

# CMG System Overview

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# Introduction

**CMG Web** is a collaboration and presence management suite, enabling business users to manage their day-to-day communication, and is the first package in the Mitel Collaboration Management (CMG) family. To improve readability, Mitel Collaboration Management (CMG) - CMG Web has been shortened to CMG throughout this document and in all related user documentation.

This document gives an overview of CMG. CMG is installed using Mitel Installer, from a wizard or the classic package browser. There is also an MSI installer for the InAttend client as of CMG 8.5 SP2.

The following documents are available for the installation:

- CMG Installation Preparation Guide [4].
- CMG Quick Installation Guide [5] - describes how to do a single server installation of CMG, using a wizard.
- CMG Installation Guide [6] - describes how to install CMG from the classic package browser, in order to install the components one by one.
- Mitel Installer Overview [1] - includes information about the Mitel Installer tool.

The following documents are available for configuration information:

- CMG configuration Guide [7]
- Calendar Connection Configuration Guide [8]
- BluStar Server Installation and Configuration Guide [9] - optional

For information about the system and processes, refer to the following document:

- CMG Server System Process Description [2]
- CMG Acronyms and Abbreviations [3]

The user documentation for CMG is published on Mitel web page (Knowledge Base) and also bundled with the software package.

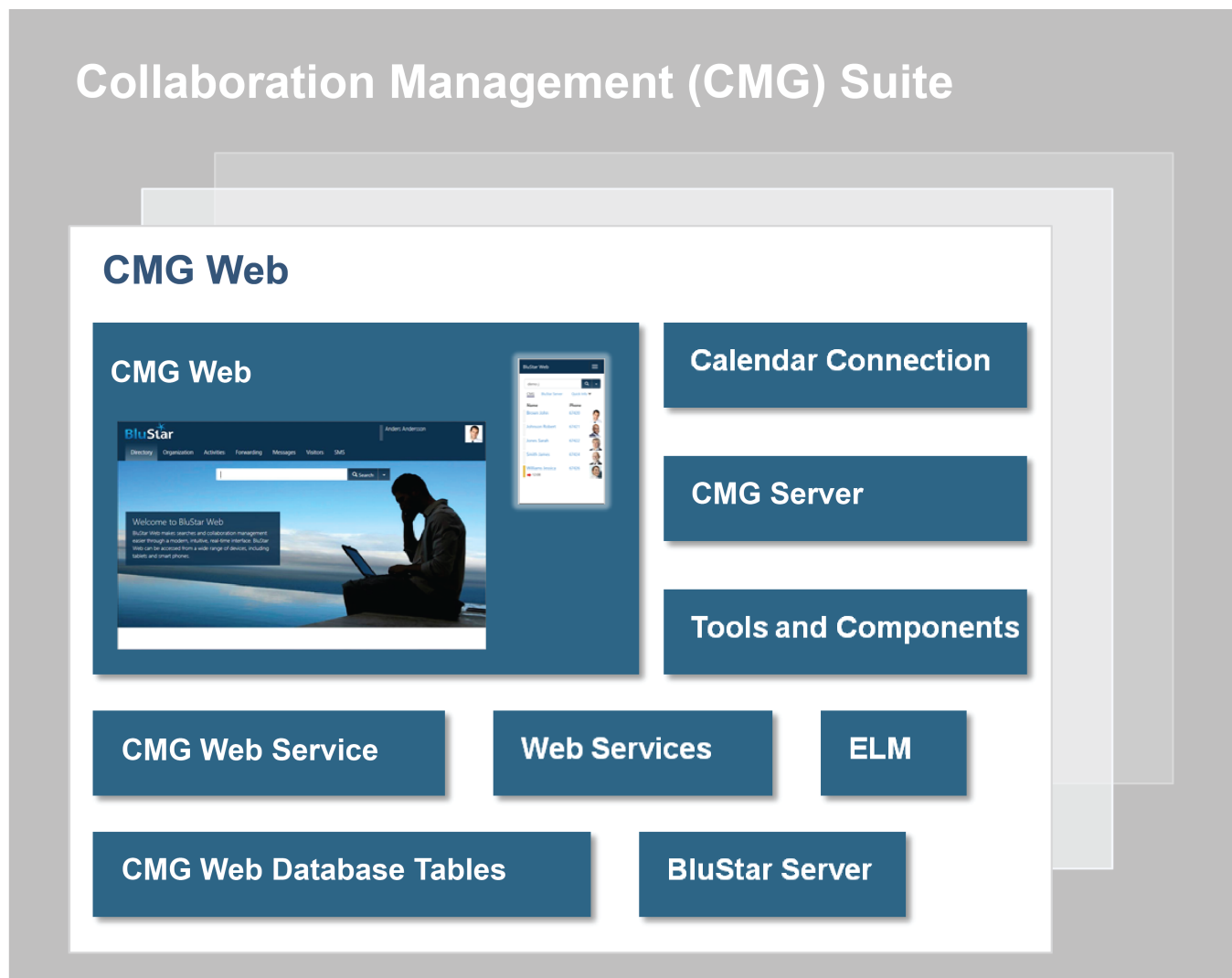
# CMG Overview

CMG is the first package in the Mitel Collaboration Management (CMG) suite.

CMG includes the CMG Web component, enabling business users to manage day-to-day communication. With CMG Web, users can do “smart-search” directory services, use click-to-dial, set activity timeline and manage call-routing preferences based on the calendar/activities. The integration with BluStar Server enables users to see, in real-time, their colleagues’ rich presence information, including CMG Web user presence status, calendar activity and call manager line state from all available sources provided by the BluStar Server.

CMG Web offers a web-based user interface available on any device. As this web interface is developed using responsive web technology, the web pages will automatically adjust content presentation to fit any screen size.

The following picture gives an overview of the included components, further described in the section 2.1.



## CMG Components

The following are the main components that can be installed from the CMG Package:

- **CMG Web** - offers a way to interact with customers and colleagues and to route incoming calls during a meeting or a business trip. See section Error! Reference source not found. for more information about CMG Web.
- **CMG Web service** - a Windows service implementing all functionality needed by the CMG Web site.
- **CMG Web database Tables** - the CMG Web specific tables in the CMG database.
- **Calendar Connection** - used to synchronize user calendars with their activities. The synchronization is a one-way synchronization from a groupware system into the CMG database. See section 2.3 for more information about Calendar Connection.
- **CMG Server** - includes the CMG database, a directory with telephony-related employee information and availability contact information used for call handling.
- **Tools and Components:**
  - **Configuration Manager (CMG CM)** - used by system administrators to configure and manage the system.
  - **Directory Manager (CMG DM)** - a suite of functionality for management of user information in the organization.
  - **Office Web Components** - required by CMG Web and Calendar Connection.
- **Web Services:**
  - **AnA Web Service** - used to check that the user is authorized to use a certain service when logging in to CMG Server.
  - **User Information Service (CWI)** - used by the applications to retrieve information from the server.
  - **Activity Service (CWI)** - used by CMG Web for activity registration.
- **Enterprise License Manager (ELM)** - used by CMG to manage the licenses.

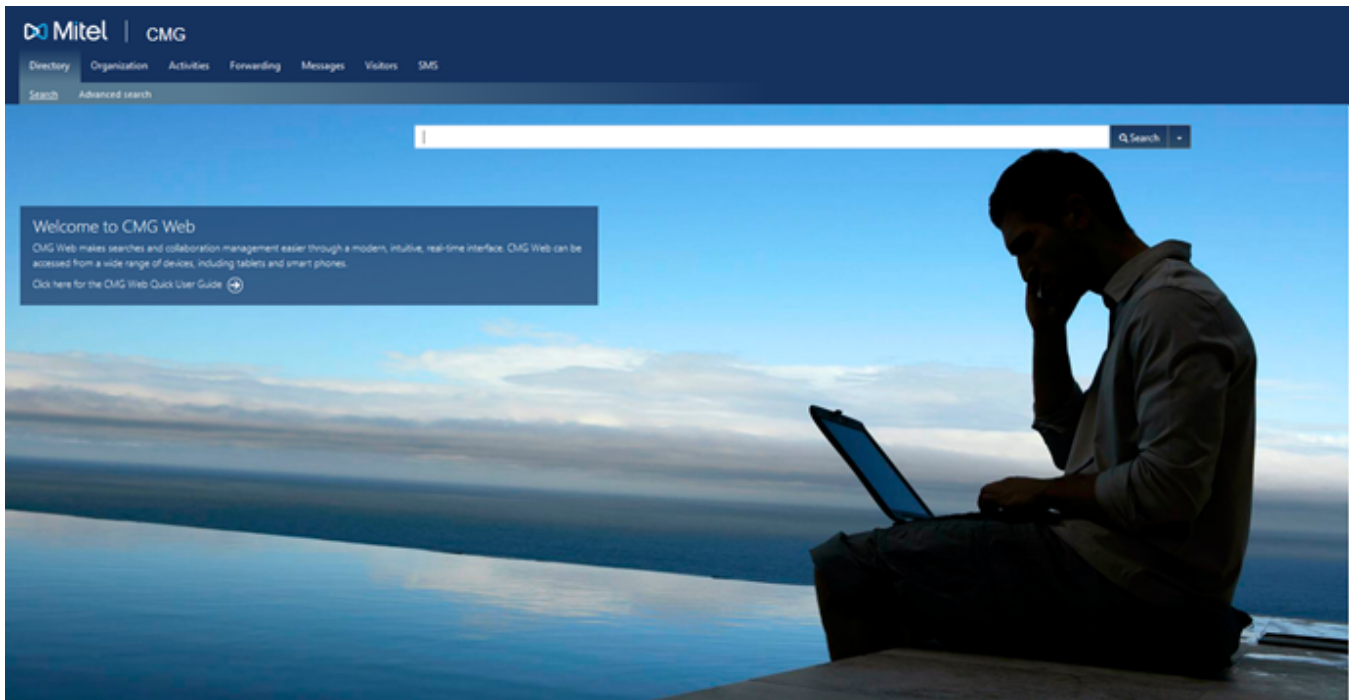
In addition to the main functionality, CMG can be extended with some optional functionality, including BluStar Server. This is described in chapter 3.

## CMG Web

CMG Web is a modern, web-based user interface offering business users:

- User interface harmonized with CMG Ecosystem
- Use on any device - PC, smart phones, tablets - real-time responsive web technology
- Progressive directory search with click-to-dial
- Real time presence info from different sources - including line state
- Activity timeline management - including diversion services
- Quick application - an easy to use tool for setting activities and forwarding phones
- Calendar integration

In CMG Web users can set calendar activities to define how to be reached and how to route their calls, depending on the situation. Profiles can be set-up so that CMG Web automatically reroutes a call to, for example, an attendant or voice mail when a user is in a meeting. If the user leaves the office, CMG Web can route the calls to a mobile or personal number.



As the CMG Web interface is developed using responsive web technology, the web pages will automatically adjust content presentation to fit any screen size. This means that the web user interface is accessible from any device (PCs, smart phones tablets) catering to different business user profiles.

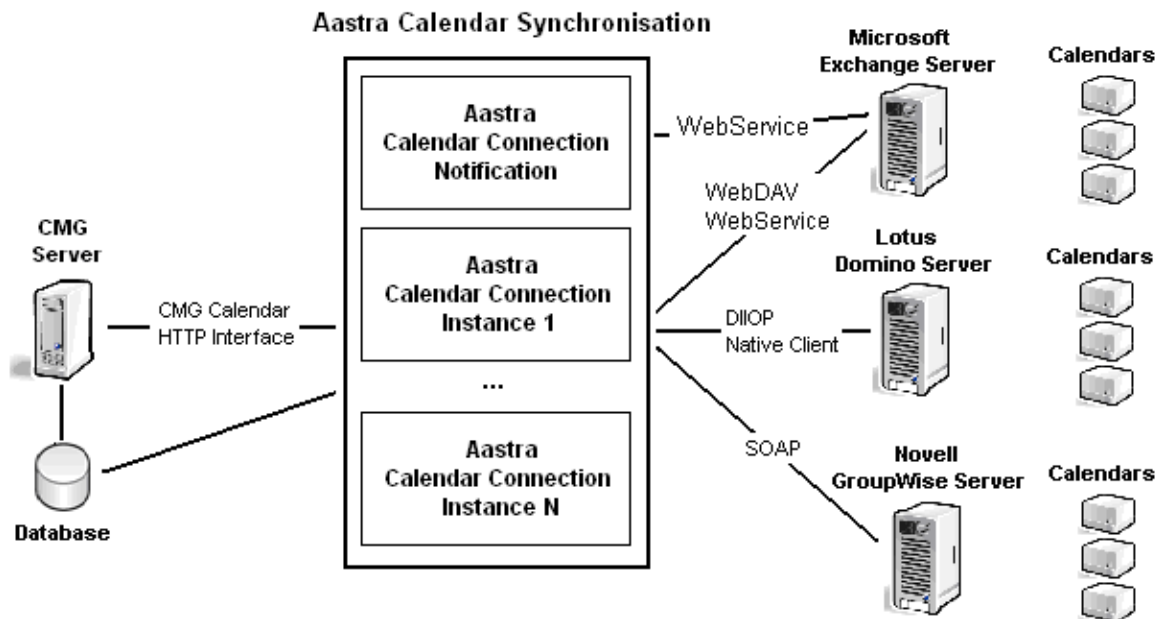
This offers significant benefit for users, as it avoids the need for different mobile "apps" per OS type, thus assuring a consistent user experience for any user, regardless of device and location.

## Calendar Connection

Calendar Connection is a standalone server application used to synchronize user calendars with their CMG activities. The synchronization is a one-way synchronization from a groupware system into the CMG database.

In Windows environments the Calendar Connection application will be installed as a Windows service named "Aastra Calendar Connection [INSTANCE]". In addition, an Calendar Connection Notification service handles calendar notifications from Microsoft Exchange Server or Exchange Online (Office 365).





Calendar Connection uses standard protocols to communicate with Microsoft Exchange Server, Office 365, Lotus Domino Server, Novell GroupWise Server and Google Calendar (Online) so that no third party applications are needed.

The protocols used by Calendar Connection for communication with the groupware systems are listed in the coming sections.

## Microsoft Exchange Server and Exchange Online (Office 365)

- **WebService:** This protocol should be used starting from Microsoft Exchange Server 2007, 2010, 2013 and 2016 as well as Exchange Online (Office 365 Suite).

## Lotus Domino Server

- **DIIOP:** This protocol can be used for smaller installations (~500 mailboxes).
- **Native Client (Lotus Notes Client):** It is recommended to use a local installed Lotus Notes Client for larger installations.

## Novel GroupWise Server

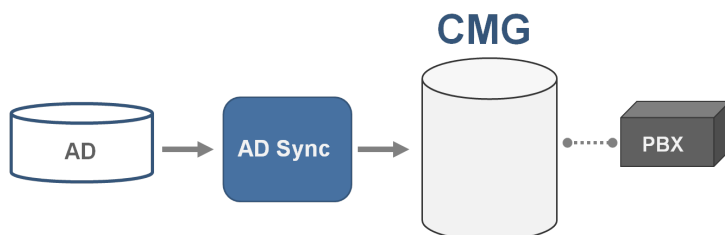
**SOAP:** This protocol is available starting from GroupWise Server 7 SP1.

## Google Calendar

**Google Client API:** This protocol is available with Google Calendar, which is an online service.

## CMG AD Sync

The CMG AD Sync enables synchronization of user data between Microsoft Active Directory (AD) and CMG Server.



The following functionality is initially supported:

- Synchronization from one AD source to the CMG database.
- Synchronization can only be made on an empty CMG database (meaning that no users should exist in the CMG database before the first synchronization).
- AD Synchronization has fixed mapping with predefined fields as below:

ACTIVE DIRECTORY (AD)	CMG
GivenName	First name
Sn	Last name
TelePhoneNumber	Phone number
Mail	Mail address

- The synchronization will set one and the same PBX ID in the CMG database (the PBX ID will be a value fixed during the configuration). The administrator can manually change the PBX ID belonging after the first synchronization.
- Only users with a value in the Telephone Number field in AD will be synchronized.
- Prefix selection/truncation of complete numbers are supported.
- Deletion of a user in AD will de-activate the user in CMG.
- Mapping needs to be configured to synchronize the other AD fields to CMG predefined fields (For further information, see CMG – CMG Web Configuration Guide, section 2.9.4)

### Limitations in AD Sync:

- Mapping cannot be configured for 2 AD fields to the same CMG field.
- CMGDM doesn't support duplicate Email id, but AD Synchronization with CMG can contain duplicate Email id for AD users.

## Web Services

The following web services are available for communication between the CMG applications:

- **AnA Web Service** - used to check that the user is authorized to use a certain service when logging in to the CMG server. This service is installed from Mitel Installer.

- **User Information Service (CWI)** - used by the applications to retrieve information from CMG Server. This service is installed from Mitel Installer.
- **Activity Service (CWI)** - used by CMG Web for activity registration. This service is installed from Mitel Installer.

## Windows Services

The following Windows services are available:

- **CMG Web service** - implements all functionality needed by the CMG Web site. This service is installed from Mitel Installer.
- **BluStar License Service** - used to check licenses in ELM. This service is part of the CMG Server installation.
- **Nice Server**- the main service in CMG Server. This service is part of the CMG Server installation.
- **Aastra Calendar Connection [INSTANCE]**- the main service for Calendar Connection. This service is part of the Calendar Connection installation.

## Administration Tools

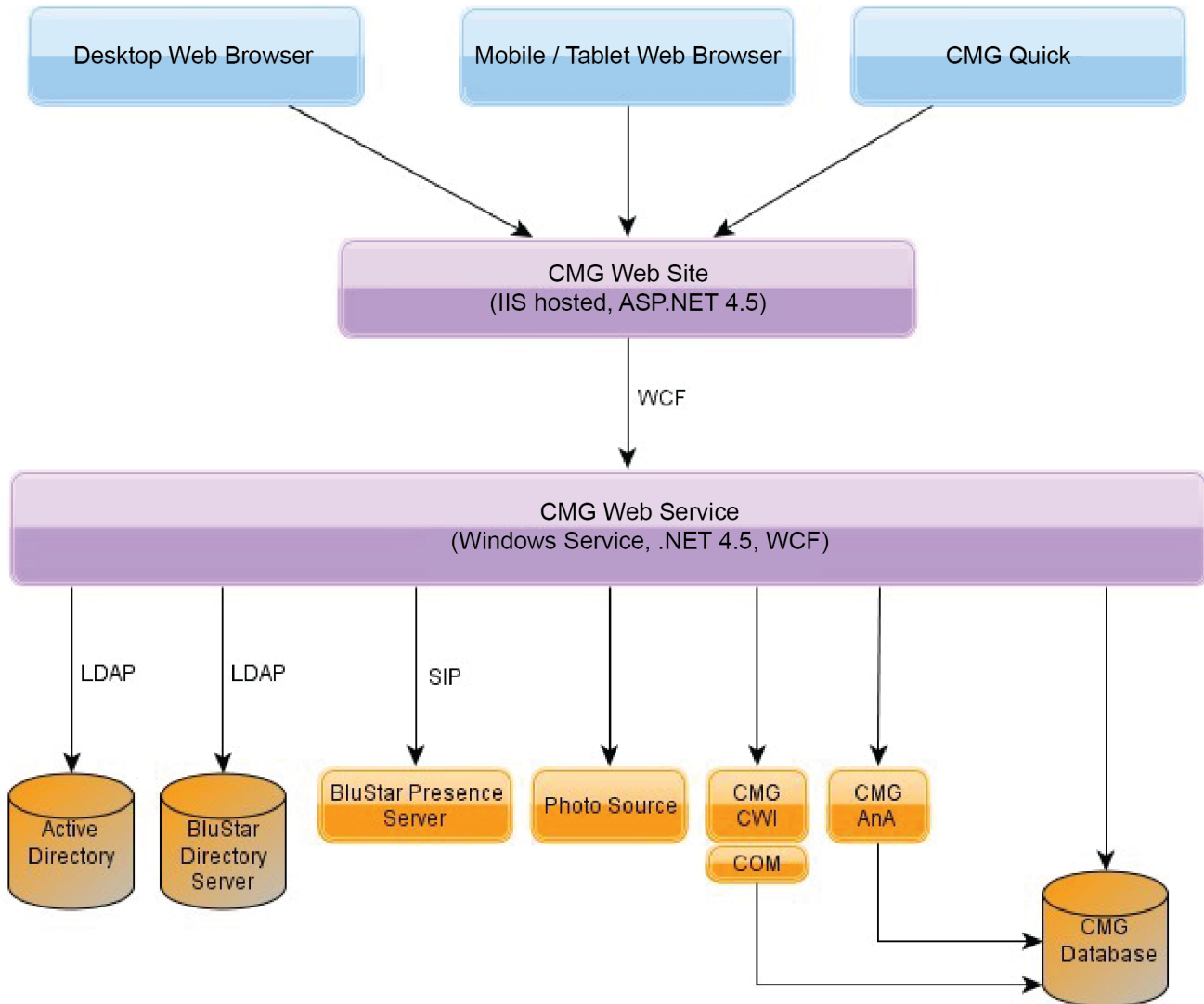
There are a set of tools to use for configuration of the CMG System and to manage office user information:

- **Configuration Manager** - a web based tool used by system administrators to configure and manage the CMG System. CMG CM is installed from Mitel Installer.
- **Directory Manager** - a web based tool including a suite of functionality for management of user information in the organization. CMG DM is installed from Mitel Installer.
- **Log Reader tool** - a tool for reading log files. Log Reader tool is installed from Mitel Installer.
- **Spman Tool**- a server processes manager. Spman is part of the CMG Server installation.
- **Import and Export Configuration tool** - part of the CMG Server installation.

## CMG Web Architecture Overview

CMG Web is a web site intended for business users and provides directory searches, organization views, SMS, activity and forwarding management.

CMG Web can be accessed from both desktop web browsers and mobile web browsers. CMG Web uses CMG Server, and optionally BluStar Server, as backend servers.



## CMG Server

CMG Server uses an SQL database containing availability information for office users. The availability information is used for dynamic routing of incoming phone calls. The CMG database includes:

- A directory with telephony-related employee information.
- Availability information, used for call handling.
- Information on how to contact each employee (for example cell phone, e-mail, SMS text message).

CMG Server is connected to a PBX to enable call routing control from the CMG -CMG Web system. The system can also be run as a stand-alone system without PBX connection. In this case, the system has no call handling functionality. The CMG System can also be connected to e-mail systems and other external systems, such as a mobile gateway.

## CMG Web service

CMG Web service implements all functionality needed by the CMG Web site. The CMG Web service is a Windows service that uses WCF to expose TCP and optionally HTTP bindings, where the TCP binding will be used by CMG Web site. Although the name suggests that this could be a Web Service hosted in IIS - that is not the case.

## CMG Web site

The CMG Web site is the dynamically generated responsive web pages that are hosted in IIS. These web pages can be accessed from any compatible web browser. CMG Web service provides all functionality needed by the web site.

The web browser can run on a desktop, tablet or on a mobile device. The web pages will use responsive web design to be usable across all screen sizes of the devices.

The CMG Web site uses ASP.NET 4.5 or later Web Forms to dynamically generate HTML web pages. JavaScript and Ajax will be used to enhance the functionality and get partial page updates.

## CMG Web Deployment

Multiple CMG Web sites can be deployed, all using the same CMG Web service.

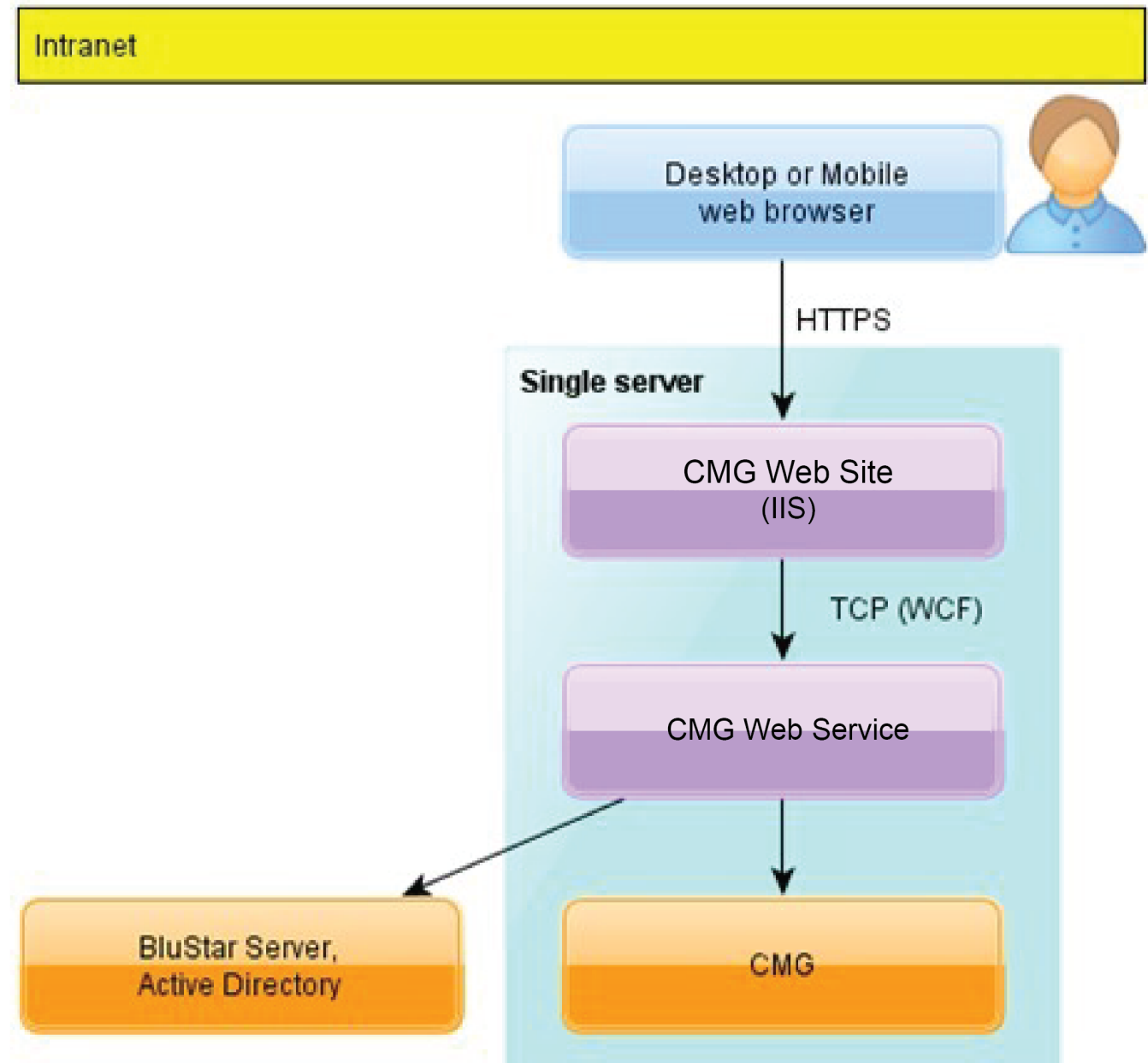
The CMG Web sites can have different authentication methods and the application settings can be configured individually for each site.

See CMG Installation Preparation Guide [4] for information about the ports that are used for the connections.

### Single Server Deployment

The illustration below shows the typically installation scenario where CMG, CMG Web service and CMG Web site are all installed on a single server on the Intranet.

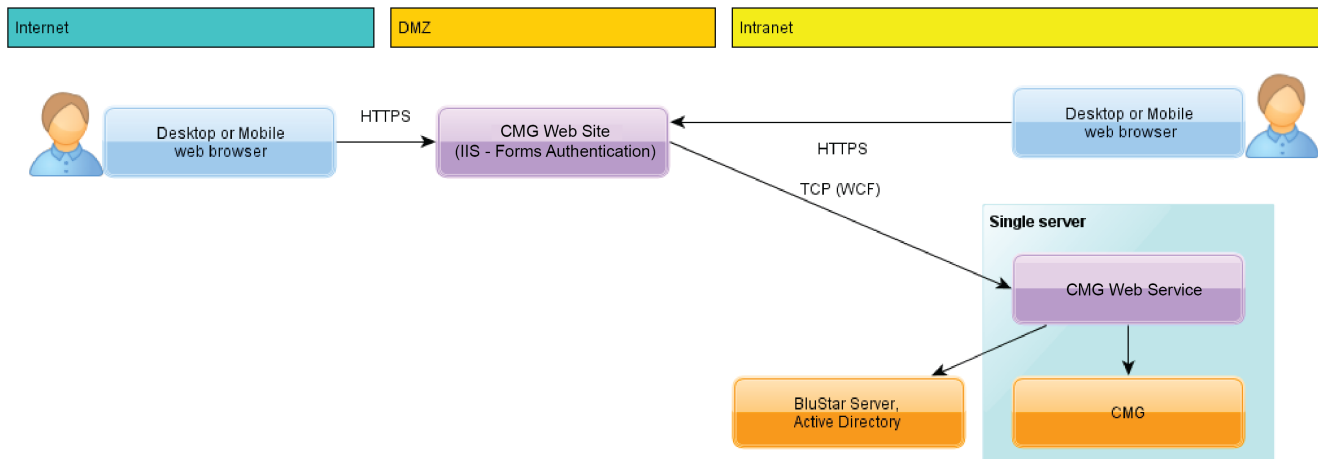
Users on the Intranet can use the web browser to access CMG Web. No configuration of CMG Web site is required in this scenario.



## DMZ Deployment

The CMG Web site can be deployed in a “demilitarized zone” (DMZ) to make it accessible from the Internet. The purpose of a DMZ is to add an additional layer of security to an organization's local area network (LAN), by acting as a gateway to the public Internet.

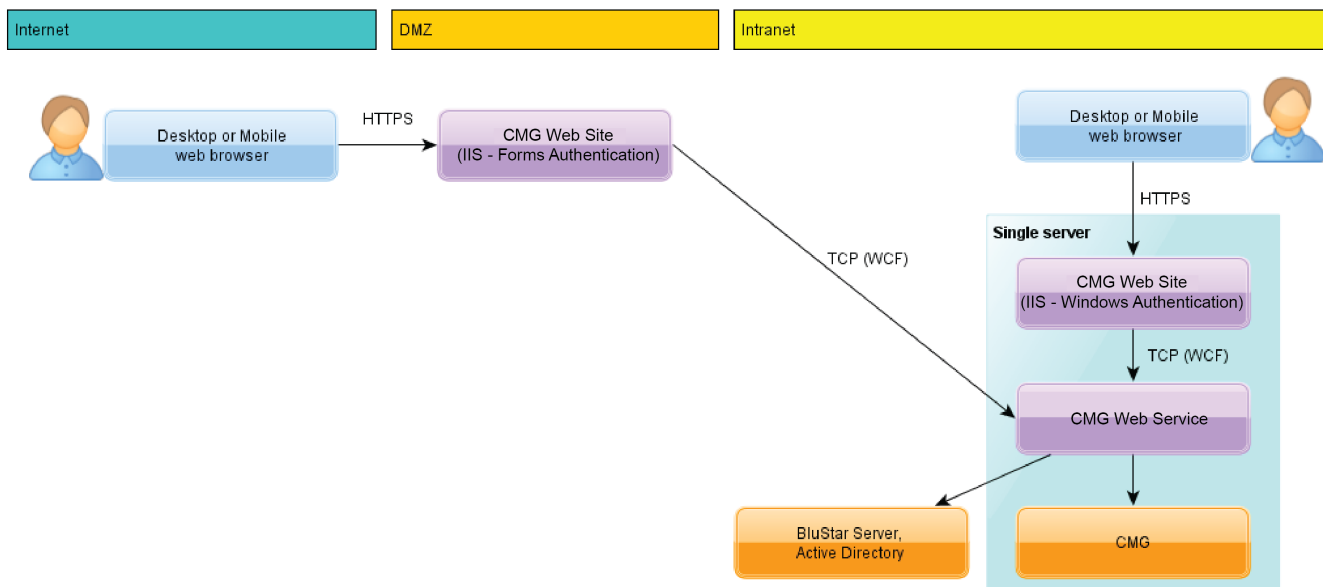
DMZ deployment requires that CMG Web site is configured with the address of CMG Web service.



## DMZ and Intranet Deployment

The previous illustration requires the users on the Intranet to connect to the web server on the DMZ, but this may not always be preferred. The next illustration describes the deployment of two CMG Web sites, one in the DMZ and one on the Intranet - using different authentication settings in IIS.

The two web sites can also be configured to show different tabs.



# Optional Components

CMG can be extended with the following functionality.

## Server Applications:

- BluStar Server (BSS) - providing CMG Web with CMG (client) presence information and aggregated presence information, including real-time line state, from other presence sources. It also provides possible consolidation of directory information via LDAP from Active Directory and other systems.
- CMG Server SQL Express Backup - if using SQL Express this application must be used for database maintenance (including backup).
- Mitel LDAP Server - A LDAP directory API making it possible for different clients, such as the BluStar for PC client, to access the CMG subscriber directory.
- For Mitel Communication Platforms (MiVoice MX-ONE):
  - CMG Corporate Directory for IP Phone - provides easy access to the CMG directory from Mitel IP phones.
  - CMG Personal Number Interface – required to use the Personal Number support for MiVoice MX-ONE or Mitel TSW, to forward the phone to an external number or to a "chain" of internal and external numbers.  
**NOTE:** The Personal Number function cannot be used when customer groups are used in MX-ONE Service Node.
- For Cisco Communications Platforms:
  - CMG IP Phone Services for Cisco - a XML based application that provides office users with a way to interact with colleagues in their office phone.
  - LSSCom Client Standalone - to be able to set activities on Cisco phones (only needed for ACS).  
**NOTE:** The LSSCom Client software is installed with CMG Server, if you choose the Cisco communication platform.

## Client Application:

- CMG Quick (client) - a client application that provides office users with an easy to use tool for setting activities and forwarding phones.

Some of the functionality is described in the below sections.

## Mitel LDAP Server

An LDAP directory API is provided with CMG. The Mitel LDAP server makes it possible to, for example, access the CMG Web subscriber directory from the BluStar for PC client.

The Mitel LDAP server is activated and deactivated in Configuration Manager.

## Features

Information in the following CMG database fields is available in the LDAP directory interface:

- First name, last name
- Phone, mobile phone



- Organization, Org1 and Org2
- E-mail address
- Misc field 1 – 30
- Customer group name

## Limitations

Not all CMG catalogue functions are supported in the CMG/ LDAP integration.

The LDAP interface in CMG is limited to present only basic CMG Web directory information.

Examples of not supported functions are:

- secret phone number
- phonetics
- organization nick names
- complete organizational mapping
- keywords and
- the entire set of message channels

## CMG Corporate Directory for IP Phone

Corporate Directory for IP phone for Mitel MiVoice gives the phone user easy access to the CMG directory when using an IP phone or SIP DECT phone.

### Overview

Corporate Directory for IP phone provides the following high level functionality:

- Search capability in the CMG based corporate directory. Wildcards are supported. Search can be done on any Mitel 6800 and 6900 SIP set as well as on selected legacy IP sets (74xx and 442x series):
  - First and/or last name
  - Phone number (reverse look-up)
  - Department search on any sublevel (not available in Mitel 6731i)
- View details
- Click-to-dial on Extension or Mobile Number
- Add directory entry to phone's internal directory (Contacts)

**NOTE:** Available on Mitel SIP sets as well as 7400ip and MiVoice 4225 phone.

# Technical Assistance

Mitel provides [www.mitel.com](http://www.mitel.com) as a starting point for technical assistance regarding all products, including CMG. From here, partners can obtain online documentation, FAQs, latest software updates and request further technical assistance.

# References

- [1] Mitel Installer Overview
- [2] CMG Server System Process Description
- [3] CMG Acronyms and Abbreviations
- [4] CMG Installation Preparation Guide
- [5] CMG Quick Installation Guide
- [6] CMG Installation Guide
- [7] CMG configuration Guide
- [8] Calendar Connection Configuration Guide
- [9] BluStar Server Installation and Configuration Guide

