UNIFY Harmonize your enterprise

Technical Paper

Multi Address Appearance (MAA) On OpenStage

Issue 1.1

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Disclaimer

This document has been created in all conscience. It contains descriptions of multiple address appearance on OpenStage raising no claims of completeness.

Disambiguation

The document describes the Multiple Address Appearance (MAA) for OpenStage@Asterisk. The Telecommunication Industry Association (TIA) has defined terms for VoIP telephony features [1], which slightly differ from the Unify wording. This is historically based. As Unify uses the terms in every kind of documentation, this document will also use the Unify wording. Following terms are affected:

- Multiple Address Appearance (MAA)
- Multiple Line Appearance (MLA)
- Multiple Station Appearance (MSA)

Therefore the wording is adapted to the Unify way of usage. The following table gives an overview about the differences:

Term (SEN)	**Meaning**	**Term (TIA)**
MAA/ MLA Private line type	The Multiple Address Appearance feature, also commonly known as "Multiple Line Appearance", provides the served user with multiple addresses appearing on a single telephone. The served user has the ability to originate, receive and otherwise control calls on each of these address appearances. These address appearances behave independently of one and other.	**MAA/ Keyset**
MSA Shared line type	Multiple Station Appearance provides the ability for the same address (e.g. telephone number, DNS name, URL) to appear on multiple telephones. Users at each telephone may be provided with the ability to make, answer, share and otherwise manipulate calls on the affected telephones.	**MLA/ MSA**

The main difference is the usage of the term “Multiple Line Appearance” Unify uses MLA for MSA too, whereas TIA uses MLA together with MAA.

MAA is a Mutliline Appearance with private lines only.
MSA is a Multiline Appearance with shared lines.

This document uses MLA as a synonym for MSA. Keyset is a synonym for MAA

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1. Scope

This document specifies the Multiple Address Appearance (MAA) interface and configuration between an OpenStage SIP phone and a SIP based communication server like Asterisk.

A line is identified by an AoR SIP URI and typically corresponds to a user. A line can appear on one or multiple clients, Multiple Line Appearance (MLA), which in SIP terms means that each client registers as a contact for the AoR concerned. A line that appears on multiple clients is known as a shared line. The representation of a line on a given client is known as an appearance. The appearance at the client normally used by the user of the line is known as the primary appearance and appearances at other clients are known as secondary appearances. Figure 1 shows an example of a shared line with multiple appearances.

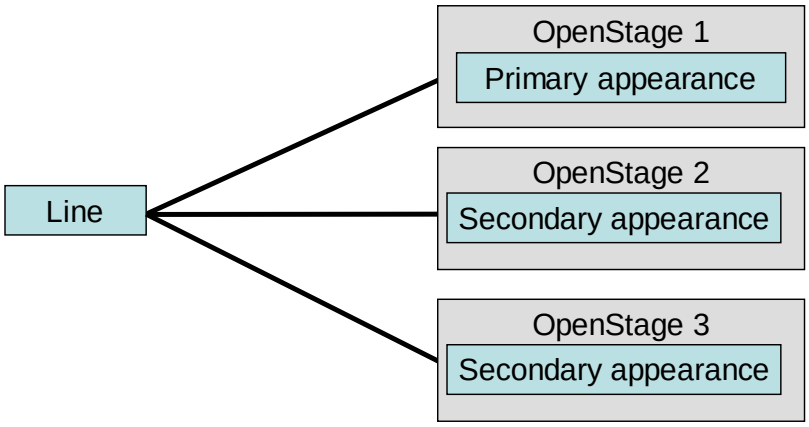


Figure 1: A shared line with multiple line appearances

A given client, when configured as a keyset, can support multiple lines, also called Multiple Address Appearance (MAA). For each line it supports it will have a single appearance of that line. From the point of view of such a client, a primary appearance of a line on that client is known as a primary line and a secondary appearance of a line on that client is known as a secondary line. At present for OpenStage SIP phones the following restrictions apply:

- Each client must have one and only one primary line;
- A client must not have more than one appearance of the same line.

Figure 2 shows an example for an OpenStage phone with three addresses configured. Line 1 is the primary line, all other lines are secondary lines.

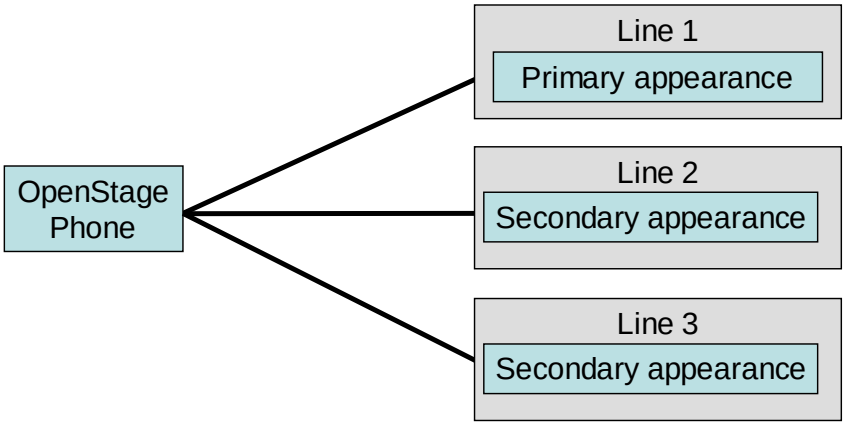


Figure 2: A phone with multiple address appearance

A client configured as a keyset need not have any secondary lines, in which case it has only a single line (the primary line). A client can be configured with a private line, which is not shared, i.e., it has only a single appearance. The fact that a client is configured with more than one line or is configured with a single line that is a shared line makes the client a keyset, as opposed to an ordinary single userphone, for the purposes of this specification.

NOTE.

1. A client could be configured with only a single line, that line being a private line. A client configured in this way would not make use of any of the special keyset signalling capabilities defined in this specification, even though from the client's perspective it may differ from a single line non-keyset device (e.g., user interface or configuration differences).
2. The Asterisk communication system does not support the OpenStage shared multiline signalling features and Unify will not provide any support to this proprietary protocol enhancement. Therefore the configuration for private lines is taken into account only and this document is restricted to MAA only.

2. Functional Overview

Motivation

A telephone is normally associated with a directory number (or in general with SIP: AoR). This number is used for placing calls to this telephone and for displaying the telephone's (user's) identity when placing calls to another party. This number is also used when more than one call appearance is supported due to additional features like call waiting.

A keyset denotes a telephone that is associated with more than one number - this allows a given telephone to act on behalf of different phone numbers (users). Just like with traditional telephony systems, people sometimes refer to lines instead of numbers, hence keyset phones are also referred to as multiline phones. The main line (i.e. the line/directory number for user associated with a given physical telephone) is called primary line, whereas all other lines that can be handled on other phones are denoted as secondary lines. Call Log and MWI are working for the primary line only and not for secondary lines. Sharing of lines is possible, but as mentioned before not in the focus of this document.

At any given time, one telephone can handle only one call appearance for connecting to the handset, and the same applies to keyset / multiline telephones. Also for keyset telephones, features like call waiting can increase the number of call appearances that can be handled, but on a keyset telephone, these appearances may refer to different lines / numbers / users. The programmable feature keys are used for handling the lines and their respective call appearances, supported by the associated LEDs reflecting the line/call status. The number of lines that can be configured is depending on the phone model.

This feature can be used for different use cases. Example use cases are:

- Address multiple users at one phone.
- Enhanced Call Hold Scenarios
- Allow more than two incoming calls at one phone

This feature can not be used for different use cases. Example use cases are:

- MLA. If the line is configured at more than one phone incoming calls are sent to the last registered device
- Line status observation. If the same line is configured at more than one phone the line status is not presented at these phones.

Depending on the selected system, a specific set of additional features for handling call appearances is available (e.g. placing calls on hold).

Similar features are named Bridged Line Appearance (BLA) and Shared Call Appearance (SCA).

3. User Experience

MAA is automatically activated, if the phone has line keys configured. The line key administration is done from the Administrator. The user has no influence to these settings. The phone works 'out of the box' as MAA phone. Depending from the administrator settings the phone will react slightly different in basic user interactions. The document will outline these differences depending to the according administrator setting.

Even if only one line key is configured, the phone changes into the line presentation mode. The line presentation mode helps the user to keep track on the different line status. For OpenStage 60/80 up to 30 lines can be configured. OpenStage 15/20/40 are limited to 18 lines.

3.1. Basic Representation

If an OpenStage phone is configured as MAA phone the basic appearance is changing. A new line is introduced into the idle screen representing the line overview mode. The tab shows the status of the primary, line (My phone) and the Overview Tab showing the current status of the users managed on the phone. If a line is used, an additional tab per line can be shown.

A single User line is always represented with a preconfigured FPK. The FPK label fits to the Line overview entry and line overview tab name, the FPK LED status fits to the icon displayed in the line overview table.

The user can change between the different tabs using the phone home key of the 'left arrow' key. This toggles between the different tabs. The tabs are cycled to toggling can be done in an endless loop.

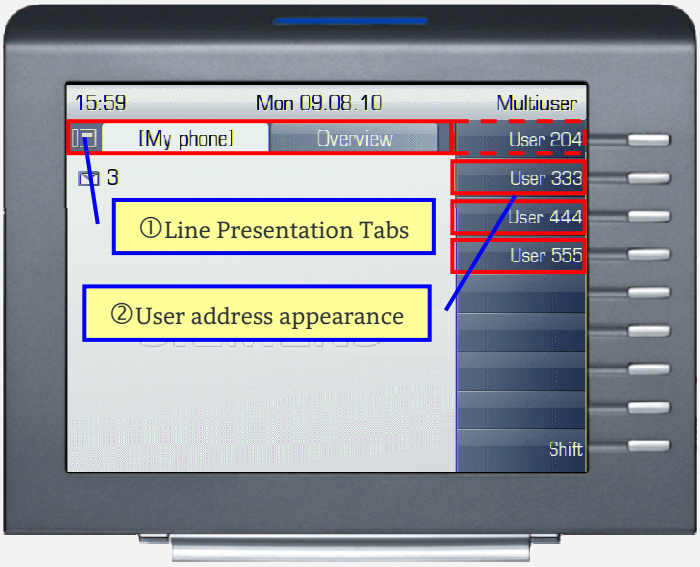
Multiple Address representation is adapted to the limited resources of the phone. Although the phone is able to manage the phone call for many users it still have only one audio input and output device, storage for one Call log and one MWI button/LED.

Therefore one line is outstanding. This line, called **'primary line'** is bound to the local call log and MWI indication. The primary line has always an own line overview screen called **(My Phone)** in idle state. It contains the information about missed calls and MWI. Each MAA phone must have one and only one primary line defined. Each other user lines are secondary or private lines and treated equally.

The example pictures used in this document are using always the same configuration:

Label	Number	Line Type
User 204	204	Primary line
User 333	333	Secondary line
User 444	444	Secondary line
User 555	555	Secondary line

MWI and Call Log are used for User 204, which is the prime line



OpenStage Idle Screen for MAA.
The idle screen contains the additional line management row. Navigation between the different tabs can be done using the phone application button or the left arrow key on the TouchGuide.
The lines are represented by the FPK keys on the right hand side starting with the primary line key on top.

Line overview tab:
The overview tab shows the current status from the managed lines. The icon on the left gives the status (e.g. idle, hold, talk) The line label is displayed right hand side of the icon.

Line Management Navigation
The user has two possibilities to navigate between the tabs in the line tab navigation:´

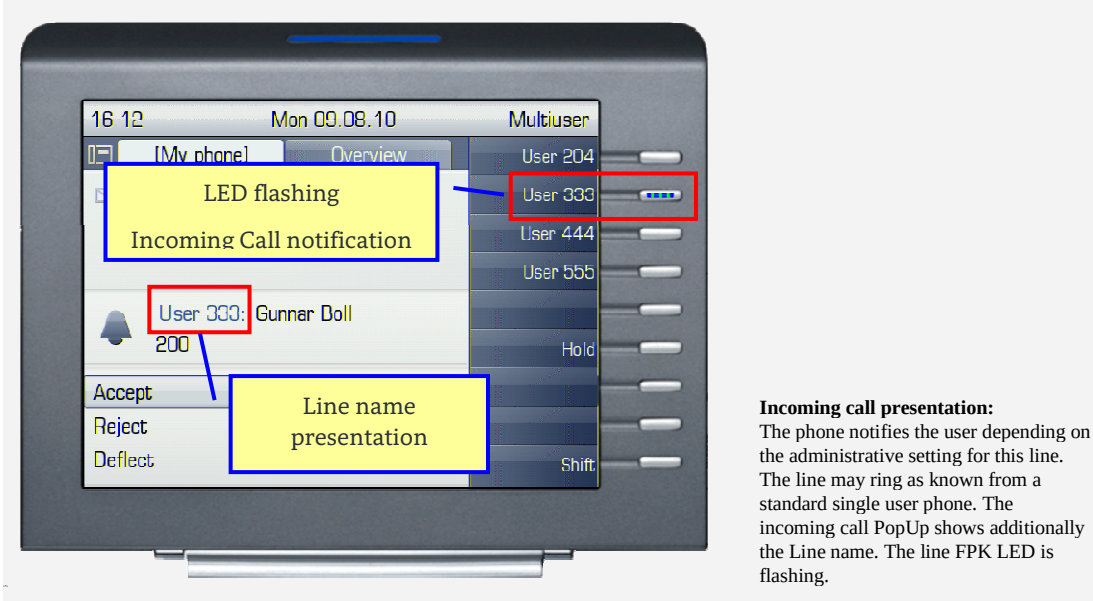
- Press the phone mode key to toggle between the different tabs
- Press the 'left' error key to navigate between the different tabs.

The OpenStage 40 do not have an home mode key. Therefore navigation using the left arrow key is possible only.

3.2. Making Calls with multiple lines

Incoming call

Incoming calls are notified as known from a single user phone. Additional information about the affected line is shown in the incoming call popup and the line FPK LED. The user can pick up the call using the standard mechanism, additionally the line key can be used to pick up the call by a single press. (Two key presses are needed, if the key is configured to 'Preselect mode'.



Incoming call presentation:
The phone notifies the user depending on the administrative setting for this line. The line may ring as known from a standard single user phone. The incoming call PopUp shows additionally the Line name. The line FPK LED is flashing.

The phone behaviour for multiple incoming calls depends on the administrative setting. See '**Terminating line preference**' for seizing lines.

Making calls

In a single user scenario the phone will always use the configured user number to make an outgoing call. In a multi user scenario the phone must know which user number should be taken and the line must be seized. The line seizure can be done manually or automatically. The phone behaviour depends on the administrative configuration. See '**Originating line preference**' for more details.

Use cases for manual line seizure:

1. Standard procedure
    a. User picks up the handset
    b. Phone asks to select the outgoing line
    c. User presses the line key
    d. Outgoing call popup is shown
    e. User dials the number
2. Line key seizure
    a. User presses the line key
    b. Outgoing call popup is shown
    c. User dials the number
3. Using Line Overview
    a. User goes to line overview tab
    b. User selects one line for the outgoing call by pressing the 'ok' button or using the context menu
    c. Outgoing call popup is shown
    d. User dials the number

The phone can be configured by the administrator to select automatically the outgoing line, if the user initiates an outgoing call.

1. **Idle line**
   The phone will use the next available idle line. Lines are configured with a priority order. The phone will use the order to use the next free line.
2. **Primary**
   The phone will use the primary line to set up the outgoing call. If the primary line is blocked, the phone will show a reminder popup, that no outgoing line is available.
3. **last**
   The phone will use the last line, which was taken for the previous in- or outgoing call. If the last line is already in use, the phone will show a reminder popup, that no outgoing line is available.
4. **none**
   This setting is used to enable manual seizure. The user is asked to select the outgoing line.

Dialing the last dialed number

The last dialed number is displayed in the outgoing call popup. The number shown in this popup is always the last dialed number of the private line. Calls done with secondary line are not recorded in call log and not presented as last dialed number.

Call Forwarding

The call forwarding can only be activated for the primary line. If a call forward for secondary lines should be performed a central switch feature accessed via stimulus feature key must be set.

Putting a line on manual hold

An existing Call can be put on hold. Additional to the standard mechanism the line key can be used to put the call for this line on hold, if the Administrator has set the '**Line action mode** ' setting accordingly. A flashing LED is indicating the held call with specific cadence. If the line key is pressed again a held call will be retrieved.

Remark: The call status per line can also be seen on the line overview screen

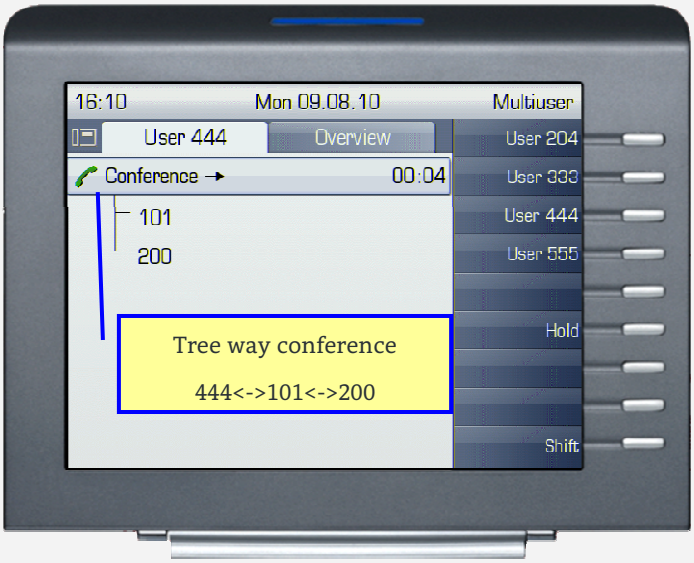
Warning: In difference to a single user phone the held call is not shown in the phone screen. This might confuse the user knowing the behaviour of a single user phone.

Within a MAA scenario a held call releases the phone audio resources again and it can be used to make calls from other lines. Therefore the phone switches back to idle screen, if the existing call is put on hold by the user. The flashing line

led and the line overview are the only indications that call is on hold. The phone will not remind the user that a call is still on hold after some time. In keyset mode this is determined by the hold timer at the switch (OSV). This feature is for single user phones only.

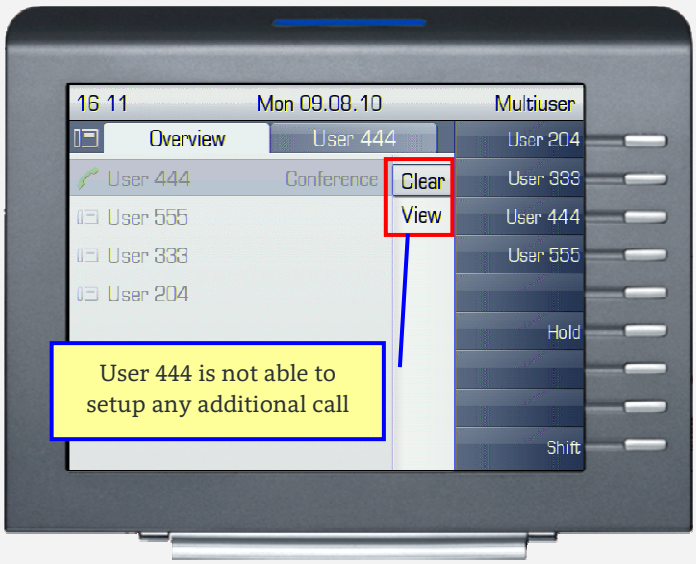
Resource Handling

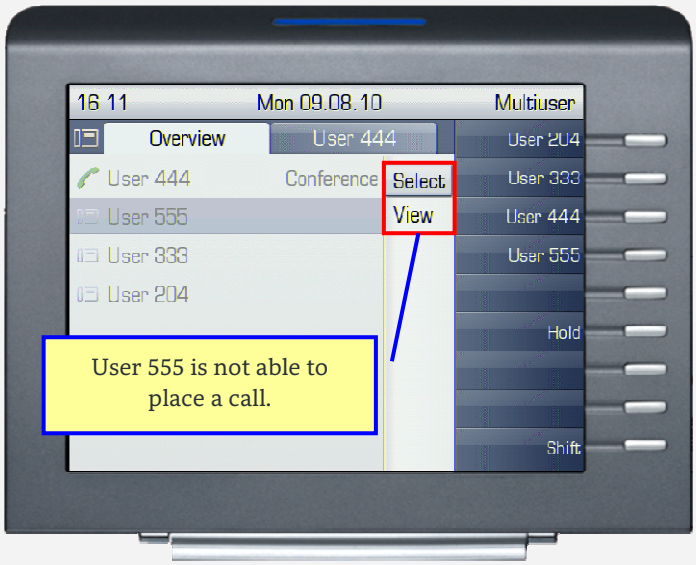
The phone can handle multiple simultaneous calls but can only handle a maximum of 2 Streaming calls (for local conference as indicated below). If the resources are exhausted no further call can be set up and the phone will deny any further requests. Here is an example for a three way conference.



Conference View for 444:
User 444 has set up a 3 way conference between 444, 101 and 200.

Context view for 444:
The phone offers no option to add an additional participant to the conference as the maximum number of local conference participants is exceeded.



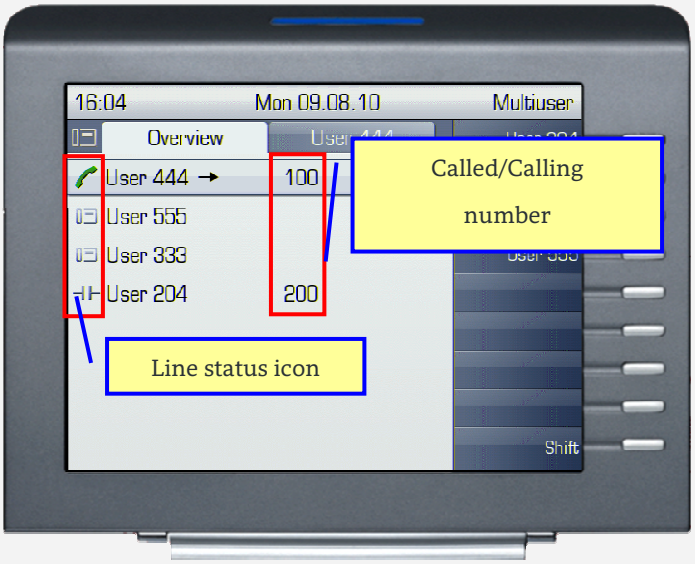


Context view for 555:
The phone blocks any other call attempts from different users until the resources are available again.

User Interface Examples

The following examples give an impression about the powerful line/user handling of the OpenStage phone.

Line Overview Table

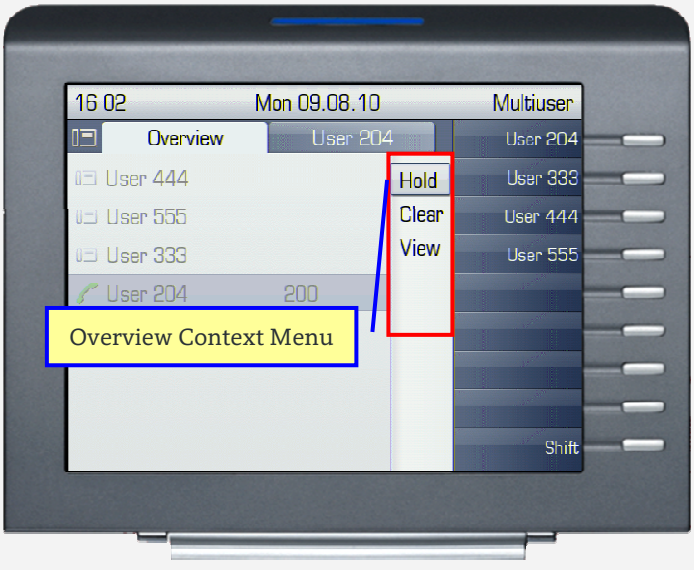


Line Overview Tab
The line overview table gives a quick and easy overview about the status of the configured lines.
On the right hand side the other party is displayed..

Call Options in the Context Menu

Call Context menu:
The call context menu is always adapted to the current call status of a used line. It is inline with the menu of a single user telephone and presents a set of options available for the current user/line.

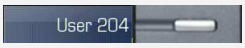
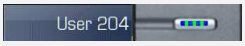
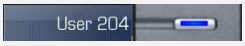
Call Options in the Overview Menu



Overview Context Menu:
The overview context menu offers a subset of the call context menu. The subset consist of the most used functions within a call and the view option to switch the call view of this call.

3.3. LED Status Overview

The LED shows at any time the current states of the represented line.

LED	Explanation
	**Off:** The line is in idle mode
	Flashing: Hold reminder is activated Incoming call on the line
	**Flickering:** Outgoing call on the line
	Fast blinking Line is in ringing
	Blinking Call forward is activated
	**Illuminated:** The line is busy

3.4. User Configuration Items

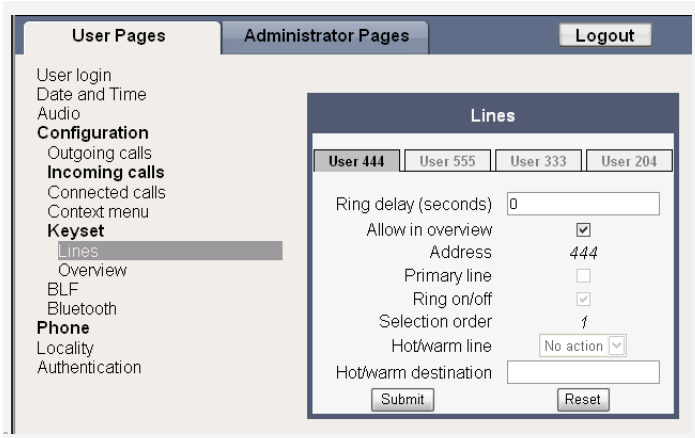
The user is able to influence the phone behaviour about the line and the overview presentation. It can be configured to accomplish the users personal need.

Lines Configuration Menu

The menu can be reached using the Web Based Management (WBM) or the local user menu at the phone. The location is:

User -> Configuration -> Keyset -> Lines

WPI [4] tags are available for these settings too.



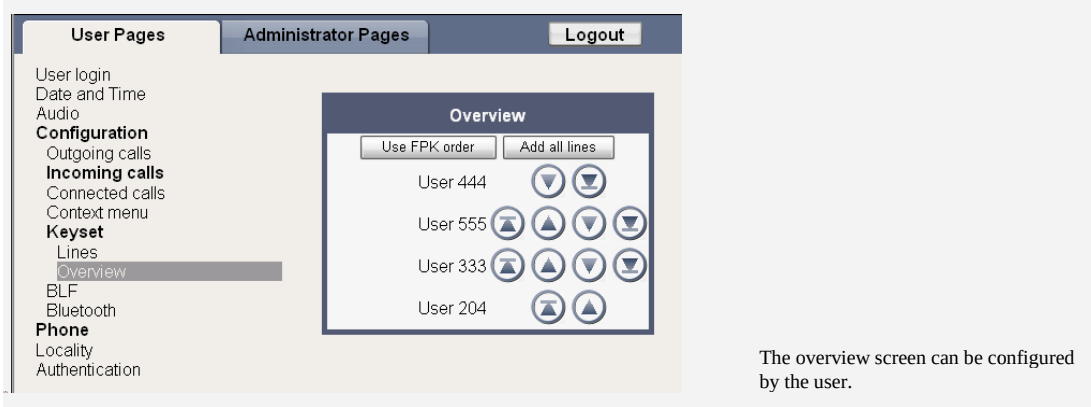
User Line Key Configuration
The keyset line configuration can be done for every line. Each line has an own tab with the same parameters.

Parameter	Meaning
Ring delay (seconds)	Number of seconds until the phone will play the ringing tone for an incoming call.
Allow in overview	If checked, the line will be shown in the overview table
Address	Administrated address (fixed)
Primary line	Line status (fixed)
Ring on/off	If checked a ringer tone is played for incoming calls. (fixed)
Selection Order	Used for outgoing calls if idle lines are selected automatically
Hot/warm line	Not used in this context. (fixed)
Hot/warm destination	Not used in this context. (fixed)

Overview Configuration Menu

The menu can be reached using the Web Based Management (WBM) or the local user menu at the phone. The location is:

User -> Configuration -> Keyset -> Overview



The overview screen can be configured by the user.

Parameter	Meaning
Use FPK order	The phone will order the line entries in the overview table according to the order of the configured FPKs
Add all lines	All lines are added to the overview table
Ordering icons	The icons can be used to order the line entries suitable to the users needs

4. Administrative Options

The MAA is a subset of the Unify proprietary MLA. Therefore the administrative settings are used in both scenarios. The explained configuration parameters are reduced to the MAA needed settings. A deviating usage of the parameter will enable the MLA, which is only supported by the Unify OpenScape Voice platform.

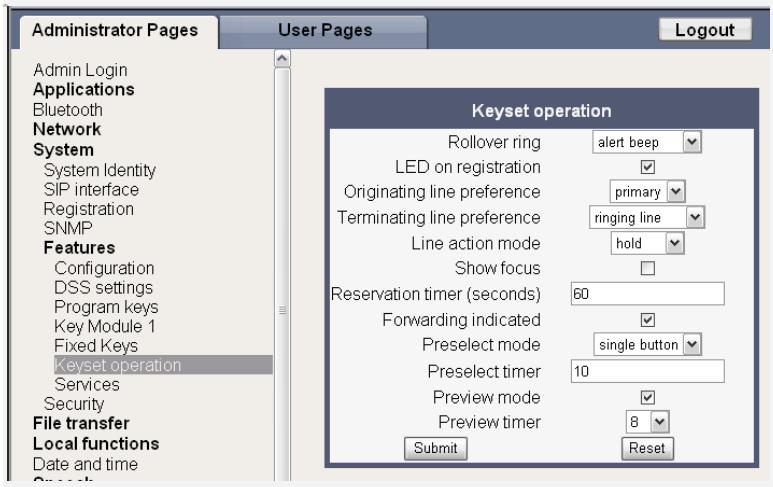
There are two sets of options

- A general set of options affecting all type of configured line keys. These options are used, when at least one FKP is configured as (primary) line key.
- A set of options per line key. These options are specifying the behaviour of the specific line key and do not have a general purpose. Each line key can have different settings.

4.1. General Keyset Options

WBM Configuration:

Admin -> System -> Features -> Keyset operation.



General Keyset Options:
The options can be set via WBM, WPI und local phone admin.

The following parameters provide general settings which are common for all keyset lines. The **Rollover ring** setting will be used when, during an active call, an incoming call arrives on a different line.

- **"no ring"**: The incoming call will not initiate a ring.
- **"alert ring"**: A 3 seconds burst of the configured ring tone is activated on an incoming call;
- **"alert beep"**: A beep is played in the current call instead of a ring tone.
- **"standard ring"**: Selects the default ringer.

LED on registration determines whether the line LEDs will be lit for a few seconds if they have been registered successfully with the SIP server on phone startup.

The **Originating line preference** parameter determines which line will be used when the user goes off-hook or starts on-hook dialling.

Remark: When a terminating call exists, the terminating line preference takes priority over originating line preference.

The following preferences can be configured:

- **"idle line"**: An idle line is selected. The selection is based on the Hunt ranking parameter assigned to each line ("Line key configuration"). If all available lines are used a PopUp is shown for further outgoing calls indicating, that no further line is available.
- **"primary"**: The designated Primary Line/Main DN is always selected for originating calls. If the primary line is already used a PopUp is shown for further outgoing calls indicating, that no further line is available, even if other lines are configured and available. In this case the user has to select manually the line for the outgoing call.
- **"last"**: The line selected for originating calls is the line that has been used for the last call (originating or terminating). If the last line is already in use a PopUp is shown for further outgoing calls indicating, that no further line is available even if other lines are configured. In this case the user has to select manually the line for the outgoing call.
- **"none"**: The user manually selects a line by pressing its line key before going off-hook, or by pressing the speaker key, to originate a call. Manual line selection overrides automatic line preferences.

The **Terminating line preference** parameter decides which terminating line, i. e. line with an incoming call, is selected when the user goes off-hook.

The following preferences can be configured:

- **"ringing line"**: The line in the alerting or audible ringing state is automatically selected when the user goes off-hook. In the case of multiple lines alerting or ringing, the lines are selected on the one that has been alerting the longest.
- **"ringing PLP"**: The line in the alerting or audible ringing state is automatically selected when the user goes off-hook. However, if the prime line is alerting, it is given priority.

- **"incoming"**: The earliest line to start audible ringing is selected, or else the earliest alerting (ringing suppression ignored) line is selected.
- **"incoming PLP"**: The earliest line to start audible ringing is selected, or else the earliest alerting (ringing suppression ignored) line is selected. However, if the prime line is alerting, it is given priority.
- **"none"**: To answer a call, the user manually selects a line by pressing its line key before going off-hook, or by pressing the speaker key. Manual line selection overrides automatic line preferences.

Line action mode determines the consequence for an established connection when the line key is pressed. If "hold" is selected, the call currently active is set to hold as soon as the line key is activated. The user has two options: 1) to reconnect to the remote phone by pressing the line key that corresponds to that call, or 2) to initiate another call from the newly selected line. If "release" is selected, the previously established call is ended.

If **Show Focus** is checked, the LED of a line key flutters when the line is in use. If it is not checked, the line key is lit steady when it is in use.

The **Reservation timer** sets the period after which the reservation of a line is canceled. A line is automatically reserved for the keyset whenever the user has selected a line for an outgoing call and hears a dial tone. If set to 0, the reservation timer is deactivated. This also determines if the phone requests line seizure from the switch or not (i.e. 0).

Forward indication activates or deactivates the indication of station forwarding, i. e. the forwarding function of OpenScape Voice. If **Forward indication** is activated and station forwarding is active for the corresponding line, the LED of the line key blinks.

Preselect mode determines the phone's behaviour when a call is active, and another call is ringing. If the parameter is set to "Single button", the user can accept the call a single press on the line key. If it is set to "Preselection", the user must first press the line key to select it and then press it a second time to accept the call. In both cases, the options for a ringing call are presented to the user: "Accept", "Reject", "Deflect".

Preselect timer sets the timeout for an incoming call. After the timeout has expired, the call is

no longer available.

With firmware V2, call bridging is available. When **Bridging enabled** is activated, the user may join into an existing call on a shared line by pressing the corresponding line key. On key press, the OpenScape Voice builds a server based conference from the existing call parties and the user. If the call has already been in a server based conference, the user is added to this conference.

Remark: When bridging shall be used, it is highly recommended to configure the phone for a system based conferece (see Section 3.6.9, "System Based Conference"). This enables adding more users to a system based conference that has been initiated by bridging. This is a shared line only feature and not relevant for the MAA scenario.

Line Preview

The line preview settings are related to a specific FPK function. This FPK function enables the preview mode, which allows the user to preview a line before using it. When preview mode is active, the line keys behave similar to when the keyset configuration is set to preselection for line keys (see Section 3.9.2, "Configure Keyset Operation"). On pressing

the line key (not DSS key!), the call activity on the corresponding line is shown. Unlike with a preselected line, there will be no change to the phone's current line connections. The LED indicates whether line preview is active or not.

The information shown to the user depends on the ring/alert configuration for the line in question. If the line is configured to alert only, the preview will only show the state of the call, not the identity of the call party. If the line is configured to ring, the identitiy of the call party will be revealed.

The preview mode can be configured as temporary or as permanent. If System > Features > Keyset operation > **Preview mode** is disabled, preview mode will end when the user uses the previewed line, or a new call is started in any other way, or if the focus is changed away from call view. If the parameter is enabled, preview mode remains active until the user cancels it by pressing the key again.

The **Preview timer** parameter determines the timespan during which the line preview will remain on the screen.

A dedicated line preview FPK can be administrated.

Administration via WBM

System > Features > Program keys > Preview

Data required

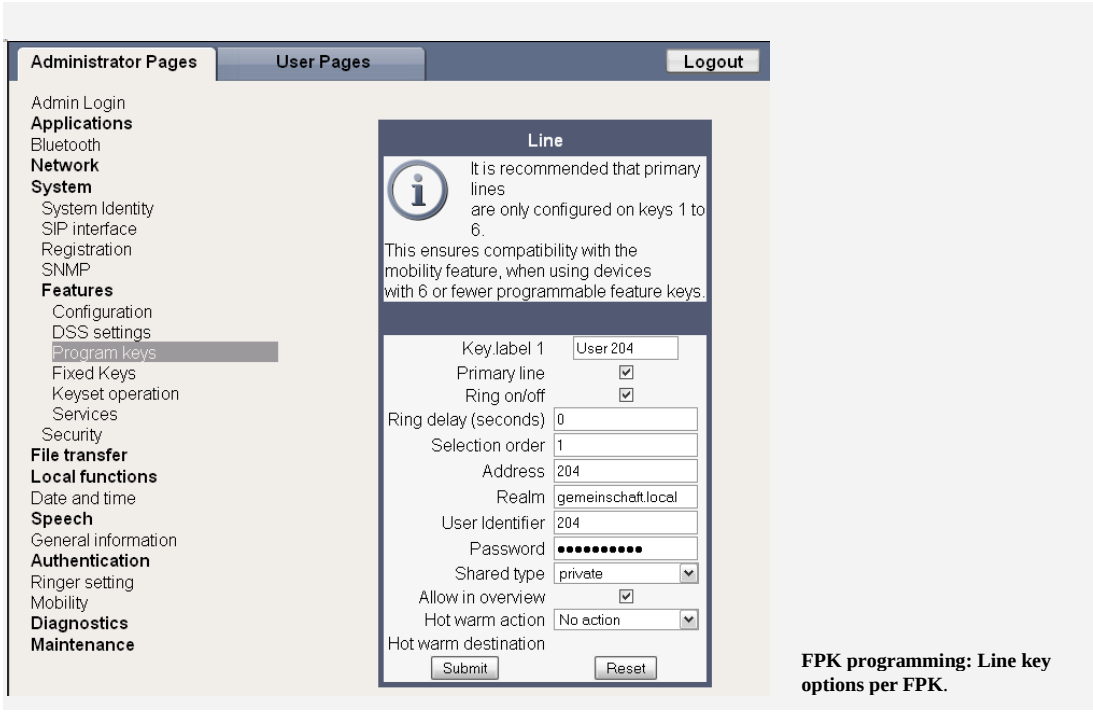
- Rollover ring: Determines if a ring tone will signal an incoming call while a call is active.
- Value range: "No ring", "Alert beep", "Alert ring"
  Default: "Alert beep"
- LED on registration: Determines if line LEDs will signal SIP registration. Value range: "Yes", "No"
  Default: "Yes"
- Originating line preference: Selects the line to be used for outgoing calls. Value range: "Idle line", "Primary", "Last", "None"
  Default: "Idle line"
- Terminating line preference: Determines which line with an incoming call shall be selected for answering.
  Value range: "Ringing line", "Incoming", "Incoming PLP", "Ringing PLP", "None"
  Default: "Idle line"
- Line action mode: Determines the consequence for an established connection when the line key is pressed.
  Value range: "Hold", "Release"
  Default: "Hold"
- Show focus: Determines whether the line key LED blinks or is steady when it is in use. Value range: "Yes", "No"
  Default: "Yes"
- Reservation timer: Sets the period in seconds after which a line reservation is cancelled. If set to 0, the reservation timer is deactivated.
  Default: 60
- Forward indication: Activates or deactivates the indication of station forwarding. Value range: "Yes", "No"
  Default: "No"

- Preselect mode: Determines whether an incoming call is accepted by a single press on the corresponding line key or a double press is needed. Value range: "Single button", "Preselection"
  Default: "Single button"
- Preselect timer: Sets the timeout in seconds for accepting an incoming call.
- Bridging enabled (V2): When set to "Yes", the user is allowed to join a call on a shared line. For this purpose, a server based conference is established. Not relevant for MAA.

4.2. FPK line key programming

WBM configuration:

Invoke the "Phone keys" dialog and select "line" in the pulldown menu of the key you want to configure. Next, press "Edit...".



FPK programming: Line key options per FPK.

Remark: It is recommended to configure primary lines only on keys 1 to 6, or 1 to 5, if a shift key is needed. This ensures that the lines are still accessible when the user migrates to a different phone with fewer keys via an optional mobility feature (e.g. OpenStage 40).

A line corresponds to a SIP address of record (AoR), which can have a form similar to an Email address, or can be a phone number. It is defined by the Address of record parameter. For registration of the line, a corresponding entry must exist on the SIP server.

A label can be assigned to the line key by setting its **Key label**.

Every keyset must necessarily have a line key for the primary line. To configure the key of the primary line, set **Primary line** to "true". Only one single line can be the primary line. Enabling the primary line option will disable a possibly previous configured primary line.

If **Ring on/off** is checked, the line will ring when an incoming call occurs, and a popup will appear on the display. If the option is not checked, the incoming call will be indicated only by the blinking of the key's LED. If it is desired that the line ring with a delay, the time interval in seconds can be configured by **Ring delay**.

When the user lifts the handset in order to initiate a call, the line to be used is determined by selection rules. To each line, a priority is assigned by **the Selection order** parameter. A line with the rank 1 is the first line to be considered for use. If more than one lines have the same rank, the selection is made according to the key number. Note that Selection order is a mandatory setting; it is also used in the Terminating line preference, as well as in other functions.

The **Address** (Address of Record) parameter gives is the phone number resp. SIP name corresponding to the entry in the SIP registrar at which the line is to be registered. The phone will register each line with 'Address@Registrar'.

Remark: For the configuration of line keys, the use of the WPI (Workpoint Interface) [4] is recommended. For operating the WPI, please refer to the WPI developer's guide. Alternatively, the web interface or the local menu can be used. Note that the creation of a new line key and the configuration of some parameters can not be accomplished by the phone's local menu.

Generally, it is advisable to restrict the user's possibilities to modify line keys. This can be achieved solely by the WPI. For further instructions, see the WPI developer's guide.

The **Realm**, a protection domain used for authenticated access to the SIP server, works as a name space. Any combination of user id and password is meaningful only within the realm it is assigned to. If the Realm is not set by admin, the phone will set the Realm automatically after the first successful registration. The other parameters necessary for authenticated access are **User Identifier** and **Password**. For all three parameters, there must be corresponding entries on the SIP server.

The **Shared type** parameter determines whether the line is a shared line, i. e. shared with other endpoints, or a private line, i .e. available exclusively for this endpoint. A line that is configured as primary line on one phone can be configured as secondary line on other phones. The MAA environment is restricted to private lines. Therefore **the option must be set to 'private' in this case**.

When **Allow in Overview** is set to "Yes", the line can be visible in the line overview on the phone's display.

With firmware V2, hot/warm line functionality is available. If a line is configured as hot line, the number indicated in **Hot warm destination** is dialled immediately when the user goes off-hook. This number is configured in the user menu under **Configuration > Keyset > Lines > Hot/warm destination**. To create a hot line, Hot warm action must be set to "hot line". If set to "Warm phone", the specified destination number is dialled after a delay which is defined in **Initial digit timer (seconds)** (for details, see Section 3.6.3, "Initial Digit Timer"). During the delay period, the user can dial a number which will be used instead of the hot/warm line destination. In addition, the user will be provided with a dial

tone during the delay period. With the setting "No action", the line key will not have hot line or warm line functionality. As the hotline/warmline function is used in special scenarios only it's recommended not to use this option in MAA environments in general.

Data required

- **Key label <n>:** Set the label of the line key with the key number <n>.
  Default: "Line"
- **Primary line**: Determines whether the line is the primary line. Value range: "Yes", "No"
  Default: "No"
- **Ring on/off**: Determines whether the line rings on an incoming call. Value range: "On", "Off"
  Default: "On"
- **Ring delay**: Time interval in seconds after which the line starts ringing on an incoming call.
  Default: 0
- **Selection order**: Priority assigned to the line for the selection of an outgoing line.
  Default: 0
- **Address**: Address/phone number which has a corresponding entry on the SIP server/registrar.
- **Realm**: Domain wherein user id and password are valid.
- **User Identifier**: User name for authentication with the SIP server.
- **Password**: Password for authentication with the SIP server.
- **Shared type**: Determines whether the line is a shared line (shared by multiple endpoints) or a private line (only available for this endpoint). Value range: "shared", "private", "unknown".
  Default: "shared"
- **Hot/Warm line type**: Determines whether the line is a hot line or a warm line. Value range: „hot line", „warm line"
- **Hot/Warm line destination**: Number to be dialed when the phone is in hotline or warmline mode.
- **Allow in Overview**: Determines whether the line appears in the phone's line overview. Value range: "Yes", "No"
  Default: "Yes"
- **Hot warm action (V2)**: Determines if the line is a regular line, a hot line, or a warm line. Value range: "No action", "hot line", "warm line"
- **Hot warm destination (V2)**: The destination to be dialed from the hot/warm line when the user goes off-hook.

Remark: A new line key can only be added by use of the WBM or, preferably, using the WPI [4]. Once a line key exists, it can also be configured by the local menu.

5. Limitations

When OpenStage is configured as a keyset device with multiple lines then uaCSTA services can only be applied to the prime line of the OpenStage device, secondary lines cannot be controlled using the uaCSTA interface.

When invoking call related services (E.g. AnswerCall) and physical devices services (E.g. SetMicrophoneMute) it is the OpenStage device which decides which call or speaker the service request is applied to.

6. References

[1] TIA-811-A: Performance and Interoperability Requirements for Voice-over-IP (VoIP) Feature Telephones (http://www.tiaonline.org/all-standards/committees/TR-41)
[2] Session Initiation Protocol (SIP)-Specific Event Notification (RFC 3261)
[3] OpenStage Admin Guide (http://wiki.unify.com/images/1/1b/Administration_Manual_OpenStage_OpenScape_Voice.pdf)
[4] WPI Guide (http://wiki.unify.com/images/c/c7/OpenStage_Provisioning_Interface_Developer%27s_Guide.pdf)

7. Abbreviations

AoR	Address of Record
MAA	Multiple Address Appearance
MSA	Multiple Station Appearance
MLA	Multiple Line Appearance
SIP	Session Initiation Protocol
UA	User Agent
MWI	Message Waiting Indication
BLA	Bridged Line Appearance
SCA	Shared Call Appearance

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