

AVAYA

Multi Device Access White Paper

Release 7.0

August 2015

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1. Overview

Avaya Aura® 6.2 Feature Pack 2 (FP2) introduced the Multi Device Access (MDA) feature that allows users to leverage multiple devices (endpoints) simultaneously to meet their communication needs. Users can receive and place calls at multiple devices, and move calls between devices as needed.

The MDA feature spans multiple Avaya Aura® components, including Avaya Aura® Session Manager (SM), Avaya Aura® Communication Manager (CM), Avaya Aura® Conferencing (AAC), Avaya Aura® Presence Server (PS) and supported Avaya SIP endpoints.

The MDA feature leverages IETF RFC 3261 for core SIP and the parallel forking capability built into Session Manager. Communication Manager enhances the user experience by supporting the ability to bridge-on to calls at any of the user's devices.

The diagram below shows a call between two MDA-enabled users in the Avaya Aura® environment:

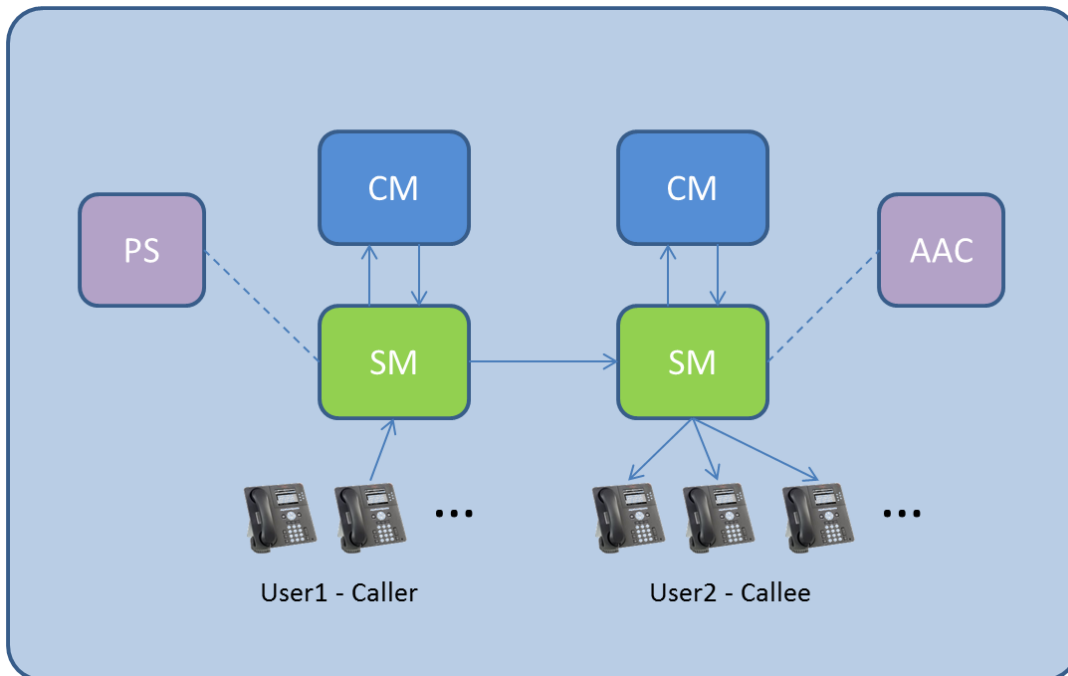


Figure 1 – Call between two MDA users

An MDA user can originate calls from any device. After origination and termination side application sequencing occurs, Session Manager parallel forks the call to the callee's registered devices, causing them to alert simultaneously. Once the call is answered at one of the devices, the call is canceled at the callee's other devices.

The MDA feature is intended for use by a single individual. It is not intended to be used by multiple distinct users sharing a single user's endpoints, with the exception of the Hotel Room scenario.

Avaya Aura® 6.2 FP4 introduced support of presence and IM capability in conjunction with MDA in specific limited configurations. See section 5 for details.

The Avaya Aura® 7.0 release expands the system capacity limits to 250,000 SIP users and 350,000 SIP devices, effectively more than doubling the total number of devices over previous releases. This allows a significantly larger number of users to experience the benefits of MDA.

1.1 Document Scope

This document describes the common Multi Device Access use cases, feature operations and interactions with other Avaya Aura® component features.

1.2 Related Resources

For information related to administering Multi Device Access, go to <http://support.avaya.com> to access the following documents:

- Administering Avaya Aura® Session Manager
- Avaya Aura® Session Manager Overview and Specification
- Avaya Aura® Communication Manager Feature Description
- Avaya Aura® Communication Manager What's New Guide

2. Supported Endpoints and Software Versions

The table below indicates the endpoint types and associated versions that support MDA in the Avaya Aura 6.2 FP4 release timeframe. Not all endpoints provide the same level of MDA support. Consult the Feature Scenarios section for specifics on the endpoint types that support particular MDA features.

Endpoint Type	Software Versions	Additional Notes
96x1	Avaya one-X® Deskphone SIP 6.4.0 and later	Includes 9601/9608/9608G/9611G/9621G/9641G IP Deskphones
96x0	Avaya one-X® Deskphone SIP 2.6.12.2a and later	Includes 9620L/9620C/9630G/9640/9640G/9650/9650C IP Deskphones
One-X Communicator for Windows (1xC-Win)	6.1.8 and later	
One-X Communicator for Mac (1xC-Mac)	2.0.3 and later	
Avaya Communicator for Windows (AC-Win)	2.0.0.13 and later	
Avaya Communicator for iPad (AC-iPad)	2.0 and later	Formerly referred to as Flare Experience for iPad.
Avaya Communicator for Android (AC-Android)	2.0.2 and later	
XT4200 / XT5000 (XT)	8.3.0 and later	Scopia (video)
One-X Mobile for iOS (1xM-IOS)	SIP 6.2 FP3 and later	
1100/1200 Series IP Desk Phones (1100/1200)	4.4 and later	

Endpoint Type	Software Versions	Additional Notes
E1x9 (E1x9)	R1.1 and later (E159) R1.0 and later (E169)	Includes E159/E169 only
H.175	R1.0 and later	

Use of presence/IM capability with MDA is supported on the following Avaya endpoint types and releases only:

- 9601/9608/9608G/9611G/9621G/9641G with Avaya one-X Deskphone SIP 6.4.0.33 and later software
- One-X Communicator (1xC) Windows with 6.2.3.343 and later software
- Flare Experience for iPad 1.2.1 and later software
- Avaya Communicator for Windows 2.0.0.13 and later software
- Avaya Communicator for iPad 2.0 and later software

Support for additional Avaya endpoint types is expected in the future. This document will be re-issued when additional endpoint types supporting MDA are made generally available.

The supported Avaya Aura® component versions are as follows:

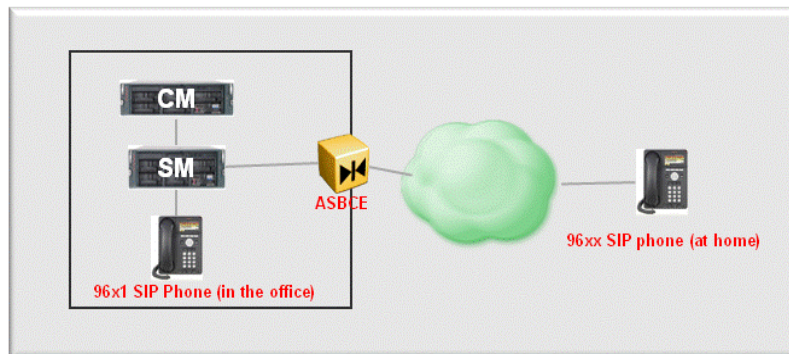
- Avaya Aura® Session Manager 6.2 FP4 6.3.8 and later software
- Avaya Aura® Communication Manager 6.2 FP4 6.3.4 and later software
- Avaya Aura® Conferencing 7.2 and later software
- Avaya Aura® Presence Server 6.2.4.0-641 and later software

The supported SBC for remote worker configurations is Avaya SBCE 6.2 and later. Avaya SBCE 6.2 FP1 adds support for multiple user devices behind the SBC.

3. Use Cases

This section describes some of the example common and/or typical uses cases where the MDA feature can be used to enhance the user experience.

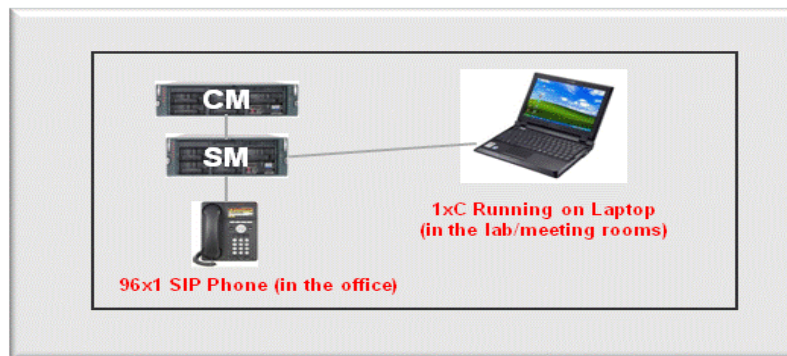
3.1 Alice: The Global Sales Executive



Use Case: Alice, the sales exec with an office phone and a home office phone

- Alice works from her home office for an hour in the morning before heading to the office. She gets on calls with her colleagues in the UK.
- At the end of the day, she works for another couple of hours from her home office. She joins calls with her colleagues in Japan.
- Alice uses the 9641G phone while at the office and a 9620C phone while working from her home office.
- MDA allows her to stay logged in on both the phones.
- Because she logs in her home office phone using an SBC, she does not need to come into the enterprise network using the VPN password that she uses when logging in on her PC.

3.2 Bob: The Tester



Use Case: Bob shuttles between his office, the lab and the meeting rooms

- Bob has to move from his office to the lab and to the meeting rooms throughout his work day.
- Bob prefers taking calls on his desk phone while he's in his office and on his one-X communicator when he's in the lab or a meeting room.
- The MDA feature allows Bob to stay simultaneously logged into the desk phone and his one-X communicator on his laptop.
- Bob can answer a call on his desk phone, bridge on from his one-X communicator, hang up on his desk phone and walk to the lab.
- Bob can answer a call on his one-X communicator, walk to his office and switch to his desk phone for the remainder of the call.

3.3 ABC Hotel: Multiple Phones in a Hotel Suite



Use Case: Multiple hotel room phones under one number/ one user license

- Hotel suite has a 9608 phone on the desk, 9601 phone by the bed, and a 9608 phone near the shower.
- With MDA, all the phones can register with the same number, and consume only one user license.
- With MDA, multiple people can participate in the same call using the different hotel room phones.

3.4 Emma: On the Move Sales Leader



Use Case: Emma participates in sales call across multiple devices

- Emma normally uses one-X Desk phone when she is in the office and one-X mobile SIP version when she is not in her office.
- Emma leaves the office for a sales call and realizes her mobile phone battery is dead. Not a problem, with Avaya Flare® on her iPad, she can pick up all calls directed to her work phone.
- She is in the middle of a call on her iPad when she walks back into her office. Her one-x desk phone is still logged in and she picks up her handset seamlessly ending the call on her iPad.

4. Feature Scenarios

The following sections summarize the behaviors of the most common set of system features when MDA user(s) are involved. They are not intended to capture every possible feature scenario in detail nor necessarily all of the supported features.

The Endpoint Support column in the tables below indicates the endpoint types that support the corresponding use case. Additional information may be made available on the Avaya support site describing the detailed feature support for specific endpoint types. In all cases, if a feature capability is required it is up to the customer to ensure that only endpoint types that support the feature are used in their configuration. An indication of 'ALL' in the Endpoint Support column indicates that the use case is supported by all endpoints supporting MDA as listed in section 2 of this document, subject to the caveats noted in the Additional Notes column.

4.1 SIP Login (Registration/Subscriptions/PPM)

Use Case	Behavior	Endpoint Support	Additional Notes
Registration	<ul style="list-style-type: none"> An MDA user can register up to 10 devices for a communication profile (note: the maximum simultaneous devices setting is administrable from 1 to 10). Exceeding the maximum devices setting either blocks new registration or unregisters the oldest registered device (based on communication profile setting). Lowering the maximum simultaneous device setting forces off the oldest n registered devices in excess of the new value. When a device first logs in it will reflect any existing calls present on other devices for the MDA user. When a device first logs in and other MDA device(s) are already registered, the registering device may display a message indicating that another device using the same extension is already registered and that calls may not be delivered to this location. The second part of this message can be ignored. 	<ul style="list-style-type: none"> ALL 	<ul style="list-style-type: none"> Each device can simultaneously register to a primary, secondary, and survivable remote server if the device supports simultaneous registrations. Depending on the specific device being used and the CM configuration, existing calls on other devices may not be reflected on the newly registered device. This will be fixed in a future release. Any existing stale registrations for a given device are terminated when the device re-registers.
Subscriptions	<ul style="list-style-type: none"> Each device can subscribe to all the supported event packages individually. Session Manager continues to enforce a limit of 1 subscription per event package per device. Session Manager continues to enforce a limit of 10 subscriptions per event package per user communication profile. When a device subscribes to the SM, any existing subscriptions on the user's other SM are automatically terminated. 	<ul style="list-style-type: none"> ALL 	<ul style="list-style-type: none"> Applies only to devices that support subscriptions.
Personal Profile Manager (PPM)	<ul style="list-style-type: none"> Each device receives its configuration data via PPM upon login. PPM downloads the same button data to each device (i.e. the Communication Manager station record is shared by all the user's MDA devices). PPM downloads location-specific data to each device based on the device location (e.g. dial plan, emergency numbers). Device settings are stored and retrieved on a per device basis. 	<ul style="list-style-type: none"> 96x1 96x0 1xC-Win 1xC-Mac AC-Win AC-iPad AC-Android 1xM-iOS H.175 	<ul style="list-style-type: none"> Applies only to devices that support PPM. 1xC-Mac, 1xM-iOS and AC-Android support PPM for provisioning (eg. feature buttons), but not for PPM based contacts.

4.2 Incoming/Outgoing Call Handling

Use Case	Behavior	Endpoint Support	Additional Notes
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Use Case	Behavior	Endpoint Support	Additional Notes
Incoming Call Handling (audio)	<ul style="list-style-type: none"> • A call to the MDA user alerts all of the user's registered devices (subject to secure call and Call Admission Control considerations). • Answering a call on a device causes alerting to stop on other devices, but they retain indication of the active call on the same call appearance number (for devices that support call appearances (CA's) and the dialog event package). • Answer race condition is handled and only one device can actually answer the incoming call. • If a call is answered on two devices at exactly the same time, one device will win and the other device will not immediately show the call appearance as busy. If the user now presses the same call appearance on the device that did not win, the call will drop. • The endpoint's Ignore function mutes alerting on the device where the function was invoked only, and not at the user's other devices. The incoming call remains available to be answered after Ignore is invoked. • An MDA user can be active on a call on each device (same or different call). 	<ul style="list-style-type: none"> • ALL 	<ul style="list-style-type: none"> • Devices that support the dialog state event package should show consistent call state across all of their call appearances. • Bridge-on to the same call is subject to CM's 6-party limit for ad-hoc conference. • See also "Bridge-on (audio/video)" use cases. • See also "Secure Calls" use cases. • See also "Dial Plan Transparency" use cases. • See also "Send All Calls (SAC)" section of "Communication Manager (CM) Features" use cases. • See also "Call Admission Control (CAC)" use cases.
Incoming Call Handling (video)	<ul style="list-style-type: none"> • A call to the MDA user alerts all of the user's registered devices (subject to secure call and Call Admission Control considerations). • Answering a call on a device causes alerting to stop on other devices, but they retain indication of the active call on the same call appearance number (for devices that support call appearances (CA's)). • Answer race condition is handled and only one device can actually answer the incoming call. • If a call is answered on two devices at exactly the same time, one device will win and the other device will not immediately show the call appearance as busy. If the user now presses the same call appearance on the device that did not win, the call will drop. • An MDA user can receive and answer an MCU dial-out call and participate in a video conference. 	<ul style="list-style-type: none"> • 1xC-Win • 1xC-Mac • AC-Win • AC-iPad • XT • H.175 	<ul style="list-style-type: none"> • Applies only to devices that support video. • Devices that support the dialog state event package should show consistent call state across all of their call appearances. • See also "Secure Calls" use cases. • See also "Dial Plan Transparency" use cases. • See also "Call Admission Control (CAC)" use cases.

Use Case	Behavior	Endpoint Support	Additional Notes
Outgoing Call Handling (audio)	<ul style="list-style-type: none"> An MDA user can initiate audio calls from any device and other devices will show the call appearance as active (if they support CA's and dialog event package). An MDA user can invoke features (via button/FNU, FAC, or FNE) and the updated status will be reflected at other devices. When one device's CA is in the dialing state, other devices, depending on device type, can bridge on, but cannot dial digits; only the initial endpoint can continue to dial. When one device's CA is in the trying state (i.e. outgoing alerting call), other devices, depending on device type, can bridge on, but cannot hear call progress tones (e.g. ringback tone) until the call is answered. When one device's CA is in the connected state (i.e. outgoing call completed and far end answered), other devices can bridge on and be connected to the call (audio conferenced only). 	<ul style="list-style-type: none"> ALL 	<ul style="list-style-type: none"> Status synchronization is subject to device supporting the appropriate event package. Ability to bridge-on from another device during dialing or alerting is device specific. See also "Bridge-on (audio)" use cases.
Outgoing Call Handling (video)	<ul style="list-style-type: none"> An MDA user can initiate video calls from any device and other devices will show the call appearance as active (if they support CA's). An MDA user can invoke features (via button/FNU, FAC, or FNE) and updated status will be reflected at other devices. An MDA user can initiate calls to an MCU and participate in a video conference. 	<ul style="list-style-type: none"> 1xC-Win 1xC-Mac AC-Win AC-iPad XT H.175 	<ul style="list-style-type: none"> Applies only to devices that support video. Status synchronization is subject to device supporting the appropriate event package. See also "Bridge-on (video)" use cases.

4.3 Bridge-On / Hand-Off / Exclusion

Use Case	Behavior	Endpoint Support	Additional Notes
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Use Case	Behavior	Endpoint Support	Additional Notes
Bridge-on (audio call)	<ul style="list-style-type: none"> • An MDA user can bridge-on to a call by pressing the call appearance (CA) that represents an active call (or by using the Bridge soft key) at one of the user's other devices. • Bridge-on applies to both incoming and outgoing calls. • Barge-in tone can be provided when additional device bridges on. Barge-in tone needs to be administered for the station, and exclusion must not be active. All devices on the call will hear the tone (including the device bridging on). • Ability to bridge-on can be controlled using exclusion. • An MDA user can bridge onto a call held on another device. When this happens, the device that previously held the call is taken off hold and the "resume" soft key is replaced with a "bridge" soft key. 	<ul style="list-style-type: none"> • 96x1 • 96x0 • 1xC-Win • 1xC-Mac • AC-iPad • AC-Win • 1xM-iOS • H.175 	<ul style="list-style-type: none"> • Bridge-on applies only to endpoints that support call appearances (CA's). • See also AAC and Exclusion use cases. • Bridge-on to the same call is subject to CM's 6-party limit for ad-hoc conference. • Ability to bridge-on during outgoing call placement (but before the call is answered) may or may not be allowed depending on the specific software versions and endpoint types used. Talk-path is provided at the device bridging on when the called party answers. • Ability to bridge-on after an SM failover is not supported. • One-way talk path between MDA devices may result when the far end puts the call with one device on hold and the user bridges-on to the call from a second device. • See also "Hold / Resume" use cases.
Bridge-on (video call)	<ul style="list-style-type: none"> • After bridge-on to an active point-to-point video call the video stream will be lost. This will result in an audio-only conference call. • Barge-in tone and exclusion are applicable as per the audio use case. 	<ul style="list-style-type: none"> • 1xC-Win • 1xC-Mac • AC-iPad • AC-Win • H.175 	<ul style="list-style-type: none"> • Bridge-on for video is not supported.
Call Hand-off (audio call)	<ul style="list-style-type: none"> • An MDA user may move an audio-only call from one device to another by first bridging on to the call at the new device, and then ending the call at the original device. • Call handoff scenarios may impact certain AAC conference capabilities (e.g. roster updates, etc.). 	<ul style="list-style-type: none"> • 96x1 • 96x0 • 1xC-Win • 1xC-Mac • AC-iPad • AC-Win • 1xM-iOS • H.175 	<ul style="list-style-type: none"> • See also AAC conference (meet-me and ad-hoc) use cases.
Call Hand-off (video call)	<ul style="list-style-type: none"> • Call handoff scenarios may cause disruption of video when video is present on the initial device. 	<ul style="list-style-type: none"> • 1xC-Win • 1xC-Mac • AC-iPad • AC-Win • H.175 	<ul style="list-style-type: none"> • Certain video endpoints are able to add or re-establish video after a handoff (i.e. AC-Win, AC-iPad). • See also AAC conference (meet-me and ad-hoc) use cases. • See also video use cases.

Use Case	Behavior	Endpoint Support	Additional Notes
Exclusion	<ul style="list-style-type: none"> Exclusion may be enabled while on a call. For 96x1 Release 6.3 and later endpoints when exclusion is activated, the exclusion button lights on only the device that activated the exclusion. For all other endpoint types, the exclusion button lights on all devices that support the exclusion button. When exclusion is activated while on an active call, other MDA devices participating in the call are automatically disconnected. When exclusion is active, other devices cannot bridge-on to a call that is already active at another device. For 96x1 Release 6.3 and later endpoints exclusion can only be disabled by the device active on a call. For all other endpoint types, exclusion can be deactivated at any device. 	<ul style="list-style-type: none"> 96x1 1xC-Win 1xC-Mac AC-Win AC-iPad AC-Android 1xM-iSO H.175 	<ul style="list-style-type: none"> Use of barge-in tone for MDA users is recommended to address any concerns over privacy. Activating exclusion at a non-96x1 Release 6.3 and later endpoint that has bridged on to an active call (not the device that originally answered the call) results in the activating device being dropped from the call. 1xC-Mac, AC-Android and 1xM-iOS types support auto-exclusion only.

4.4 Hold / Resume

Use Case	Behavior	Endpoint Support	Additional Notes
Hold / Resume	<ul style="list-style-type: none"> An MDA user can place a call on hold at any device where the call is active. An indication that a call has been held is provided to the other MDA devices When multiple devices are connected (bridged) to the call, hold is only indicated at the other MDA devices when all of the bridged-on devices have put the call on hold. A call held at any device stays up even if other MDA devices end the call. The user may resume a held call only at the device that held the call. The “resume” softkey is not displayed for a call that is held at the active MDA user device and then bridged-on to at a second user device. The user can still bridge-on to the call at the original device. 	<ul style="list-style-type: none"> 96x1 96x0 1xC-Win 1xC-Mac AC-Win AC-iPad AC-Android 1xM-iOS H.175 	<ul style="list-style-type: none"> Status synchronization is subject to devices supporting the dialog event package. See also “Bridge-on (audio)” use cases.
Hold Recall	<ul style="list-style-type: none"> Hold recall is only triggered if all the user’s devices are on hold. If one of the devices becomes active or idle on a held call appearance, any active hold-based features are cancelled. Hold recall is only indicated at all the device(s) that have put the call on hold. 	<ul style="list-style-type: none"> 96x1 96x0 1xC-Win AC-Win AC-iPad AC-Android 1xM-iOS H.175 	

4.5 Conference / Transfer

Use Case	Behavior	Endpoint Support	Additional Notes
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Use Case	Behavior	Endpoint Support	Additional Notes
Call Transfer	<ul style="list-style-type: none"> An MDA user can transfer a non-bridged call normally (i.e. in the same way as a non-MDA user). An MDA user can transfer a bridged-on call and when successfully completed, moves the call away (i.e. call ends) from all devices of the user. The far end of a call can invoke transfer on a call that is bridged-on by multiple MDA user devices. 	<ul style="list-style-type: none"> 96x1 96x0 1xC-Win 1xC-Mac AC-Win AC-iPad AC-Android 1xM-iOS H.175 	<ul style="list-style-type: none"> Bridged-on scenarios will not use the endpoint managed transfer feature regardless of the endpoint type or system settings.
Transfer Recall	<ul style="list-style-type: none"> Transfer recall is only indicated on the device that is invoking the transfer. 	<ul style="list-style-type: none"> 96x1 96x0 1xC-Win AC-Win AC-iPad AC-Android 1xM-iOS 	
Call Conference (CM Ad-hoc)	<ul style="list-style-type: none"> An MDA user can invoke conference at either the original device (that was on the call) or a bridged-on device normally. If an MDA user device is bridged-on to a call and conference is invoked at a different MDA device, the user will need to press a different CA to re-connect to the call after the conference operation is completed. An MDA user device not on an active call may not get display updates if the active call changes due to a conference or reverts to a 2-party call. 	<ul style="list-style-type: none"> 96x1 96x0 1xC-Win 1xC-Mac 1xM-iOS H.175 	<ul style="list-style-type: none"> The conference operation will change the CA number of the resulting call.
Call Conference (AAC Ad-hoc)	<ul style="list-style-type: none"> An MDA user device may be a participant in an AAC-based ad-hoc conference. An MDA user may join an AAC meet-me conference from any device. Bridge-on to an AAC ad-hoc conference call will result in a local CM conference, hence, a cascaded conference. The user appears on the conference roster only once, even if multiple devices are connected to the call. The conference roster and moderator or participant controls are not available on the bridged-on devices. The user can use TUI and/or AAC Collaboration Agent to control the conference, even when controls are lost on the bridged-on endpoint. A call can be handed off to another user device and dropped on the original device without dropping the conference (when user is the moderator), and without losing moderator status. Hold/resume CM-side endpoint operations are not reflected through to the AAC, and there are no corresponding CA or endpoint updates. 	<ul style="list-style-type: none"> 96x1 1xC-Win 1xC-Mac AC-Win AC-iPad AC-Android 1xM-iOS H.175 	<ul style="list-style-type: none"> AAC ad-hoc conferencing applies when the user device is configured to use AAC as the conference focus for ad-hoc conferencing. 1xC-Win, AC-Android, and 1xM-iOS do not support the AAC roster functionality. On AC-Win the moderator cannot hand-off call (roster and integrated collaboration are not preserved). For AC-iPad there is a limitation that only one device can join the call.

Use Case	Behavior	Endpoint Support	Additional Notes
Call Conference (AAC Meet-me)	<ul style="list-style-type: none"> An MDA user may join an AAC meet-me conference from any device. Bridge-on to AAC meet-me conference call will result in local CM conference, hence, a cascaded conference. The user is not prompted for a conference code when bridging-on to the conference from another device. The user appears on the conference roster only once, even if multiple devices are connected to the call. The conference roster and moderator or participant controls are not available on the bridged-on devices. The user can use TUI and/or AAC Collaboration Agent to control the conference, even when controls are lost on the bridged-on endpoint. A call can be handed off to another user device and dropped on the original device without dropping the conference (when user is the moderator), and without losing moderator status. Hold/resume CM-side endpoint operations are not reflected through to the AAC, and there are no corresponding CA or endpoint updates. 	<ul style="list-style-type: none"> 96x1 1xC-Mac AC-Win AC-iPad AC-Android 1xM-iOS H.175 	<ul style="list-style-type: none"> The issues involving loss of conference roster and moderator or participant controls at bridge-on devices will be addressed in a future release. 1xC-Win, AC-Android, and 1xM-iOS do not support the AAC roster functionality. On AC-Win the moderator cannot hand-off call (roster and integrated collaboration are not preserved). For AC-iPad there is a limitation that only one device can join the call.

4.6 Emergency Calling

Use Case	Behavior	Endpoint Support	Additional Notes
Emergency Calling	<ul style="list-style-type: none"> The location associated with the device determines the list of emergency numbers sent to the device (via PPM), and location based routing rules apply during emergency call placement. An MDA user may place an emergency call from any device. An emergency call made from one of an MDA user's devices is not reflected at the user's other devices. As a result, it is not possible to bridge-on to an emergency call at another device. If another call is placed on the same call appearance (CA) number at another device, the original emergency call is not affected. A PSAP callback call will be directed only to the specific device that placed the original emergency call (assuming the PSAP callback is directed to the ELIN and not the user's number). Incoming calls to the user may not be reflected on a device that is active on an emergency call or PSAP callback call, but will be reflected on the user's other devices. 	<ul style="list-style-type: none"> ALL 	<ul style="list-style-type: none"> Emergency calls are not application sequenced by Session Manager. A PSAP callback call (using ELIN) is not forked by Session Manager. A distinct ELIN can be associated with each user device, based on the IP address of the device or as assigned by an ELIN server. CM should be configured to send ELIN to PSAP so that callback call is directed to the ELIN. See Appendix A for details. The CM crisis alert interface provides the number of the user that placed the emergency call, but not the location of the specific MDA device that placed the call.

4.7 Secure Calls

Use Case	Behavior	Endpoint Support	Additional Notes
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Use Case	Behavior	Endpoint Support	Additional Notes
Secure Calls	<ul style="list-style-type: none"> A secure (SIPS) call will only be delivered by Session Manager (SM) to MDA devices registered using TLS transport. Any devices registered using non-TLS (i.e. TCP or UDP) transport will not alert. However, the associated call appearance will still indicate the presence of the call. A bridge-on attempt from a non-TLS registered device to a secure (SIPS) call may be denied. 	<ul style="list-style-type: none"> 96x1 96x01xC-Win AC-Win AC-iPad AC-Android 1xM-iOS H.175 	<ul style="list-style-type: none"> Status synchronization is subject to devices supporting the dialog event package.

4.8 Contacts

Use Case	Behavior	Endpoint Support	Additional Notes
Contacts	<ul style="list-style-type: none"> An MDA user's contacts are synchronized across devices. Adds/changes/deletions of contacts are reflected at other MDA devices within a short time interval. 	<ul style="list-style-type: none"> 96x1 96x0 1xC-Win AC-Win AC-iPad H.175 	<ul style="list-style-type: none"> It may take 2 minutes or more for the updates to be propagated. Status synchronization is subject to devices supporting the avaya-ccs-profile event package and PPM. For H.175 the listed behaviors apply to PPM contacts only. Exchange contacts are only synced by H.175 endpoints.

4.9 Call Logs

Use Case	Behavior	Endpoint Support	Additional Notes
Call Log	<ul style="list-style-type: none"> Phone call log is not synchronized between devices, unless the user is configured for centralized call logging and uses endpoint types that support this feature. If centralized call logging is enabled, then logs are synchronized at login time. Each phone maintains its own call log; therefore, if a call is answered by one endpoint, it could appear in the "Answered" call log on that endpoint but in the "Missed" call log on the other endpoints (until re-synchronized by the centralized call logging feature). An outbound call placed from one device that is not answered by the far end will not be logged by the user's other devices (until re-synchronized by the centralized call logging feature).. An outbound answered call placed over an outgoing trunk that does not provide a far-end name and number results in an incomplete call log at the user's other devices (until re-synchronized by the centralized call logging feature). 	<ul style="list-style-type: none"> 96x1 96x0 1xC-Win 1xC-Mac AC-Win AC-iPad AC-Android 1xM-IOs XT H.175 	<ul style="list-style-type: none"> Support for centralized call logging is only provided by 96x1 and 1xC-Win endpoint types. Endpoints other than 96x1 and 1xC-Win do not synchronize call logs with other endpoints (since they do not support centralized call logging). 1xC-Win generates two call log entries if a call is answered at a different MDA device belonging to the same user. XT supports a limited set of last received calls on the TV/web GUI.

4.10 Location Based Routing

Use Case	Behavior	Endpoint Support	Additional Notes
Location Based Routing	<ul style="list-style-type: none"> When a call is placed using an MDA user endpoint, the location associated with the originating device (or administered home location if none) is used by Session Manager (SM) in routing the call. 	<ul style="list-style-type: none"> ALL 	

4.11 Communication Manager (CM) Features

Use Case	Behavior	Endpoint Support	Additional Notes
Message Waiting Indicator (MWI)	<ul style="list-style-type: none"> Message waiting indication will be consistent across endpoints belonging to the same user. When the MWI indicator should be on for the MDA user, all endpoints will have MWI indicator lit, and vice-versa. MWI indicator will have the proper state when device logs on. 	<ul style="list-style-type: none"> 96x1 96x01xC-Win 1xC-Mac AC-Win AC-iPad AC-Android 1xM-iOS 1100/1200 H.175 	<ul style="list-style-type: none"> Status synchronization of MWI status is subject to device supporting the “message-summary” event package.
Send All Calls (SAC)	<ul style="list-style-type: none"> Send all calls indication will be consistent across endpoints belonging to the same user. SAC can be activated/deactivated at any device. There is a single SAC state for the user, not one per device. Each depression of the SAC button toggles the state on or off. Incoming calls will appear briefly at all devices as CM invokes coverage. If SAC is activated in the presence of incoming alerting calls, the calls move away from all of the MDA user’s devices and are directed to coverage. 	<ul style="list-style-type: none"> 96x1 96x0 1xC-Win 1xC-Mac AC-Win AC-iPad AC-Android 1xM-iOS 1100/1200 H.175 	<ul style="list-style-type: none"> Status synchronization of SAC status is subject to device supporting the “avaya-cm-feature-status” event package.
Call Forwarding	<ul style="list-style-type: none"> Call forwarding indication will be consistent across endpoints belonging to the same user. Call forwarding can be activated/deactivated at any device. Incoming calls may appear briefly at all devices as CM invokes forwarding of the call (depends on type of forwarding that is active). Caller may hear redirection tone when call is forwarded as normal. 	<ul style="list-style-type: none"> 96x1 96x0 1xC-Win 1xC-Mac AC-Win AC-iPad AC-Android 1xM-iOS 1100/1200 H.175 	<ul style="list-style-type: none"> Status synchronization of call forwarding status is subject to device supporting the “avaya-cm-feature-status” event package.
Busy Indicator	<ul style="list-style-type: none"> Busy line indicators will function and activate for any activity at an MDA user’s device. An MDA user with a busy indicator for another user will receive the appropriate status updates for that indicator at all the user devices. 	<ul style="list-style-type: none"> 96x1 96x0 1xC-Win AC-Win AC-iPad 1xM-iOS H.175 	<ul style="list-style-type: none"> Status synchronization of busy indicator status is subject to device supporting the “avaya-cm-feature-status” event package.

Use Case	Behavior	Endpoint Support	Additional Notes
Bridging	<ul style="list-style-type: none"> Standard bridging may be used in conjunction with the MDA feature on devices that support bridged call appearances. Call states for calls at MDA user devices are reflected at any bridged appearances. Exclusion applies to both bridged devices and MDA devices. 	<ul style="list-style-type: none"> 96x1 96x0 1xC-Wiin AC-Win AC-iPad AC-Android 1xM-iOS H.175 	<ul style="list-style-type: none"> Status synchronization is subject to device supporting the “dialog” event package.
EC500	<ul style="list-style-type: none"> EC500 may be used in conjunction with the MDA feature. If a user answers a call on the cell phone, all the SIP devices stop alerting, but can bridge on. If a user answers a call on one of the PF devices, the cell phone stops alerting. 	<ul style="list-style-type: none"> 96x1 96x0 1xC-Win AC-Win AC-iPad AC-Android 1xM-iOS H.175 	
Group Page	<ul style="list-style-type: none"> A group page call is directed to the MDA user’s highest q-value (or most recently registered) device only. A group page call is auto-answered at the target device. 	<ul style="list-style-type: none"> 96x1 H.175 	<ul style="list-style-type: none"> Session Manager will not fork a CM group page call. Bridge-on to a group page call from another MDA device is denied in CM 6.2 FP3 and later releases.
Whisper Page	<ul style="list-style-type: none"> A whisper page to an idle MDA user will alert all devices with priority call type alerting. A whisper page to an MDA user active on a call will be heard at all devices connected to the call. The whisper page will only be heard on one of the MDA user’s calls when there are multiple calls active at different devices. The call the whisper page will be heard on is the one with the lowest call appearance number. 	<ul style="list-style-type: none"> 96x1 96x0 H.175 	<ul style="list-style-type: none"> 96x0 endpoints can only initiate a whisper page using FAC.
Call Pickup	<ul style="list-style-type: none"> Call pickup can be invoked from any of the MDA user’s devices. A call alerting at an MDA user’s devices that is picked up by another user causes the MDA user’s devices to stop alerting. 	<ul style="list-style-type: none"> 96x196x0 1xC-Win 1xC-Win 1xM-iOS H.175 	
Call Park	<ul style="list-style-type: none"> Call park can be invoked from any of the MDA user’s devices. If an MDA user is on a call with multiple devices (i.e. bridged-on) and invokes call park at one device, the other devices remain on the call (but may be dropped after a few seconds depending on CM system parameter settings). An MDA user can unpark a call from a device different from the device where call park was invoked. 	<ul style="list-style-type: none"> 96x1 96x0 1xC-Win 1xC-Mac 1xM-iOS 1100/1200 H.175 	<ul style="list-style-type: none"> When an MDA user unparks a call at one device, the called party information is not displayed at the other devices. The 96x0 cannot unpark a call parked at a different MDA device associated with the same user. It can unpark the call from a different non-MDA user device or device belonging to a different MDA user.
Automatic Callback (ACB)	<ul style="list-style-type: none"> Automatic callback cannot be activated on a call if the MDA user has a second active call on another device. An automatic callback call will alert at all the MDA user’s devices. 	<ul style="list-style-type: none"> 96x1 96x0 1xC-Win 1100/1200 H.175 	

Use Case	Behavior	Endpoint Support	Additional Notes
Autodial and Abbreviated Dialing	<ul style="list-style-type: none"> An MDA user may access CM-based abbreviated dial lists from any device using the associated button or via FAC. Devices that support autodial buttons not tied to CM-based abbreviated dial lists are applicable only to that device. 	<ul style="list-style-type: none"> 96x1 96x0 H.175 	<ul style="list-style-type: none"> Only 96x0 and 96x1 endpoints support abbreviated dialing buttons. For other endpoint types, support is limited to FAC.
Team Button	<ul style="list-style-type: none"> The Team button may be used to view and answer a call for the monitored user that is associated with the button. 	<ul style="list-style-type: none"> 96x1 1xC-Win H.175 	<ul style="list-style-type: none"> The Team button should only be administered for the user's station if all the endpoints used by the user support Team buttons.
Auto Answer	<ul style="list-style-type: none"> Inbound calls to an MDA user administered with the auto-answer feature will only be delivered to the highest q-value (or most recently registered) device. The device receiving the inbound call will auto-answer if it supports the auto-answer feature. 	<ul style="list-style-type: none"> 96x1 96x0 1xC-Win AC-Win AC-iPad AC-Android 1xM-iOS 	<ul style="list-style-type: none"> Auto-answer is typically configured for Contact Center agents. MDA is not supported in Contact Center deployments. See also "Group Page" use case.

4.12 Call Admission Control (CAC)

Use Case	Behavior	Endpoint Support	Additional Notes
Session Manager Call Admission Control (SM-CAC)	<ul style="list-style-type: none"> Inbound calls to an MDA user with endpoints in multiple locations will initially count the call only once against each location, independent of the number of user devices in that location. Once a call is answered, only the originator's and answering device's locations are reflected in CAC counts for the call. Session Manager downspeeds or rejects individual device call legs as needed to enforce CAC limits. Other Session Manager CAC behaviors (e.g. enforcement of per call bandwidth limits, intra-location call handling, etc.) apply. 	<ul style="list-style-type: none"> ALL 	<ul style="list-style-type: none"> It is possible for only a subset of user devices to alert when CAC limits are enforced by Session Manager. Call handoff scenarios may in some instances cause double-counting of bandwidth utilization.
Communication Manager Call Admission Control (CM-CAC)	<ul style="list-style-type: none"> Communication Manager (CM) maintains a single association between a station and a network region, and so a call to an MDA user may be rejected by CM CAC if there is insufficient bandwidth for the single network region tracked by CM. Similarly, a call to an MDA user device may be allowed by the system even when the bandwidth limits associated with the device's network-region would actually be exceeded. 	<ul style="list-style-type: none"> ALL 	<ul style="list-style-type: none"> Session Manager based Call Admission Control works best in conjunction with the MDA feature when user devices are located in different network-regions.

4.13 Call Detail Recording (CDR)

Use Case	Behavior	Endpoint Support	Additional Notes
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Use Case	Behavior	Endpoint Support	Additional Notes
Call Detail Recording (CDR)	<ul style="list-style-type: none"> Session Manager based CDR will reflect the originating and/or terminating MDA user device IP address in the CDR record. Bridge-on activity is not reflected in CDR records. 	<ul style="list-style-type: none"> ALL 	

4.14 Hotel Room

Use Case	Behavior	Endpoint Support	Additional Notes
Hotel Room	<ul style="list-style-type: none"> In a hotel room arrangement, multiple devices can connect to a call (i.e. bridge-on) at the same time. When placing an outgoing call, only one device must be active until all destination digits have been dialed (otherwise, the call will fail). 	<ul style="list-style-type: none"> 96x1 96x0 	<ul style="list-style-type: none"> See also "Bridge-on (audio)" use cases.

4.15 Remote Office (REMO) / Remote Worker

Use Case	Behavior	Endpoint Support	Additional Notes
Remote Office (REMO) / Remote Worker	<ul style="list-style-type: none"> An MDA user may have enterprise/local endpoints as well as remote endpoints behind an SBC (REMO or remote worker configuration) concurrently logged in. 	<ul style="list-style-type: none"> 96x1 96x0 1xC-Win AC-Win AC-iPad AC-Android 1xM-iOS H.175 	<ul style="list-style-type: none"> Avaya SBCE 6.2 limits MDA users to one device behind a given SBC instance. This restriction is removed in SBCE 6.2 FP1.

4.16 Dial Plan Transparency (DPT)

Use Case	Behavior	Endpoint Support	Additional Notes
Communication Manager Dial Plan Transparency (CM-DPT)	<ul style="list-style-type: none"> Communication Manager based DPT is invoked when CM determines that the called destination's network region is unreachable, so CM-DPT will generally be invoked before SM-DPT. The network region CM utilizes to make the DPT decision (for a call directed to an MDA user) is based on an association CM makes between the MDA user and a single network region. This association is based on the network region associated with a SIP endpoint initiating or receiving a call previously for the MDA user, and is then stored and used by CM. When DPT is invoked, only a single DPT call is launched via the PSTN, regardless of the number of endpoints registered for the destination MDA user. If the DPT call goes to a branch location, any MDA user devices in that branch will receive the call, but endpoints in other locations will not. 	<ul style="list-style-type: none"> ALL 	<ul style="list-style-type: none"> CM-DPT will not handle all network outage scenarios, so SM-DPT is still required. An MDA user with endpoints registered in multiple network regions may experience unexpected DPT behavior because CM only considers a single network region in the decision to initiate DPT. Limitations exist as to the number of user endpoints that are alerted for an incoming call when DPT has been invoked and the MDA user's devices are spread across multiple physical locations.

Use Case	Behavior	Endpoint Support	Additional Notes
Session Manager Dial Plan Transparency (SM-DPT)	<ul style="list-style-type: none"> Session Manager based DPT is invoked in the following two cases: <ul style="list-style-type: none"> When the calling user's primary and secondary SM's cannot reach the called user's primary and secondary SM's. In this case, the calling user's SM will initiate a DPT call to reach the called user's SM, and SM will deliver the call to all the MDA user's registered endpoints that are reachable. When a call is initiated from an endpoint in a branch location that has been disconnected from the core and the called SIP user is served by a different CM. In this case, SM will initiate a DPT call to the called user's SM, and SM will deliver the call to all the MDA user's registered endpoints that are reachable. 	<ul style="list-style-type: none"> ALL 	<ul style="list-style-type: none"> Limitations exist as to the number of user endpoints that are alerted for an incoming call when DPT has been invoked and the MDA user's devices are spread across multiple physical locations.

4.17 Presence/IM

Use Case	Behavior	Endpoint Support	Additional Notes
Presence	<ul style="list-style-type: none"> The user's MDA devices may simultaneously subscribe for presence services with the PS. The user's MDA devices may all publish presence state to the PS. The PS aggregates the presence state across the user's multiple devices. Watchers of the MDA user will receive and render the aggregated presence state from the PS. 	<ul style="list-style-type: none"> 96x1 1xC-Win AC-Win AC-iPad H.175 	<ul style="list-style-type: none"> Presence support is limited to release and endpoint versions listed in section 2 and also to the configurations and capacity limits described in section 5.
IM (Instant Messaging)	<ul style="list-style-type: none"> An MDA user may have one IM capable device in the MDA device group. An MDA user's IM capable device can initiate and receive IM's to/from other IM capable users. 	<ul style="list-style-type: none"> 96x1 1xC-Win AC-Win AC-iPad 	<ul style="list-style-type: none"> IM support is limited to release and endpoint versions listed in section 2 and also to the configurations and capacity limits described in section 5. Users cannot have more than one IM capable device registered at the same time.

4.18 Failure Recovery

Use Case	Behavior	Endpoint Support	Additional Notes
Failure Recovery	<ul style="list-style-type: none"> MDA devices may be simultaneously-registered to two Session Managers and a Branch Session Manager and failover independently. Session Manager delivers incoming calls to all of the user's core SM registered MDA devices even if not all are registered to the same Session Manager instance. Session Manager can alternate route requests to MDA endpoints (via the user's alternate SM) independently for each endpoint. Connection preserved calls will in general not be reflected on the MDA user's other devices. 	<ul style="list-style-type: none"> 96x1 96x0 1xC-Win AC-Win AC-iPad AC-Android 1xM-iOS H.175 	<ul style="list-style-type: none"> Not all devices support SM simultaneous registration.

5. Limitations

The following is a list of endpoint types, configurations, and scenarios that are not supported with the Avaya Aura® 6.2 FP4 Multi Device Access feature:

- Flare PC, ADVD endpoints and any other endpoints or software versions not listed in section 2.
- One-X Communicator used in shared control mode with more than one controllable device.
- Communication Manager Dual Registration feature (i.e. H.323 & SIP endpoints in combination for the same communication profile).
- Bridge-on to calls with video.
- Contact center call scenarios.

The MDA feature has the following additional known limitations:

- When a user is on an Avaya Aura Conferencing conference call and switches to a different device, moderator/participant controls will not be available on that device.
- One-X Communicator Shared Control mode will not work if the user has more than one other controllable device registered.
- If a call is answered on two devices at exactly the same time, one device will win and the other device will not immediately show the call appearance as busy.
- While a user is making a call from one device, she/he can bridge on from a second device, but cannot dial digits from the second device. The second device becomes an active participant in the call only after the call is answered.
- While user is active on a video call, if the user bridges on from another device, the video will be lost. Audio call/conference will continue.
- On non-96x1 endpoints, if a user enables exclusion for a call on one endpoint, exclusion can be disabled from one of the other endpoints.
- When one-X communicator is being used with another device and an incoming call is answered on the other device, one-X communicator shows two call log entries for the incoming call, one entry marks the call as missed call and the other entry marks it as outgoing call.
- Use of multiple devices behind the Avaya SBC requires version 6.2 FP1 or later of the Avaya SBCE software.
- Presence and IM support is limited to the user configurations listed below:
 - Users with one presence/IM capable SIP device configured in an MDA group with other SIP clients that are not presence/IM capable.
 - Users with multiple presence capable SIP devices configured in an MDA group but only one IM capable SIP client.
 - Users with single controllable SIP endpoint (96x1) in shared control mode with one-X Communicator in an MDA group with other non-IM capable SIP clients.
- With the above presence/IM configurations, the following additional limitations and recommendations apply:
 - At present it is not possible to have multiple IM capable SIP endpoints configured in an MDA group.
 - The AES collector should not be enabled for the users that are using MDA. If enabled, AES collector limits apply. The AES collector on PS has a maximum capacity of 4000 users for a non-clustered PS deployment and 28,000 users for a clustered PS deployment (8 node cluster) when deployed with a single AES. This means that if an AES collector is enabled for the SIP endpoints in an MDA group, the maximum number of dual registration users that can be deployed in this solution is 4000 with a single node PS deployment or 28,000 with a clustered PS deployment (8 nodes).

- The number of Presence/IM capable clients cannot exceed an average of 1.4 clients per user. For a single node PS deployment this means that 16,000 users can have a maximum of 22,400 clients. PS supports a maximum of 250,000 users with 350,000 SIP devices (using two 8 node clusters).
- MDA configurations should use ACL = Allow. For cases where ACL = Confirm if more than one devices is capable of supporting a pop-up (ex 2 1xC clients) the first response will set the ACL in PS and any attempt to select one of the Pop-Up options on the second 1xC will result in an error response. In cases where MDA is used in conjunction with ACL = Confirm the auto confirm option must be disabled on the 96X1.
- Status note may not be displayed correctly if a different note is set on multiple clients in an MDA configuration.

Appendix A – Emergency Calling Configuration

The following describes the recommended Emergency Calling configuration in Communication Manager (CM) for MDA users to ensure that an emergency call is sent to the PSAP with proper location identification (ELIN) as the calling number:

- Ensure that any possible IP address ranges used by MDA endpoints are entered on the CM ip-network-map form and all entries have the proper associated ELIN (“Emergency Location Extension”). This configuration applies to the CM used as the emergency calling trunk gateway.
- Ensure that on all station forms associated with MDA users the Location field is left blank and the ELIN field (“Emergency Location Extension”) is set to an extension that does not match any ELIN entered on the ip-network-map form. Leave the default value of ‘n’ for the associated “Always Use?” field next to the ELIN field. This forces the CM to use the ELIN information from the ip-network-map form when an emergency call is placed. This configuration applies in the case where the same CM is used as the users’ CM feature server and emergency calling trunk gateway.