Overview of
Avaya Distributed Office
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Chapter 1: Introduction to Avaya Distributed Office

Current business landscape

Today, a large majority of employees work in branch offices located throughout the world. A corporate enterprise can have thousands of branch locations. With the branch office landscape changing every day, communications becomes more complex between branch offices and company headquarters, between one remote office and another, and between all locations and customers. Managing the communication needs of these branch offices becomes critical.

Branch locations are often confronted with:

- Inconsistent end-user experience
- Disparate communication platforms across branch locations
- Limited flexibility
- Communication not leveraged across all sites

A major challenge for corporate enterprises is to maintain consistent communications features and quality in all locations, while keeping costs low.

What is Avaya Distributed Office?

Avaya Distributed Office is a highly distributed business communications solution for branch offices that delivers powerful communications applications, centralized management, rapid deployment, and a low total cost of ownership. With Distributed Office, more branch locations does not mean more complexity. Distributed Office can be used by corporate enterprises with branch networks of virtually any size.

Distributed Office benefits

- Easily scale as your branch network grows. SIP-based distributed architecture eliminates hardware and network complexity.
- Advanced branch applications from Avaya and our partners enhance productivity and customer responsiveness, making your business more competitive.
- Intuitive centralized management delivers complete branch network visibility and control from a single interface.
- Fast, flexible deployment templates limit technical expertise required at branch locations.
- Key system and PBX system telephone interface virtually eliminates branch staff training.
- Networked locations streamline communication and workflow with other branches and headquarters.
Distributed Office also offers a familiar Key system and IP telephony end-user experience for branch staff.

For a description of the networking capabilities of Distributed Office, see the Design Guide for Avaya Distributed Office, 03-602023.

Distributed Office configurations

The following graphics show how you can use Distributed Office to solve your branch location communication needs.

Stand-alone branch

Figure 1 shows a Distributed Office solution with stand-alone branch locations. In this configuration:

- Interbranch calls and calls from a branch location to the main location can be made over the PSTN only.
Figure 1: Stand-alone remote sites

Stand-alone branch with centralized management

Figure 2 shows another Distributed Office solution with stand-alone branch locations, this time with a centralized management component at the main business location. In this configuration:

- Inter-branch calls and calls from a branch location to the main location can be made over the PSTN.
- Avaya Integrated Management for Distributed Office, installed at the main business location, provides centralized management to the branch locations.
- Calls between the branch and main locations can be made over the private WAN.

**Figure 2: Stand-alone remote sites with centralized management**

Networked branch location solutions

*Figure 3* is a diagram of a Distributed Office solution with networked branch locations.

- Inter-branch calls and calls from a branch location to the main location can be made over the PSTN.
- Avaya Integrated Management for Distributed Office, installed at the main business location, provides centralized management to the branch locations.
- SIP calls between the branch and main locations can be made over the private WAN or over public Internet SIP trunks.
- Inter-branch SIP calls can be made through an Avaya SIP Enablement Services (SES) edge at the main location.

**Figure 3: Networked remote sites**

- **Main business location**
  - SIP Apps
  - SIP IVR
  - SES home servers
  - Communication Manager
  - Central Manager
  - SES edge

- **Optional components**
  - Traps sent to the Avaya Secure Enhanced Alarming receiver via customer VPN (requires SAC-Lite)

- **Branch location**
  - Distributed Office i40
    - Feature Server
    - SIP Enablement Services
    - Local Manager
    - CTI and TAPI applications
    - Automated Attendant
    - Voice mail
    - Secure Enhanced Alarming
    - SIP, H.323, and analog telephones, fax

  - Distributed Office i120
    - Feature Server
    - SIP Enablement Services
    - Local Manager
    - CTI and TAPI applications
    - Automated Attendant
    - Voice mail
    - Secure Enhanced Alarming
    - SIP, H.323, and analog telephones, fax

- **PSTN**
Chapter 2:  Platforms

Avaya Distributed Office is available in two platforms:

- **Avaya Distributed Office i40**
- **Avaya Distributed Office i120**

The Distributed Office platforms are available in numerous configurations, or “constructs.” See the i40 Constructs section and the i120 Constructs section in this chapter.

With either platform, Distributed Office provides the following capabilities:

- Optimize communication needs for multi-site businesses
- Manage entire communications network from one location
- Set up new locations quickly
- Minimize or eliminate staff workflow disruption with a key system interface
- Meet all communication needs with one easy to use solution
- Distributed Office supports a wide range of endpoints (see Telephones on page 27).

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**Avaya Distributed Office i40**

The Avaya Distributed Office i40 platform is designed for small to medium size distributed locations within an enterprise. Each i40 platform allows up to 40 administrable users.

**Note:**

The maximum number of users can vary based on the amount of system traffic.
For details, see the Design Guide for Avaya Distributed Office, 03-602023, or your Avaya representative.

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**Constructs**

The i40 comes in three configurations, or “constructs.” For a detailed description of the three i40 constructs, see the Design Guide for Avaya Distributed Office, 03-602023.
Platforms

i40 - Analog

Figure 4: Avaya Distributed Office i40 - Analog

i40 - BRI

Figure 5: Avaya Distributed Office i40 - BRI

i40 - DS1

Figure 6: Avaya Distributed Office i40 - DS1
Each i40 construct contains the following ports:

- One console cable port
- One interface USB port (located on the chassis where you connect the Disk on Key)
- One Contact Closure Adjunct (CCA) port
- One Ethernet WAN port (not used with Distributed Office)
- Eight Ethernet LAN Power over Ethernet (PoE) ports
- One USB port (for use with a USB modem for servicing the platform)
- One Ethernet services port
- Two analog line ports

In addition to these ports, the i40 contains additional ports based on its construct. Table 1 shows the three i40 constructs, and a description of what additional ports are available for each.

Table 1: i40 constructs

<table>
<thead>
<tr>
<th>Construct</th>
<th>Analog trunk ports</th>
<th>ISDN BRI trunk ports</th>
<th>T1/E1 interface port.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>i40 - Analog</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i40 - BRI</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>i40 - DS12</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

1. The T1/E1 interface port can be configured for ISDN PRI, Robbed Bit, or CAS signaling.

2. The i40 - DS1 construct also contains three pairs of test jacks that are used by service personnel only.
Avaya Distributed Office i120

The Avaya Distributed Office i120 platform is designed for medium to large size distributed locations within an enterprise. Each i120 platform allows up to 120 administrable users.

**Note:**
The maximum number of users can vary based on the amount of system traffic. For details, see the *Design Guide for Avaya Distributed Office*, 03-602023, or your Avaya representative.

Constructs

The i120 comes in ten constructs. For a detailed description of the ten i120 constructs, see the *Design Guide for Avaya Distributed Office*, 03-602023.

**Note:**
The i120-A construct shown in Figure 7 is for illustration purposes only. Each construct of the i120 platform is different.

Figure 7: Avaya Distributed Office i120

Each i120 construct contains the following ports:

- One analog trunk port
- Two analog line ports
- One Contact Closure Adjunct (CCA) port
- One Ethernet WAN port (not used with Distributed Office)
- One Ethernet LAN PoE port
● One console cable port
● One interface USB port (located on the chassis where you connect the Disk on Key)
● One USB port (for use with a USB modem for servicing the platform)
● One Ethernet services port

**Note:**
If you need additional ports, additional Media Modules are available for the i120 platform constructs. See your Avaya representative for details.

In addition to these ports, the i120 contains additional ports based on its construct. Table 2 shows the ten i120 constructs, and a description of what additional ports are available for each. The legend for the various construct names is as follows:

### Legend:
- A = Analog (RJ-11, 2-wire)
- B = BRI
- D = Digital (DS1, T1, E1, and PRI)
- H = High Capacity (24 analog ports using a single connector)
- P = Power over Ethernet (PoE)

### Table 2: i120 constructs

<table>
<thead>
<tr>
<th>Construct</th>
<th>Analog ports for lines or trunks</th>
<th>Analog line ports</th>
<th>10/100 Ethernet Base-T PoE ports</th>
<th>T1/E1 interface port</th>
<th>ISDN BRI trunk ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>i120 - A</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i120 - AH</td>
<td>8</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i120 - A2H</td>
<td>8</td>
<td>48</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i120 - AP</td>
<td>8</td>
<td></td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i120 - 2AP</td>
<td>16</td>
<td></td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i120 - D2H</td>
<td>8</td>
<td>48</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i120 - DP</td>
<td>8</td>
<td></td>
<td>40</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>i120 - BH</td>
<td>8</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 of 2
The T1/E1 interface port can be configured for ISDN PRI, Robbed Bit, or CAS signaling.

The i120 - DH and i120 - DP constructs also contain three pairs of test jacks and a connector that are used by service personnel only.
Chapter 3: Management of Avaya Distributed Office

Management

Whether you have a few branch locations or thousands of branch locations, managing your Distributed Office system is easy.

- To administer Distributed Office features for an individual branch, use the Avaya Distributed Office Local Manager. Avaya Distributed Office Local Manager is also used to administer individual branch offices in a networked environment.
- To administer Distributed Office features for a network of offices, use Avaya Integrated Management for Distributed Office.

Avaya Distributed Office Local Manager

Avaya Distributed Office Local Manager is a web–based tool that is designed for an individual branch, and for individual branches in a multi-location network. Local Manager provides powerful and seamless management of telephony functions, together with messaging, auto-attendant services, and voice mail.

Installation: At the remote location, a user or office worker simply plugs the USB drive into their PC and prints out the customized quick start guide. Distributed Office comes pre-loaded with basic configurations, enabling each system to be physically set-up in a short amount of time. To connect telephones, trunks, and network connections, the user either uses the preloaded profile or plugs a Disk on Key in the proper USB drive into the Distributed Office platform, then follows the instructions in the quick start guide.

Once set-up and administered, Distributed Office identifies and authenticates itself to the central Integrated Management tool. Integrated Management performs automatic validation of the deployed hardware, software, and firmware releases. If needed, Integrated Management enables the administrator to bring all software and firmware up-to-date.

The result is large-scale Distributed Office deployments that are performed faster, with less error, and with dramatically reduced cost.

After you login, Figure 8 shows the home page for Distributed Office Local Manager. For detailed administration information, see Avaya Distributed Office Local Manager User Reference, 14-601953.
Avaya Integrated Management for Distributed Office

Avaya Integrated Management for Distributed Office is a suite of tools to help you manage and administer all of your branch locations. Integrated Management is a comprehensive solution that helps the enterprise reduce the cost of every phase of a Distributed Office implementation, from pre-staging and provisioning, to deployment, administration, maintenance operations, and fault management.

Figure 9 shows the home page for Avaya Integrated Management for Distributed Office. From this page, you can select the web-based tool that you need.
Three of the web-based tools that play an essential role in Distributed Office are:

- [Distributed Office Central Manager](#)
- [Network Management Console](#)
- [Software Update Manager](#)

After selecting one of the web-based tools, you must log in to that tool. For detailed administration information, see the *Avaya Distributed Office Central Manager User Reference*, 14-602113.
Distributed Office Central Manager

Avaya Distributed Office Central Manager is a web–based tool that provides the central management functions that are necessary to administer a network of branch locations. The application serves as a focal point for configuration, update/upgrade, viewing, and monitoring the Distributed Office network.

Central Manager allows for centralized administration, configuration, updates and upgrades, viewing, and monitoring of multiple branches at-a-glance. With Central Manager, you can:

- Display all branches
- Group all branches into logical areas
- Manage all branches, groups of branches, and individual branches

Central Manager offers:

- Single system view of the entire deployment – topology, faults, and status display
- Bulk and template-based configuration management
  - Easily replicate branch configurations
  - Change once and propagate to many branches (for example, button changes and announcement updates)
  - Grouping of branches for updates
  - Routing tables, system speed dial lists, short codes, directory updates.
- Bulk distribution of imported voice-over files for Automated Attendant announcements to voice mail

Administration: After deployment, the Network Management Console tool displays a topology view (both physical and logical) of all Distributed Office systems. Through template-based administration, bulk administration updates for moves/adds/changes, auto attendant scripts, greetings, announcements, and voice mail can be performed quickly and easily. For example, new announcements that are recorded and updated to a specific regional template can be easily updated to all Distributed Office depots in that region.

Through the Network Management Console, it is also possible to launch Avaya Distributed Office Local Manager to drill down and apply changes to an individual system, end user account, and even the provisioning of individual station-related information (button mappings, speed dial lists, etc).
Network Management Console

Use Network Management Console to help manage various hardware components in your Avaya network from a system point of view.

**Ongoing Maintenance:** Network Management Console also helps system administrators to ensure continuous and predictable operation by simplifying core tasks that optimize the performance of their voice networks:

- Inventory Management
- Software & Firmware Release Management
- Backup/Restore

For inventory management, Integrated Management provides central tracking of all installed Distributed Office systems, telephones, and certain applications, along with their software and firmware release levels. Integrated Management dramatically reduces the time and errors associated with this process by analyzing current firmware and software releases, highlighting outdated versions, and scheduling updates that can be distributed to multiple devices at a time.

Integrated Management can also remotely distribute IP telephone firmware updates, reducing bandwidth usage over the IP WAN by allowing IP telephones to get their configuration updates from the HTTP server embedded in the local Distributed Office system. If needed, Integrated Management also supports backup/restore of configuration files. To ensure compatibility, it can trigger roll-backs to previous configuration files for devices that support this capability.

**Fault Management:** Integrated Management also supports advanced fault management capabilities that help to reduce operating costs. Management provides a real-time hierarchical view of the health and status of all Distributed Office systems, with drill-down capabilities to display information on configuration, fault, and health data of individual systems and devices. System-wide administration of parameters allow the manager to quickly define settings for data collection, logging, and alert levels, and a flexible report manager provides detailed information on performance, configuration, and exceptions/alarms that can be scheduled to run as needed. Integrated Management can push firmware/software updates, and if needed, remotely reboot Distributed Office systems and even individual telephones to reset operations. In many cases, this capability can eliminate the need to dispatch a local technician to fix most issues.

For information, see the *Avaya Integrated Management for Distributed Office Network Management Console*, 14-300189.

Software Update Manager

Use Software Update Manager to keep the software current on various components in your Avaya network.

For information, see the *Avaya Integrated Management for Distributed Office Software Update Manager User Guide*, 14-300168.
Management of Avaya Distributed Office
Chapter 4: Applications and capabilities

Applications

Distributed Office has a robust set of applications that are an integral part of each platform.

Automated Attendant

Distributed Office provides the Automated Attendant feature to route your incoming calls. This feature reduces the need for live attendants, and thus can help to control costs. An Automated Attendant serves as an entry point to your telephone system for callers. For example, callers might be prompted by an announcement to enter the extension of the person they want to reach.

You can administer an Automated Attendant to give incoming callers any of the following options:

- Enter a specific extension
- Listen to an informational announcement
- Transfer to a voice mailbox
- Navigate to a submenu that contains additional options

The Automated Attendant can also detect and route fax calls. You can administer the announcements a caller hears and the menu options from which a caller can choose. You can also configure and schedule separate menus for day and night, with separate caller prompts for each menu.

The Automated Attendant capability is provided by the voice mail service on Distributed Office. You can administer up to four Automated Attendants in Distributed Office.

For more information, see the Feature Description for Avaya Distributed Office, 03-602027.

Voice mail

With the voice mail feature, you enable telephone users to get and retrieve voice mail messages.
Applications and capabilities

The voice mail feature is built in to your telephone system and also provides four automated attendants. You can also retrieve your own messages and the messages of other users if certain telephones are set up for system-wide message retrieval.

In addition to call answering and message retrieval, the Distributed Office voice mail feature supports the following capabilities:

- Receive a fax and then forward the fax to another user by way of e-mail
- Navigate through the voice mail system by way of announcements and a multilingual caller interface
- Send broadcast voice mail messages
- Define mailing lists and send messages to a list
- Listen to a voice mail message and then press a key to send a response
- Forward the message to the mailbox of another user
- Set a message waiting indication LED to notify the mailbox owner of a new message.
- Use “outcalling” to specify up to five numbers that the system will call to notify the user of a new message waiting. The user can then log into the voice mail system, enter the password and listen to the message.
- Select a user from a directory listing.

**Note:**

All messages are encrypted in the mailbox to ensure system security and user privacy.

For more information, see the *Quick Reference Guide for Avaya Distributed Office voice mail*, 03-602108.

Avaya Distributed Office application enablement

Distributed Office application enablement provides computer telephony integration (CTI) for basic telephony at any Distributed Office location. This application supports a subset of Microsoft Telephony Application Programming Interface (TAPI) services and events.

Distributed Office application enablement enables capabilities such as click-to-dial, call logging, and basic call control (transfer, conference, hold/unhold) used in TAPI-compatible contact management applications. This CTI support does not require or depend on any other facilities outside the Distributed Office location.

Distributed Office application enablement supports configurations in which an application on a client computer controls and monitors the primary telephone of the user, or another single telephone that is associated with that computer.

With Distributed Office application enablement, TAPI-based personal desktop business applications are CTI-enabled, allowing an employee’s telephone and PC to work together.
Avaya SIP Enablement Services

In Distributed Office, SIP Enablement Services functions in two distinct ways.

In a core routing role, SES performs routing functions for messaging and communications between the Distributed Office branch locations, with enterprise private networking enabled, and between those branches and the main or headquarters location.

For any Distributed Office network solution, this role maintains and extends support for the SIP-enabled applications across the enterprise, like inter-office Instant Messaging (IM) and presence tracking.

The Distributed Office platform at each branch location serves as a:

- Local call-processing server, essentially becoming a telephony-feature server, accessible from any SIP-enabled endpoint
- Local SIP server, handling user registration for that branch location and intra-office instant-messaging and presence-tracking duties
- Voice mail adjunct, so that efficient local voice mailbox capabilities for the branch Distributed Office users are built in to the platform.

In a server role, SES performs the usual SIP proxy and redirection functions that are associated with SIP applications, such as IM and presence. Users can employ Avaya IP Softphone, R6 or later releases, as IM clients. The support for advanced SIP telephony in SES extends value-added features such as bridging, conferencing, unique ringing, and VIP calling to SIP-enabled endpoints.

Capabilities

As a multi-function solution for the branch office, Distributed Office has the following additional networking capabilities.

- **DHCP** – Distributed Office acts as a Dynamic Host Configuration Protocol (DHCP) server to dynamically assign IP addresses from a pool of addresses.
- **SNMP** – Distributed Office acts as a Simple Network Management Protocol (SNMP) server. SNMP is an industry-standard protocol that governs network management. SNMP also monitors network devices and their functions.
- **SMTP** – Distributed Office uses Simple Mail Transport Protocol (SMTP) for sending faxes to a mail server over an IP connection, and then sending the fax to a user in an e-mail message.
- **HTTP** – Distributed Office acts as a Hyper Text Transfer Protocol (HTTP) server to provide configuration/image files to newer IP telephones that do not use TFTP.
Applications and capabilities

- QoS – Distributed Office provides the ability to set certain Quality of Service (QoS) parameters, such as Call Control PHB Value, Audio PHB Value, Call Control 802.1p Priority, and Audio 802.1p Priority.

- RTCP – Distributed Office’s Voice over IP (VoIP) Monitoring Manager collects Real Time Control Protocol (RTCP) statistics. Branch offices can send their RTCP statistics to the Central office using Distributed Office Central Manager.

- RADIUS – Distributed Office acts as a Remote Authentication Dial-In User Service (RADIUS) server. RADIUS acts as an authentication service backup for the central server for local 802.1X-protected networks, either wired or WiFi.

- Phone message support – Distributed Office supports Unicode for displaying telephone message files.

Features

Distributed Office has a rich set of telephony features. For an explanation of each feature, see the Feature Description for Avaya Distributed Office, 03-602027.
Chapter 5: Telephones

Avaya Distributed Office supports many Avaya and third party telephones.

Avaya one-X Deskphones

Avaya one-X™ Deskphones are a portfolio of communications solutions across a variety of devices and interfaces. With an intuitive context-sensitive display, Avaya one-X Deskphone IP telephones are designed specifically for users who want high fidelity audio.

Avaya one-X Deskphone Value Edition

The Avaya one-X Deskphone Value Edition is a family of cost effective IP telephones that deliver familiar features at an attractive price for the customer with basic communications needs.

Avaya one-X Deskphone Value Edition telephones combines traditional telephone features, such as LED lights and fixed feature buttons (for example, conference, transfer, and hold), with the latest user features, such as softkeys, a navigation wheel, and a context sensitive user interface in select models.

Distributed Office supports the following Avaya one-X Deskphone Value Edition 1600-Series IP telephones:

Figure 10: Avaya 1603 IP telephone
Telephones

**Figure 11: Avaya 1608 IP telephone**

![Avaya 1608 IP telephone](image)

**Figure 12: Avaya 1616 IP telephone (with optional Avaya BM32 32-button module)**

![Avaya 1616 IP telephone with BM32 module](image)

**Paper labels**

You can download and print paper labels for the buttons on your Avaya 1600-series telephones. For instructions how to print button labels, see the *Avaya one-X™ Deskphone Value Edition 1600 Series IP Telephones Administrator Guide*, 16-601443, or the *Avaya one-X™ Deskphone Value Edition 1600 Series IP Telephones Installation Guide*, 16-601438.
Avaya one-X Deskphone SIP

Avaya one-X Deskphone SIP telephones deliver standards-based SIP telephony and advanced telephone capabilities to further enhance end user productivity.

Avaya one-X Deskphone SIP telephones have high fidelity audio, an intuitive context sensitive display, and a modular, flexible architecture. The Avaya 9620 and 9630 telephones deliver SIP telephony along with powerful application capabilities.

Distributed Office supports the following Avaya one-X Deskphone SIP 9600 -Series SIP telephones:

**Figure 13: Avaya 9620 SIP telephone**

![Avaya 9620 SIP telephone](image)

**Figure 14: Avaya 9630 SIP telephone**

![Avaya 9630 SIP telephone](image)
Avaya 4600-series IP telephones

The Avaya 4600-Series IP telephones deliver an extensive set of software features, high audio quality, and attractive streamlined design. Avaya 4600-Series IP telephones come with both fixed and flexible feature buttons, easy-to-read graphics – including back lighting displays on some models – and several wall mount and desk mount options.

With sophisticated security capabilities, such as media encryption and protection from denial of service attacks, Avaya 4600-Series IP telephones are reliable for use in IP networks.

Distributed Office supports the following Avaya 4600-Series IP telephones:

Figure 15: Avaya 4610SW IP telephone

Figure 16: Avaya 4621SW IP telephone

Distributed Office also supports:

- Avaya EU24BL 24-button expansion unit for the 4621SW IP telephone
- Avaya IP Softphone H.323
Avaya analog telephones

Avaya analog telephones support a range of features to meet the different user needs and location requirements. A TTY (text terminal) telephone is also available for the hearing or speech impaired.

The 6200-Series telephones take up a minimum amount of space on your desk. You can also mount these telephones on the wall for added flexibility and convenience.

Distributed Office supports the following Avaya analog telephones:

**Figure 17: Avaya 6211 analog telephone**

![Figure 17: Avaya 6211 analog telephone](image)

**Figure 18: Avaya 6219 analog telephone**

![Figure 18: Avaya 6219 analog telephone](image)

**Figure 19: Avaya 6221 analog telephone**

![Figure 19: Avaya 6221 analog telephone](image)

In addition, Distributed Office supports many 900MHz analog telephones using an analog port on the Distributed Office platform. For more information, see your Avaya representative.
Avaya wireless telephones

The Avaya IP Digital Enhanced Cordless Telecommunications (DECT) telephones deliver secure, scalable and reliable high-quality wireless voice communications to organizations ranging from small business to large enterprises. DECT is ideal for secure, high-quality, high-density voice communications.

Distributed Office supports the following Avaya DECT wireless telephones.

Figure 20: Avaya WT3701 DECT telephone

Figure 21: Avaya WT3711 DECT telephone

Third-party telephones

Distributed Office supports some telephones made by other vendors. Check first with your Avaya representative to make sure that your third-party telephones can work with Distributed Office.
Chapter 6: Deployment

Avaya Distributed Office is designed to deploy quickly. Installation does not require extensive expertise. Rapid installation is one of the key features of Distributed Office.

IP network design and software version compatibility issues are first worked out by highly skilled personnel in a smaller scale deployment scenario, such as in a staging laboratory or in a few pilot branch offices. Once a design had stabilized, it can then be replicated across multiple branches spanning wide geographical areas.

As the complexities are resolved, further deployments no longer need highly skilled personnel. This reduction in complexity is an essential factor in reducing the deployment cost and increasing the deployment rate. On-site installers with lower expertise levels cost less and are more readily available across geographies.

An important observation is that each specific branch office usually requires some unique configuration parameters. Examples of some unique parameters are a prefix that identifies the branch in inter-branch calls, or a unique IP address.

Ease of Deployment

- Wide range of Multiple network-side telecom port configurations – PRI, BRI, T-1/E-1 and analog – mean you can use existing Public Switched Telephone Network (PSTN) connections.
- Multiple end-user side telecom port configurations – PRI, BRI, E-1/T-1 and analog – provide support for existing non-IP equipment such as faxes.
- Power over Ethernet (PoE) ports, according to construct, allow you to connect IP telephones and powered devices without additional power supplies and cables.
- Streamlines the ordering process
  - Order a Distributed Office solution either as a stocked, off-the-shelf order with default factory settings, or
  - Order a Distributed Office solution that is pre-configured to greatly reduce the set-up process
- Reduces installation costs
  - Deliver pre-configured systems
  - Reduce on-site effort and skill-level needed
Deployment

- Allows complex configurations
  - Provide a library of profiles for helping customers pick a pre-configured solution that fits their needs

Profiles

A Profile is a collection of hardware and software elements that define a standardized deployment of Distributed Office. The Profile is also accompanied by a set of printed material, relevant to the installation and usage of the specific branch system. A profile speeds up the installation process because most of the settings are already filled out.

Avaya provides a library of pre-created profiles that fit the business needs of various industries and requirements. Based on an analysis of a customer’s needs and the platform construct that the customer orders, one or more profiles are made available from the library of pre-created profiles. The customer selects one of the available profiles to configure their system. If no available profile closely matches the customer’s particular requirements, the customer can ask Avaya to create a new profile.

By using the Avaya-provided profiles, a customer can reduce the design effort that is involved in creating a standardized design that can be replicated.
# Appendix A: Capacities and platform specifications

## Capacities

The following table lists some of the capacities that are common to all constructs of Avaya Distributed Office:

**Table 3: Avaya Distributed Office capacities**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avaya Integrated Management for Distributed Office</td>
<td></td>
</tr>
<tr>
<td>Maximum number of branch locations supported</td>
<td>1000</td>
</tr>
<tr>
<td>Abbreviated Dial Groups</td>
<td></td>
</tr>
<tr>
<td>Maximum number of Abbreviated Dial Group lists</td>
<td>100</td>
</tr>
<tr>
<td>Maximum number of Abbreviated Dial Group entries</td>
<td>2000</td>
</tr>
<tr>
<td>Maximum number of Abbreviated Dial Group entries per list</td>
<td>100</td>
</tr>
<tr>
<td>Abbreviated Dialing Buttons</td>
<td></td>
</tr>
<tr>
<td>Advanced Abbreviated Dial length (Enhanced System List)</td>
<td>3</td>
</tr>
<tr>
<td>Maximum number of entries (Group Lists)</td>
<td>100</td>
</tr>
<tr>
<td>Maximum number of entries (System Lists)</td>
<td>100</td>
</tr>
<tr>
<td>Conference</td>
<td></td>
</tr>
<tr>
<td>Maximum number of parties in a conference</td>
<td>6</td>
</tr>
<tr>
<td>Dial Plan</td>
<td></td>
</tr>
<tr>
<td>Extension length</td>
<td>1-7</td>
</tr>
<tr>
<td>Feature Access Codes (FAC)</td>
<td>40</td>
</tr>
<tr>
<td>Maximum number of digits in a Feature Access Code (FAC)</td>
<td>4</td>
</tr>
</tbody>
</table>
## Capacities and platform specifications

Table 3: Avaya Distributed Office capacities (continued)

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hunt Groups</strong></td>
<td></td>
</tr>
<tr>
<td>Maximum number of Hunt Groups</td>
<td>19</td>
</tr>
<tr>
<td>Maximum number of Hunt Group members</td>
<td>150</td>
</tr>
<tr>
<td>Maximum number of Announcements per Hunt Group</td>
<td>1</td>
</tr>
<tr>
<td><strong>Intercom Groups</strong></td>
<td></td>
</tr>
<tr>
<td>Maximum number of Intercom Groups</td>
<td>10</td>
</tr>
<tr>
<td>Maximum number of extensions per Intercom Group</td>
<td>32</td>
</tr>
<tr>
<td><strong>Paging Groups using speaker telephones</strong></td>
<td></td>
</tr>
<tr>
<td>Maximum number of Paging Groups</td>
<td>32</td>
</tr>
<tr>
<td>Maximum number of members per Paging Group</td>
<td>32</td>
</tr>
<tr>
<td><strong>Outside Line Appearances</strong></td>
<td></td>
</tr>
<tr>
<td>Maximum number of Outside Line Groups</td>
<td>40</td>
</tr>
<tr>
<td>Maximum number of stations with Outside Line Appearance</td>
<td>40</td>
</tr>
<tr>
<td><strong>SIP Enablement Services (SES)</strong></td>
<td></td>
</tr>
<tr>
<td>Maximum number of SIP endpoints</td>
<td>40</td>
</tr>
<tr>
<td>Maximum number of simultaneous connections to the PPM</td>
<td>5</td>
</tr>
</tbody>
</table>

For a complete list of capacities, see the Avaya Distributed Office R1.1 Capacities table.
Avaya Distributed Office i40

The table of technical specifications provides detailed information on the physical dimensions and tolerances of the i40:

Table 4: Avaya Distributed Office i40 specifications

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>2U (3.5 in., 88 mm)</td>
</tr>
<tr>
<td>Width</td>
<td>17.32 in. (440 mm). Fits in a 19 inch rack.</td>
</tr>
<tr>
<td>Depth</td>
<td>13.4 in. (340 mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>15.4 lb. (7 kg)</td>
</tr>
<tr>
<td>Ambient working temperature</td>
<td>32° to 104°F (0° to 40°C)</td>
</tr>
<tr>
<td>Operation altitude</td>
<td>up to 10,000 ft. (3,048 m)</td>
</tr>
<tr>
<td>Side Clearance</td>
<td>2 in. (5 cm)</td>
</tr>
<tr>
<td>Humidity</td>
<td>95% non-condensing relative humidity</td>
</tr>
<tr>
<td>Power rating</td>
<td>100-240 V~, 50-60 Hz, 2.2 A Max</td>
</tr>
</tbody>
</table>

i40 capacities

The following table lists some of the capacities that are specific to the i40 construct of Avaya Distributed Office:

Table 5: Avaya Distributed Office i40 capacities

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endpoints</td>
<td></td>
</tr>
<tr>
<td>Total capacity</td>
<td>40</td>
</tr>
<tr>
<td>Analog maximum</td>
<td>40</td>
</tr>
<tr>
<td>H.323 maximum</td>
<td>40</td>
</tr>
<tr>
<td>SIP maximum</td>
<td>40</td>
</tr>
</tbody>
</table>
Capacities and platform specifications

Table 5: Avaya Distributed Office i40 capacities (continued)

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum number of station users</td>
<td>40</td>
</tr>
</tbody>
</table>

**Voice Mail**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Voice Mail boxes</td>
<td>12</td>
</tr>
<tr>
<td>Maximum number of concurrent calls to Voice Mail</td>
<td>4</td>
</tr>
<tr>
<td>Minutes of storage per regular mailbox</td>
<td>20</td>
</tr>
<tr>
<td>Storage size per regular mailbox</td>
<td>10MB</td>
</tr>
<tr>
<td>Minutes of storage per extended mailbox</td>
<td>40</td>
</tr>
<tr>
<td>Storage size per extended mailbox</td>
<td>20MB</td>
</tr>
<tr>
<td>Minutes of storage per informational mailbox</td>
<td>0</td>
</tr>
</tbody>
</table>

For a complete list of capacities, see the Avaya Distributed Office R1.1 Capacities table.

---

**i40 power cord specifications**

**For North America:** The cord set must be UL Listed/CSA Certified, 16 AWG, 3-conductor (3rd wire ground), type SJT. One end is to be terminated to an IEC 60320, sheet C13 type connector rated 10A, 250V. The other end is to be terminated to either a NEMA 5-15P attachment plug for nominal 125V applications or a NEMA 6-15P attachment plug for nominal 250V applications.

**For Outside North America:** The cord must be VDE Certified or Harmonized (HAR), rated 250V, 3-conductor (3rd wire ground), 1.0 mm2 minimum conductor size. The cord is to be terminated at one end to a VDE Certified/CE Marked IEC 60320, sheet C13 type connector rated 10A, 250V and the other end to a 3-conductor grounding type attachment plug rated at a minimum of 10A, 250V and a configuration specific for the region/country in which it is used. The attachment plug must bear the safety agency certifications marks for the region/country of installation.
The table of technical specifications provides detailed information on the physical dimensions and tolerances of the i120:

### Table 6: Avaya i120 Media Gateway specifications

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>3U (5.25 in., 133.3 mm)</td>
</tr>
<tr>
<td>Width</td>
<td>17.32 in. (440 mm). Fits in a 19 inch rack.</td>
</tr>
<tr>
<td>Depth</td>
<td>15.75 in. (400 mm)</td>
</tr>
<tr>
<td>Weight of empty chassis</td>
<td>20.5 lb. (9.3 kg)</td>
</tr>
<tr>
<td>Ambient working temperature</td>
<td>32° to 104°F (0° to 40°C)</td>
</tr>
<tr>
<td>Operation altitude</td>
<td>up to 10,000 ft. (3,048 m)</td>
</tr>
<tr>
<td>Side Clearance</td>
<td>2 in. (5 cm)</td>
</tr>
<tr>
<td>Humidity</td>
<td>95% non-condensing relative humidity</td>
</tr>
<tr>
<td>Power rating</td>
<td>100-240 V~. 50-60 Hz, 10 A Max</td>
</tr>
</tbody>
</table>

### i120 capacities

The following table lists some of the capacities that are specific to the i120 construct of Avaya Distributed Office:

### Table 7: Avaya Distributed Office i120 capacities

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Endpoints</strong></td>
<td></td>
</tr>
<tr>
<td>Total capacity</td>
<td>120</td>
</tr>
<tr>
<td>Analog maximum</td>
<td>50</td>
</tr>
<tr>
<td>H.323 maximum</td>
<td>120</td>
</tr>
<tr>
<td>SIP maximum</td>
<td>40</td>
</tr>
</tbody>
</table>
Capacities and platform specifications

Table 7: Avaya Distributed Office i120 capacities  (continued)

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum number of station users</td>
<td>120</td>
</tr>
</tbody>
</table>

**Voice Mail**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Voice Mail boxes</td>
<td>40</td>
</tr>
<tr>
<td>Maximum number of concurrent calls to Voice Mail</td>
<td>6</td>
</tr>
<tr>
<td>Minutes of storage per regular mailbox</td>
<td>20</td>
</tr>
<tr>
<td>Storage size per regular mailbox</td>
<td>10MB</td>
</tr>
<tr>
<td>Minutes of storage per extended mailbox</td>
<td>40</td>
</tr>
<tr>
<td>Storage size per extended mailbox</td>
<td>20MB</td>
</tr>
<tr>
<td>Minutes of storage per informational mailbox</td>
<td>0</td>
</tr>
</tbody>
</table>

For a complete list of capacities, see the Avaya Distributed Office R1.1 Capacities table.

**i120 power cord specifications**

**For North America:** The cord set must be UL Listed/CSA Certified, 16 AWG, 3-conductor (3rd wire ground), type SJT. One end is to be terminated to an IEC 60320, sheet C13 type connector rated 10A, 250V. The other end is to be terminated to either a NEMA 5-15P attachment plug for nominal 125V applications or a NEMA 6-15P attachment plug for nominal 250V applications.

**For Outside North America:** The cord must be VDE Certified or Harmonized (HAR), rated 250V, 3-conductor (3rd wire ground), 1.0 mm2 minimum conductor size. The cord is to be terminated at one end to a VDE Certified/CE Marked IEC 60320, sheet C13 type connector rated 10A, 250V and the other end to a 3-conductor grounding type attachment plug rated at a minimum of 10A, 250V and a configuration specific for the region/country in which it is used. The attachment plug must bear the safety agency certifications mark(s) for the region/ country of installation.
Appendix B: Modules

Avaya AM110 Application Module

The Avaya AM110 Application Module is the heart of the Distributed Office system. The AM110 Application Module provides the telephony features, voice mail, automated attendant, SES, and TAPI. The AM110 Application Module also contains a Freescale processor and replaceable Compact Flash and SO-DIMM memory.

The AM110 Application Module is included with both the i40 and i120 platforms. The Avaya AM110 Application Module can be inserted only in slot V1 of either the i40 or the i120.

Telephony media modules

The ten constructs of Distributed Office i120 contain one or more media modules. Table 8 shows the available media modules, and the slot or slots in which each module can be inserted.

Table 8: Supported media modules

<table>
<thead>
<tr>
<th>Module</th>
<th>Description</th>
<th>Permitted slots</th>
</tr>
</thead>
<tbody>
<tr>
<td>MM710</td>
<td>One T1/E1 ISDN PRI trunk port</td>
<td>V2, V3, V4, V5</td>
</tr>
<tr>
<td>MM711</td>
<td>Eight universal analog ports</td>
<td>V2, V3, V4, V5</td>
</tr>
<tr>
<td>MM716</td>
<td>Twenty-four analog line ports</td>
<td>V2, V3, V4, V5</td>
</tr>
</tbody>
</table>
Overview of Avaya Distributed Office

Table 8: Supported media modules  (continued)

<table>
<thead>
<tr>
<th>Module</th>
<th>Description</th>
<th>Permitted slots</th>
</tr>
</thead>
<tbody>
<tr>
<td>MM720</td>
<td>Eight ISDN BRI trunk ports</td>
<td>V2, V3, V4, V5</td>
</tr>
<tr>
<td>LM710</td>
<td>Media Module</td>
<td></td>
</tr>
<tr>
<td>MM316</td>
<td>Forty 10/100 Ethernet ports with Power over Ethernet (PoE), and one 10/100/1000 Ethernet copper uplink/access port</td>
<td>V6</td>
</tr>
</tbody>
</table>

MM710 Media Module

The MM710 T1/E1 media module terminates a T1 or E1 trunk. The MM710 has a built-in Channel Service Unit (CSU) so an external CSU is not necessary. The CSU is only used for the T1 circuit.

The MM710 features:
- ISDN PRI capability (23B + D or 30B + D)
- Trunk signaling to support US and International CO or tie trunks
- Echo cancellation in either direction

Figure 22: The MM710 media module

MM711 Media Module

The MM711 Media Module provides analog trunk and telephone features and functionality.

Figure 23: The MM711 media module

2 of 2
Configuring MM711 ports

The administrator can configure any of the eight ports of the MM711 as follows:

- Central office trunk, either loop start or ground start

  **Note:**
  
  In Distributed Office, support of digital ground-start CO outside line groups is provided, and analog loop-start and ground-start CO outside line groups are also supported.

- Analog Direct Inward Dialing (DID) trunks, either wink start or immediate start
- 2-wire analog Outgoing CAMA E911 trunks for connectivity to the PSTN
- MF signaling is supported for CAMA ports
- Analog, tip/ring devices, such as single-line telephones with or without LED message waiting indication

**MM711 also supports**

- Up to eight simultaneously-ringing ports

  **Note:**
  
  The i120 achieves this number of ports by staggering the ringing and pauses between two sets of up to four ports.

- Type 1 and Type 2 Caller ID
- Ring voltage generation for a variety of international frequencies and cadences

---

**MM716 Media Module**

The MM716 Media Module provides 24 analog ports supporting telephones, modem, and fax. These ports can also be configured as DID trunks with either wink-start or immediate-start. The 24 ports are provided via a 25 pair RJ21X amphenol connector, which can be connected by an amphenol cable to a breakout box or punch down block.

**Figure 24: The MM716 media module front panel**
Configuring MM716 ports

The MM716 provides you with the capability to configure any of the 24 ports as:

- Analog tip/ring devices such as single-line telephones with or without LED message waiting indication
- A wink-start or an immediate-start DID trunk

MM716 also supports

- Three ringer loads, which is the ringer equivalency number for up to 2,000 feet (610 meters) for all 24 ports
- Up to 24 simultaneously-ringing ports
- Type 1 caller ID
- Ring voltage generation for a variety of international frequencies and cadences

MM720 Media Module

The MM720 BRI media module provides eight ports with RJ-45 jacks that can be administered as BRI trunk connections.

Figure 25: The MM720 media module

Note:
The MM720 BRI media module does not support combining both B-channels together to form a 128-kbps channel.

For BRI trunking, the MM720 BRI media module supports up to eight BRI interfaces to the central office at the ISDN TE reference point. Information is communicated in two ways:

- Over two 64-kbps channels, called B1 and B2, that can be circuit-switched simultaneously
- Over a 16-kbps channel, called the D-channel, that is used for signaling. The MM720 occupies one time slot for all eight D channels

The circuit-switched connections have an A- or Mu-law option for voice operation. The circuit-switched connections operate as 64-kbps clear channels when in the data mode.
LAN media modules

MM316 Media Module

The MM316 LAN media module provides:

- 40 Ethernet 10/100 Base-T Ethernet access ports with inline Power over Ethernet (PoE).
- One Gigabit Ethernet copper port for server connection or uplink to another switch or router.

The MM316 supports 48V DC inline power provided over standard category 5 UTP cables (up to 100m range) on each PoE port. Power consumption for the MM316 media module is 435W.

**MM316 features**

- Priority power budgeting with priorities that you can configure
- Automatic load detection on ports
- Automatic device discovery
- Enable/disable port powering option
- Port monitoring
- Automatic recovery from overload shutdown
- Automatic recovery from no-load shutdown

**Figure 26: The MM316 media module**
Modules
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