MiCollab Client Service (formerly called the UC Server) to provide a secure window through the company firewall for the MiCollab Client functions.

- Remote MiCollab Client Desktop Client users use the MBG server to access the MiCollab Client Server and other integrated applications, such as the unified messaging feature (including voice mail) and MiCollab AWV, when MiCollab Client is communicating with the MiVoice Business PBX.
- Remote web browser users and MiCollab Mobile Client clients connect to MiCollab Client in the LAN through the Web Proxy. Remote MiCollab Client Desktop Client users connect to MiCollab Client in the LAN through the Teleworker service in the MBG server.
- An MBG server with Web Proxy installed in the DMZ or on the network edge protects the MiCollab Client Service in the LAN from Internet exposure.

These configurations provide a secure method for remote web browser users and remote MiCollab Client Desktop Client users to connect with a MiCollab Client Service located on the corporate LAN. They also provide MiCollab Mobile Client clients (mobile devices with a MiCollab Mobile Client application installed) access to MiCollab Client in the LAN.

Bring-your-own-device: integrating employee-owned mobile phones

More and more, employees want to be able to use their own mobile devices for both personal and business calls.

MiCollab Web Portal

The MiCollab Web Portal provides remote access to a subset of MiCollab Client features from a native web browser on a mobile device.

The mobile device must be running one of the supported mobile operating systems. For supported browsers and versions, refer to the MiCollab AWV documentation.

MiCollab Mobile Client for BlackBerry, Android, iPhone, and iPad

MiCollab Mobile Client for mobile devices is a stand-alone mobile client application that provides dynamic status updates based on time, GPS location, and Wi-Fi/Bluetooth connection options. In addition, MiCollab Mobile Client provides an integrated environment in which users can communicate with corporate contacts, and access and manage visual voice mail and call history. Shortcuts and widgets provide customization options, including using MiCollab Client Softphone features using the SIP-based Softphone on mobile devices.

MiCollab Mobile Client also supports Teamwork Mode, which allows MiCollab Client to work without being tied to a PBX. A subset of features are supported in Teamwork Mode. For more information about Android support and Teamwork Mode, refer to the *MiCollab Client Administrator Guide* for MiCollab Client 5.1+.

- MiCollab Mobile Client for BlackBerry

  MiCollab Mobile Client for BlackBerry requires a Blackberry mobile device running BlackBerry OS 5.0 or later.

- MiCollab Mobile Client for Android

  MiCollab Mobile Client 5.1 for Android requires an Android mobile device running version 4.0 or later.

- MiCollab Mobile Client for iPhone

  MiCollab Mobile Client operates on the Apple iPhone platform. iOS version 6.0 or later is supported. iPhone versions 2.0 and later are supported.

- MiCollab Mobile Client for iPad

  MiCollab Mobile Client operates on the Apple iPad platform. iOS version 6.0 or later is supported. iPad versions 4.0 and later are supported.

Comparing available features on the supported mobile devices

While the MiCollab Mobile Client client can be installed on iPhones, iPads, and BlackBerry and Android devices, and the primary functionality is supported on all of them, there are differences in the operating systems for these mobile devices that result in different coverage of the MiCollab Mobile Client features. Table 13 lists the MiCollab Mobile Client features and which mobile devices support each feature.

Table 13: MiCollab Mobile Client Comparison

FEATURE	BLACK-BERRY	ANDROID	IPAD	IPHONE
Access to Application				
Download from Online Store	√	√	√	√
Download from MiCollab Client Server	√	√		
General Configurations				
Setup Wizard	√	√	√	√
Test Connection	√	√	√	√
Send Diagnostics (e-mail)	√	√	√	√
Change Password	√	√	√	√
My Dynamic Extension	√	√	√	√
Change Dynamic Extension Label	√	√	√	√
About	√	√		
Get More Information	√			

Table 13: MiCollab Mobile Client Comparison

	FEATURE	BLACK-BERRY	ANDROID	IPAD	IPHONE
	Client Statistics		√	√	√
	Network Diagnostics	√	√		
	Event Viewer	√		√	√
	Switch Input Language	√	√		
	Change Your Picture		√	√	√
	Edit Auto Attendant Number		√	√	√
	Un-hide Locations	√		√	√
	Un-hide Call Logs			√	
	Address Book Tagging	√	√	√	
	Home Screen Item Customization		√		
	Set Default OfficeLink Device	√	√		
	Set Default Device for Extension Calling		√		
	Plus (+) Dialing Settings **Note:** Moved to server for all devices with MiCollab Client 4.1	√	√		
	Notification Settings		√		
	Background Data Control		√		
	Destinations Management		√		
	Voice Action Preview		√		
	All the data Shown on the Screen are Dynamic		√		
Main/Home Screen					
	Dynamic Status: view current status from home screen	√	√	√	√
	Change Dynamic Status	√	√	√	√
	Edit EHDU Number				
	Custom Text/Advisory Message	√	√	√	√
	Missed Call History			√	√
	MiCollab Client Status Icon on Main Screen	√	√		
	Contacts and Scroll Search			√	
	GPS Locations Status (on/off)	√			
Call History					
	Missed Calls	√	√	√	√
	Answered Calls	√	√	√	√
	Dialed Calls	√	√	√	√

Table 13: MiCollab Mobile Client Comparison

FEATURE	BLACK-BERRY	ANDROID	IPAD	IPHONE
Place OfficeLink Call from Call History	√	√	√	√
View Contact with Presence	√	√	√	√
Share Contact			√	
Remove from Favorites			√	
Add Contact to Address Book			√	
Link with Existing Address Book Contact **Note**: On Android: **Contacts > Options**		√	√	
Visual Voice Mail				
Message Playback	√	√	√	√
Callback using OfficeLink	√	√	√	√
Change Mailbox PIN	√	√	√	√
Place OfficeLink Call from Voice Mail	√	√	√	√
Refresh list	√	√	√	√
Delete	√	√	√	√
Download File			√	
Forward Message via E-mail			√	√
Real-time Notifications	√	√		
Call MiCollab Client Voice Mail	√			
Play Message Automatically Open			√	√
Corporate Contact				
Search	√	√	√	√
First name	√	√	√	√
Last name	√	√	√	√
View Presence	√	√	√	√
View Dynamic Status	√	√	√	√
Send E-mail to Contact	√	√	√	√
Place Call to Contact (OfficeLink)	√	√	√	√
View Call History for Contact			√	
Start and End of day Timers for Changing Dynamic Status		√	√	
Global Contacts Search		√		
Dynamic Status Update Options				
Bluetooth	√	√		

Table 13: MiCollab Mobile Client Comparison

FEATURE		BLACK-BERRY	ANDROID	IPAD	IPHONE
	GPS	√	√	√	√
	Wi-Fi	√	√		
	Time of Day		√	√	√
Location Settings					
	Measurement Units	√			
	Store Locations option	√	√		
	Use Only Cell Site GPS	√			
	Use Hot Keys	√			
	Allow Status Updates During Calls	√			
	Show Peered Contacts	√			
	Enable Real Time Notifications	√			
	GPS Corporate Locations Set from Device	√	√	√	√
	Scheduler: set start and end times for GPS to be used to manage Dynamic Status	√			
	Wi-Fi Dynamic Status Changes	√	√		
	Bluetooth Dynamic Status Changes	√	√		
Dynamic Status					
	Create New Status	√	√	√	√
	Edit Status	√	√	√	√
	Change Call Routing	√	√	√	√
	Set DND			√	√
	Set Auto Answer			√	√
	View Locations for Status Trigger			√	
	View Schedule used for Status Trigger			√	
Scheduler					
	Create new Dynamic Schedule		√	√	√
	Edit Dynamic Schedule		√	√	√

BlackBerry Mobile Voice System (MVS)

With the combination of MiVoice Business and BlackBerry MVS, BlackBerry smart phones become extensions of the PBX, providing a single interface to all users' business communications needs, and securely maintaining a single identity for both inbound and outbound dialing. Customers always know where users can be reached and your organization

can present them with a single corporate identity throughout the calling experience. Because the solution leverages the hardened security of the BlackBerry Enterprise Server (BES), users are validated against a single set of centrally-stored credentials, simplifying and protecting the maintenance of sensitive data.

Deployment of MVS requires:

- MiVoice Business and SIP trunk licenses. MVS runs as an integrated MiVoice Business end-point.
- BlackBerry Enterprise Server (BES)
- Each BlackBerry MVS user needs an MiVoice Business user license.

Enterprise benefits:

- BlackBerry Enterprise Server (BES) and Mobile Voice System (MVS) are VMware-Ready, and can run with MiVoice Business Virtual or MiVoice Business for industry-standard servers. (BES 5.x and MVS 5.x)
- You can reduce wireless costs by enabling voice over Wi-Fi calling. Users’ mobiles connect through your on-site Wi-Fi or through hot spots anywhere in the world. In-progress calls move seamlessly between the mobile network and Wi-Fi.
- You can extend the security features of the BlackBerry Enterprise Server to authenticate BlackBerry device users to the BlackBerry MVS and your organization's MiVoice Business phone system.
- You can manage the BlackBerry MVS from a single web administration console.
- You can incorporate the use of templates and classes of service to manage users' access to their business numbers and phone features.
- You can configure the BlackBerry MVS to support high availability functionality to help enhance the consistency and reliability of your organization's BlackBerry MVS implementation.

User benefits:

- Users choose whether to initiate calls from their personal mobile number or through the corporate PBX. This allows all business calls to be subject to your corporate call management and/or recording, and reduces long distance and roaming charges when users are travelling outside the local calling area.
- Users can dial by extension to reach anyone in the corporate address book.
- Users have just one phone number and one voice mail, so colleagues and customers can easily reach them no matter where they are working. The enterprise caller ID and number appear when calling through the corporate PBX.
- The most frequently used MiVoice Business features are available in the BlackBerry menu. The BlackBerry MVS phone becomes an extension of MiVoice Business and inherits many other features provided to generic SIP devices on MiVoice Business.

  Users have easy access to desk phone features like transfer, park, extension dial, and advanced conferencing, fixed-mobile call handoff, intuitive visual interface, and call filtering.

- Users can move calls between Mobile and Wi-Fi networks and Mitel Personal Ring Group (PRG) devices.
- Users can join an audio, web, or video conference (MiCollab AWV) from their BlackBerry device.
- MVS can be combined with MiCollab Client.

Chapter 4

ON-PREMISE MOBILITY SOLUTIONS

On-premise wireless

Some examples where on-premise wireless is required are:

- Warehouse staff: Since many workers are likely to be very mobile, and rarely at a desk, on-premise wireless helps workers keep in touch with each other, and with product movement requirements. Text messaging and security alarms may be needed. This may also be an harsh environment that requires the handset to be resistant to dust and high or low temperatures
- Nurses or nursing home staff: Medical care staff are often moving directly from one patient to the next, but they need to be reachable for urgent situations. On-premise wireless phones enable medical staff to be reached immediately, and with integration to the Nurse Call bedside alarm systems, respond directly to patient alarms. They will also be able to reach their co-workers or call emergency numbers, if necessary. Phones in this application must tolerate being disinfected.
- Property managers for large properties: Property managers and handymen are always on the move, travelling from one area of the campus to another. With on-premise wireless phones, they can call for help with a two-person project, or if they need someone to bring parts to their location. You will also be able to reach them if you have an emergency—a sudden water leak, for example.
- Campus/Branch mobile worker: Workers who move from meeting to meeting across a large campus may be very difficult to reach at their desks, or they might not even have a fixed desk location. They may need to make and receive internal or external calls. This could be the case in many industries, including manufacturing, health care, distribution, education, and government.

On-premise wireless capabilities are a critical component of solutions for markets such as health care, manufacturing, and retail; support for messaging, large numbers of users, and large coverage areas are now expected in a basic solution for these market segments. Further, certain key market segments demand robust handsets that must operate reliably and safely in harsh environments such as hospitals, warehouses, and in areas of explosion risk.

Choices in on-premise applications are Wi-Fi or IP-DECT. IP-DECT base stations are used to create a dedicated wireless infrastructure for mission-critical voice and messaging—it cannot be shared with data communication.

Wi-Fi is a voice and data solution. In a Wi-Fi network, users are also able to use Blackberry smart phones and other Wi-Fi-enabled mobile devices.

Mitel wireless solutions permit the easy addition of wireless IP handsets to an existing MiVoice Business, using IP-DECT or Wi-Fi.

On-premise IP-DECT

IP-DECT is the on-premise wireless solution of choice when voice is a mission-critical requirement. IP-DECT handsets are available for industrial environments where resistance to a greater than normal temperature range, plus dust, solvents, and moisture is required. These handsets are also more robust and less likely to be damaged by dropping. Handsets ideal for health care, manufacturing, and warehouse applications are available.

In the case where voice communications and messaging are critical for only a subset of employees, and another group must have data for their laptops, tablets, and smart phones, it is not unusual for enterprises to deploy both IP-DECT and Wi-Fi networks in the same physical space.

IP-DECT deployment considerations

Integrating directly with MiVoice Business, the system supports both European and North American DECT standards and can be deployed globally. IP-DECT involves deploying a specific infrastructure with a dedicated frequency spectrum. It does not support wireless data access, so PCs and mobile devices do not share the network.

There is no need for a PBX at branch offices; IP-DECT works over the LAN/WAN, and supports roaming between sites.

For deployment information, refer to the following guides, available on Mitel OnLine:

- *IP-DECT System (Global) Configuration Guide*
- *IP-DECT System Planning*
- *IP-DECT System Description*
- *Open Access Protocol (OAP) Functional Description*
- *Site Survey Tool Guide*

Site Survey

Before deploying an IP-DECT solution, you must perform a site survey to determine the number and placement of base stations (Radio Fixed Parts or RFT), and to identify any areas on the site for which coverage is not possible.

You use the Site Survey Tool (see Figure 3), available from Mitel, to determine how to cover each area where voice reception is required.

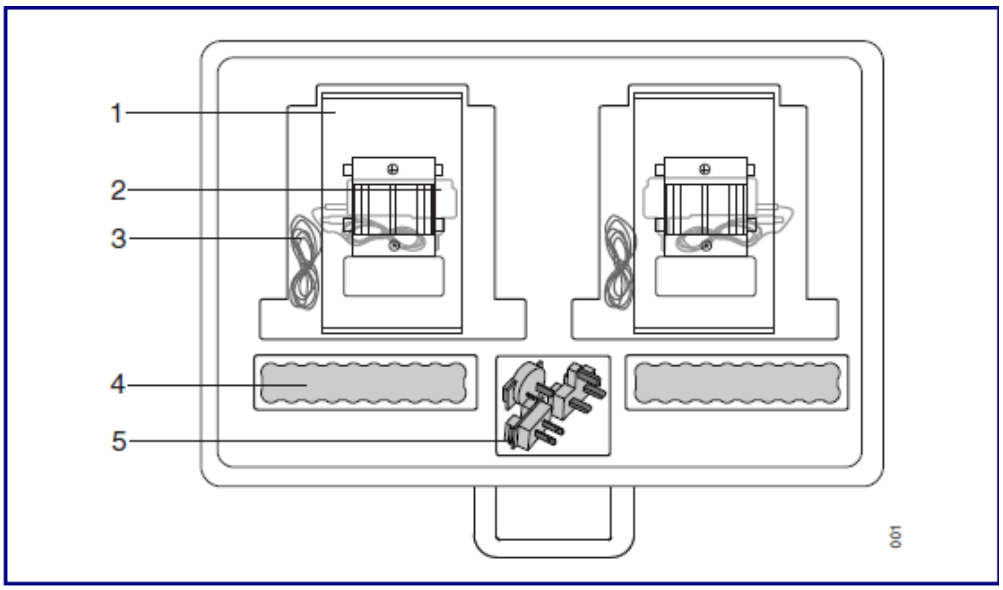

Figure 3: Mitel Site Survey Tool

Notes:

1. Two carrying sets
2. Two battery unit chargers
3. Two 5 meter battery patch cables
4. Two battery units
5. Interchangeable plug attachments (EU, UK, AU+US)
6. Also includes User Guide and carrying case

You perform the site survey using the Mitel Site Survey Tool. For detailed site survey instructions, refer to the *Site Survey Tool Guide* available on Mitel OnLine.

Supported Products

The IP-DECT solution offers up to 2000 handsets per installation through up to 1000 LAN-connected radio base stations delivering comprehensive, cost effective, voice radio coverage. The supported handset and system elements are described in Table 14 below. These products are specifically designed for demanding industrial environments.

Table 14: On-Premise specialized IP DECT products

PRODUCTS	FEATURES
IP DECT Base Station	• Integrates directly with MiVoice Business over the LAN. • Supports eight simultaneous calls. • Provides wireless access to mobile users in the desired coverage area. • Supports SIP over IP • Supports roaming and hand-over. • Supports interactive messaging, alarm, and location when used with Mitel Wireless Services Messaging Gateway.

Table 14: On-Premise specialized IP DECT products

PRODUCTS	FEATURES
5602 Wireless Phone	• Designed for hospitality and retail • Large backlit graphical display • Local phone book • Loudspeaker function • Long talk time • Supports corporate directory access • SMS messaging capability For more information, including the data sheet, visit Mitel.com.
5603 Wireless Phone	• Designed for intense daily use • Offers flexibility and low cost • Simple to use interface • Enhanced MiVoice Business feature interworking over SIP • Can be twinned to the user's desktop as part of their MiVoice Business Personal Ring Group capability For more information, including the data sheet, visit Mitel.com.
5604 Wireless Phone	• Ideal for health care environments • For users who have advanced communications demands • Offers safety features • Offers messaging, Push-to-Talk abilities and customizable options • Solvent and moisture resistance For more information, including the data sheet, visit Mitel.com.
5606 Wireless Phone	• Designed for health care, manufacturing, and industrial environments • Also environments where security and safety are paramount • Provides an illuminated keypad • Protection from moisture and solvents, plus dust and shock • Messaging capable For more information, including the data sheet, visit Mitel.com.
5607 Wireless Phone (new for IP-DECT 5.0)	• Designed to be used in industrial and manufacturing environments • Suitable for users with a need for mobile voice and messaging features • Color display • Offers telephony, messaging, and Bluetooth technology (between the handset and the headset) • Can be upgraded with the Services, Personal Alarm, and/or DECT Location licences For more information, refer to the *Mitel 5607 Wireless Handset User Guide*.
Mitel Wireless Services Messaging (WSM) Gateway	• WSM Gateway is hardware plus embedded software. • Enables the wireless handsets to function as two-way messaging and alarm devices. • Interfaces to MiVoice Business directory (searchable: 2000 entry limit) • Integrates with other enterprise systems or specialized applications to provide mobile workers access to real-time and critical information. • Includes one hardware base unit and two optional licenses.

In addition to its Wi-Fi and IP-DECT offerings, Mitel also offers cordless products like the 5610 DECT Handset and IP-DECT Stand, a single station wireless set for use in hotel and motel guest rooms, for example.

Bluetooth headsets and handsets are supported for Mitel 5300 Series IP Phones with the addition of the Mitel Bluetooth Module for improved flexibility and comfort of office workers.

On-premise Wi-Fi

Wi-Fi is ideally suited to businesses that have a need for both wireless voice and wireless data capabilities and that prefer to deploy these services over a single converged infrastructure.

Wi-Fi involves deploying a VoIP-compatible Wireless LAN (WLAN) infrastructure that can support both VoIP (voice) applications and data applications concurrently. This provides for broader multi-purpose use, but requires more wireless Access Points, more precise site engineering and ongoing management, when compared to IP-DECT.

Wi-Fi deployment considerations

Voice and data have very different requirements, so there is some design and planning that must be done to allow both voice and data to work well over the same Wi-Fi network. The major differences between the requirements of voice and data are shown in Table 15.

Table 15: Differences between voice and data transport requirements

	DATA TRANSPORT	VOICE TRANSPORT
PROTOCOL	FTP, HTTP over TCP	RTP or SRTP
PACKET SIZE	Varies from small to large up to the maximum allowed size, depending on applications	Small All the same size, < 300 Bytes
SENSITIVE TO LOST PACKETS	No. Uses built-in recovery process in TCP.	Yes. Lost packets result in poor voice quality.
SENSITIVE TO DELAYS	No. Can tolerate delays of up to several minutes.	Yes. Requires uninterrupted access to the channel.
SENSITIVE TO DISCONNECTION	Sometimes. It is possible to restore some sessions at the point where they were interrupted.	Yes. Call is dropped.

The behavior of the two traffic types, data and voice, makes it challenging to design a Wireless LAN (WLAN) for mixed traffic. The best way to avoid problems with combining voice and data is to separate the traffic, either physically or logically, so that you can optimize settings for each according to its needs.

Physical separation

A WLAN network can operate on the IEEE 802.11 2.4 GHz or 5 GHz band. Depending on the WLAN access points used, a network may support either of those bands, or both, if the access point is equipped with dual radios. When the access point uses two radios, the WLAN can be

considered as two independent WLANs that are physically separated by the use of different frequencies.

An access point that has only one radio must use protocol features that mitigate the effects of using one WLAN for both voice and data.

Physical separation of traffic types in a wire-line network is achieved by pulling two cables side by side. It is quite common for IT departments to build a second, completely independent, network, which is used only to manage infrastructure devices that have additional management ports, a WLAN controller, for example. The benefit of this strategy is that the management network will continue to function even if the regular network fails. Physical separation of Wi-Fi traffic is, however, only possible by using different radio channels for different traffic types. If voice has to share channels with any other type of data, Wi-Fi Multimedia™ (WMM) priority protocol must be used.

Logical separation using WMM

All clients in a wireless cell have equal access rights to the air unless priority schemes are used. Laptop computers that use streaming audio and video applications like video conferencing, require high bandwidth and steady, regular access to the network. The large video packets use a lot of the bandwidth, leaving less air-time available for voice calls.

Using the IEEE 802.11e standard (WMM), when configured correctly, gives voice packets a higher priority than other types of packets. This can prevent data clients from monopolizing the WLAN.

Logical separation using VLANs

When using virtual LANs (VLANs), traffic types can be separated from each other. Routers and switches can be configured to treat traffic differently, depending on which VLAN it is on.

Note that separating traffic onto different VLANs prevents devices on different VLANs from communicating with each other. To allow management traffic to all of the devices, you must define a route for this communication between the VLANs.

Wi-Fi Access Point location

The Wi-Fi Access Points can be placed behind the company firewall or outside the firewall in a public hotspot, for example, or at the employee's home.

Supported products

Table 16 describes the products dedicated for use with Wi-Fi deployments in such industries as health care and hospitality. Table 17 shows a list of products that can be used in the office Wi-Fi network, and that can also be used in other environments.

Table 16: Specialized Wi-Fi devices

PRODUCTS	FEATURES
MiVoice 5624 (Ascom i62)	• SIP-enabled handset with color display, telephony, and messaging. • Supports 802.11a/b/g/n (Wi-Fi) standards. • Additional features can be licensed in three versions: Services, Personal Alarm, Wi-Fi Location and Shared Phone. • Designed for office environment with medium durability requirements; ideal for hospitals. • Integrates and communicates with a wide range of external sources, allowing managing and configuring the handsets in a mixed IP-DECT and Wi-Fi environment.
Polycom 8020 handset Polycom 8030 handset	• Supports 802.11a/b/g (Wi-Fi) standards. • Extended battery life and high-resolution display. • Can be deployed as a personal handset or a device that is shared by multiple shifts. • handset is durable; it meets stringent industry standards for resistance to dust, shock, and liquids. • For more information, visit Mitel.com.
Polycom SpectraLink 8440 and 8450 Wireless Telephones	• Designed for enterprise grade on-site voice mobility. • Ideal for retail, health care, or manufacturing; industries that require durable handsets with advanced office and application integration capabilities. • 8450 offers integrated barcode scanner
Other MSA-approved Wi-Fi devices	• Third-party devices dedicated to the on-premise Wi-Fi application are available, and can be used with Mitel equipment. • For more information about the Mitel Solutions Alliance (MSA) and products that are MSA-approved, refer to www.mitel.com/partners/partner-programs/mitel-solutions-alliance

Table 17: General office Wi-Fi products

PRODUCTS	FEATURES
MiCollab Client Softphone for smart phones and tablets	• Intuitive communications management from a remote PC or laptop by using an embedded software-based IP phone. • When remotely connected to MiVoice Business or the Mitel 5000 Communications Platform (CP) through a secure network connection, mobile users can make and receive calls as though they were inside the corporate network.
SIP Softphone	• Works with MiCollab Client and Dynamic Extension to send alerts and incident notifications to users on their desktops or mobile phones.

Table 17: General office Wi-Fi products

PRODUCTS	FEATURES
BlackBerry MVS	• Delivers Fixed Mobile Convergence (FMC) for cellular and Wi-Fi VoIP calling on compatible BlackBerry devices when integrated with MiVoice Business. • MVS user becomes a mobile extension of MiVoice Business when in the office over a Wireless LAN, on the road over a wireless network, when in a coffee shop over a Public Wi-Fi, or when at home over a Wi-Fi router. • See "BlackBerry Mobile Voice System (MVS)" on page 14.
Other MSA-approved SIP softphone solutions	• Third-party SIP softphones are available, and can be used with Mitel equipment. • For more information about the Mitel Solutions Alliance (MSA) and products that are MSA-approved, refer to www.mitel.com/partners/partner-programs/mitel-solutions-alliance

Comparing Wi-Fi and DECT

The following sections compare the Wi-Fi and IP-DECT solutions. Table 18 compares IP-DECT and Wi-Fi features and capabilities.

Table 18: IP-DECT vs. Wi-Fi

	IP-DECT	WI-FI
Protocol	DECT	IEEE 802.11
PBX interface	SIP	SIP
Max size of system	• Up to 1000 base stations • Up to 1000 wireless handsets per master	• No limitation
Range	50 m indoors 200 m outdoors	Wireless A: 35 m (115 ft) Wireless B: 38 m (125 ft) Wireless G: 38 m (125 ft) Wireless N: 30 m (100 ft) indoor; 100 m (330 ft) outdoor line-of-sight With additional antenna: 130 m (300 ft) **Note:** These are rough approximations. The range values vary, depending on the Wi-Fi access point manufacturer.
Telephone calls (MiVoice Business and MiVoice Office support features differently; see Table 20)	• MiVoice Business (over SIP) • MiVoice Office 6.0 and up (over SIP)	• MiVoice Business (over SIP) • MiVoice Office 5.2 and up (over SIP)
Handset talk-time	• 16-20 hours talk-time, depending on handset model	• 8-15 hours talk-time, depending on handset model

Table 18: IP-DECT vs. Wi-Fi

	IP-DECT	WI-FI
Spectrum	• Europe, Australia, New Zealand, Asia - 1.880 – 1.900 GHz band; 250 mW. • North America – 1.920-1.930 GHz band; 100 mW. • South America - 1.910 – 1.930 GHz band; 250 mW. • Brazil – utilizes RFPs for Latin America with the number of carriers reduced to four.	• Wireless A: 5 GHz • Wireless B: 2.4 GHz • Wireless G: 2.4 GHz • Wireless N:5 GHz and 2.4 GHz
Max number of devices per installation	• 8 simultaneous calls per base station • The system can be scaled up to 10,000 handsets and 1000 LAN-connected radio base stations.	• 8-10 simultaneous calls per access point (assuming no data is being sent) • MiVoice Business supports up to 3000-5000 SIP sets. (the lower number is for display sets). **Note:** These values vary, depending on the Wi-Fi access point manufacturer
“Hopping” from one “station” to another (hand-off)	Wireless handsets move seamlessly from one base station to another (hand-over) as the caller moves from one base station to another.	Seamless movement from one Wi-Fi access point to another
Security Network access	• Authentication of handsets before calls are allowed	• WEP (older standard) • WPA • WPA2 (current standard)
Security Data Traffic	• Encryption (DECT Standard Ciphering Algorithm - DSCA)	No inherent encryption: You can secure data traffic using: • TLS • SRTP
Interference	Operated in dedicated frequency band; nothing but IP-DECT operates in the DECT frequency band. **Note:** There is the potential for interference if non-synchronized DECT handsets are present.	Susceptible to interference from: • cordless telephones • microwave ovens • other Wi-Fi networks in range and using the same channel
Supported phones	See Table 14.	See Table 16 and Table 17. Also refer to the *Mitel 3300 ICP SIP CoE Compatibility Reference Document*.

Platform support: MiVoice Business vs. MiVoice Office

Table 20 shows the differences in the features supported in the on-premise situation.

Note: MiVoice Business was previously called MCD for releases before 7.0. MiVoice Office was previously called Mitel 5000 CP.

Phone support also differs between the MiVoice Office and MiVoice Business, as shown in Table 19.

Table 19: Spectralink phone support on MiVoice Business vs. MiVoice Office

SPECTRALINK PHONES	MCD 4.2 AND HIGHER MIVOICE BUSINESS 7.0	MIVOICE OFFICE 5.0 SP1 AND HIGHER
Polycom 8020 and 8030 with SVP	SIP Integration Legacy Wi-Fi infra 8000 SVP Server 8000 OAI Gateway	Not recommended
Polycom 8020 and 8030 without SVP	Direct SIP Integration - QoS Enhanced Wi-Fi infra 8000 OAI Gateway	Not recommended
Polycom 8400 series	Direct SIP Integration - QoS Enhanced Wi-Fi infra XML/HTML/WebKit Applications 8000 OAI Gateway - compatible	Direct SIP Integration - QoS Enhanced Wi-Fi infra XML/HTML/WebKit Applications 8000 OAI Gateway - compatible

The following table compares the feature support available on MCD 4.2 and the MiVoice Office, using the Polycom 8020/8030 on MCD 4.0, and Polycom 8400 on MCD 4.2.

Note: Use of Polycom 8020/8030 with the MiVoice Office is not recommended.

Table 20: MiVoice Business vs. MiVoice Office

FEATURES		MIVOICE BUSINESS	MIVOICE OFFICE
Dynamic Extension Express (DEE)	Twinning support	√	A user's desk phone can be used to push calls to a DEE associated cordless handset, but the handset cannot push or pull calls to other devices.
Single Number Reach		Simultaneous ringing of up to 8 devices	Up to 10 routing definitions
Basic Calling	Make a Call	√	√
	Receive a Call	√	√
Hold/Retrieve	Hold	√	√
	Retrieve	√	√
Music on Hold		√	√

Table 20: MiVoice Business vs. MiVoice Office

FEATURES		MIVOICE BUSINESS	MIVOICE OFFICE
Call Display (Name/Number)	Calling	√ - Name from IP or TDM	√ 8020/8030: name and number are truncated
	Called	√ - Not supported to TDM	x
	Forwarded	√ - Call originator name	x
	Transferred	X - Transferer name	x
Transfer	Supervised	√	√
	Unsupervised	√	√
Reverse Transfer	Retrieve a ring/held call		x
Call Forward	Unconditional	√ - System-based	√ - Device-based 8020/8030: not supported
	Busy	√ - System-based	√ - Device-based 8020/8030: not supported
	No Answer	√ - System-based	√ - Device-based 8020/8030: not supported
	Out of Service	√	√ - Device-based 8020/8030: not supported
Three-way Conference		√ 8020/8030 - System-based	√ - Device-based 8020/8030: not supported
Message Waiting Indication (MWI)		√	√ 8020/8030: not supported
Call Waiting and Retrieval		√ - with call waiting name display and tone	√
Do Not Disturb (DND)		√	√ - Device-based 8020/8030: not supported
Voice Paging	Direct Page (send)	√	x
	Direct Page (receive)	x - will ring, but will not auto-answer	x
	Group Page (send)	√ - to non-SIP devices	√ - to non-SIP devices
	Group Page (receive)	x - will ring, but will not auto-answer	x
	Loudspeaker Paging	√	√
Call Park	Call Park	√ - cannot specify “slot”	√ - Transfer to Phantom or Hunt Group 8020/8030: cannot specify “slot”
	Call Retrieve	√	√ 8400: Reverse Transfer from Ringing or Held

Table 20: MiVoice Business vs. MiVoice Office

FEATURES		MIVOICE BUSINESS	MIVOICE OFFICE
Call Pickup	Call Pickup	√	
	Directed Call Pickup	√	
	Group Call Pickup	√	
Multiple Calls per Line		√ - up to two calls per line	√ - up to two calls per line
Multiple Line Appearances		x - can configure up to 5 lines, but line appearances are not reflected across the system	x - can configure up to 5 lines, but line appearances are not reflected across the system
Resiliency	3300-based SIP resiliency	√	x
CODEC support	G711u/a; G729	√	√
SIP Authentication		√	√
MBG/Teleworker	Public Wi-Fi Access	√ - 8400 Not supported for 8020/8030.	x
Early Media			√ 8020/8030: not supported

Note: Resiliency is not supported for MiCollab Mobile Client, MiCollab AWV, MiCollab Client, or MiContact Center Office (formerly CSM) services. In a fail-over situation, the MiCollab Mobile Client twinning feature is inoperative. On-premise twinning is still available.

Dynamic Extension

Dynamic Extension allows users to add a home phone, a mobile phone, or even an extension on a third-party PBX—effectively any phone—to a Personal Ring Group (PRG). Each user can add up to eight devices to their PRG.

Dynamic Extension provides “embedded twinning,” which allows external destinations to be seen as a local DN on the MiVoice Business system.

Note: This is not the same as multi-phone installations in a hospitality context. In the hospitality application, the multiple phones can handle only one call; if one phone is busy, all of the phones in the room are busy.

Dynamic Extension offers these features:

- Users can make and receive calls through the PBX using many different devices.
- Users have simple access to desk phone features like Transfer, Park, and extension dial.
- No server or client software is required.
- Users can seamlessly move active calls to another device in their Personal Ring Group (PRG). They can:
  - move the call to a different device in the PRG
  - move the call from a different device in the PRG

- Each user has just one phone number, one voice mail box, and a PRG with up to eight devices.

You can keep all the legacy telephones and the existing phone system, and use the Mitel solution as a gateway to upgrade performance with Mitel Mobility and all the features of MiVoice IP Phones.

Note: Dynamic Extension requires a connection to a MiVoice Business controller to work.

Twinning

Twinning groups contain two members, usually a desk phone and a cell phone. Starting in MCD 6.0, twinning does not require an Multi-device User license.

To license twinning requires creating an Twin group:

- The twinning group can contain two members (including the prime member).
- If the prime member is an EHDU or the group contains a non-prime member, an EHDU license must be available and is consumed on the primary node.
- If the prime member is an IP user, an IP user license must be available on the primary node.
- The non-prime member does not have to be an EHDU.
- The non-prime member and prime members of a Twin group must have the same primary MiVoice Business system.
- The non-prime member cannot be called directly so the non-prime member should not be configured as a CESID callback number.

To change an Twin group to a Standard group, a Multi-device Users license must be available on the primary node.

When adding or replacing a non-prime member to an Twin group, an EHDU license must be available for consumption on the primary node.

When programming resilient Twin groups, the secondary node must be running MCD version 6.0 or later and be in SDS sharing mode. The non-prime member and prime member must have the same primary host.

SIP line-side integration

SIP integration is supported for Mitel applications and many third-party applications as well. Refer to the following documents, available on Mitel OnLine.

- *Interop Testing and Certification*
- *SIP Trunking Interop Reference*
- *SIP Trunking Interop Detailed Test Plan*

The SIP standard focusses on initiating, modifying and terminating sessions. SIP is decentralized; it is up to the parties establishing the session to negotiate the attributes of the session.

Mitel SIP supports Voice over IP (VoIP) plus multimedia/video, instant messaging, fax, and web integration.

The Mitel SIP implementation offers the following special features:

- PRACK Support: Allows you to control the use of reliable provisional responses (PRACK) on the device level, overriding the global or trunk settings.
- Options Keepalives: You can now send keepalive messages to individual SIP devices. You can also specify that the messages be sent only if the device is located behind a Network Address Translation (NAT) server.
- Challenge methods: Allows you to specify which challenge methods MBG uses to authenticate remote SIP devices.
- Re-establish calls: If the RTP stream is lost, the system will attempt to re-establish the call by sending a re-invite message to the SIP peer that has stopped sending packets. If this attempt fails, the system drops the call and generates a “terminated” event. In previous releases, the call would continue with one-way audio.

The following Mitel products support SIP:

- Mitel MiNET/SIP dual-mode sets
- SIP phones
- SIP Softphones (Mitel Unified Communicator®, UC Express, iOS, Android, and so on.)
- Wi-Fi ® and IP-DECT SIP phones
- Gateways
- Analog Adaptors

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