

Using Enhanced Feature Keys and Configurable Soft Keys on SoundPoint® IP, SoundStation® IP, and VVX® 1500 Phones

This technical bulletin provides detailed information on how to set up enhanced feature keys and configurable soft keys with any call server.

This information applies to SoundPoint IP phones running SIP application version 3.1 or later. This information applies to SoundStation IP phones running UC Software version 3.3.0 or later. This information applies to VVX 1500 phones running SIP 3.1.2RevB or later. This technical bulletin is up-to-date for UC Software 3.3.0.

This technical bulletin contains information on:

- [Enhanced Feature Key Overview](#)
- [Configurable Soft Keys](#)
- [Testing and Troubleshooting Tips](#)

Enhanced Feature Key Overview

Enhanced Feature Keys provide a method of creating interactive call sequences that will be executed by the phone.

The 'interactivity' consists of the following elements:

1. Gather input from the phone's user
2. Send SIP signaling requests to a call server (INVITE or REFER)
3. Cause the phone to perform certain operations (for example, hang-up a call, place a call on hold)
4. Emulate a key press on the phone
5. Invoke the phone's Microbrowser to access an XHTML URI (for example, set `action.string` to "`http://leo/test/menu.xhtml`")

A macro language is used to define these actions. Details of this macro language are documented in the "Enhance Feature Keys" section of the *Administrator's Guide for Polycom UC Software*, which is available at <http://www.polycom.com/support/voip/>.

These macros may be utilized in a number of methods:

- By defining an Enhanced Feature Key macro using the `efklist` parameters
- Directly as part of a speed-dial entry
- Directly as part of a 'soft key' configuration

Use of the `efklist` to define the macros is optional. Using this method is useful when a macro may be used for more than one 'soft key' or speed-dial definition.

The `efkprompt` parameter must be used if interactivity with the user is implemented as part of any macros.

***Note:** The feature flag, `feature.enhancedFeatureKeys.enabled`, must be set to 1 to use the Enhanced Feature Key and Configurable Soft Key features.*

Configurable Soft Keys

Soft key configuration may be used by the phone's system administrator to customize the usage of the soft keys on the phone to best suit the needs of their users.

This soft key configuration has two parts:

- Adding new soft keys that use the Enhanced Feature Key capability to simplify the operation of common telephony tasks that might take more than one button press with the 'default' configuration.
- Removing certain 'default' soft keys defined by Polycom for functions that may be redundant or never used

To assist system administrators in configuring common features, some example configuration files for soft key configuration are attached to this technical bulletin.)

Example 1 – Simplifying Commonly Used Telephony Features

***Note:** For this example, refer to `EFK-SoftKey1.cfg` and `SoftKey1-directory.xml` (rename to `<mac-address>-directory.xml` to configure). To use these files, change the example star codes to the star codes used by your call server for the appropriate feature.*

This example might apply when the phone user has the following use characteristics:

- Uses the handset predominantly for making phone calls (and does not need **New Call** and **End Call** soft keys)
- Uses Call Park, Pick-Up, Retrieve features using '* code' sequences
- Frequently sends call directly to another person's Voice Mail
- Makes frequent Conference Calls to a specific bridge number
- Uses Push To Talk (PTT)/Intercom communication with close business associates
- Needs easy access to call lists in many call states
- Desires single-button Blind Transfer capability

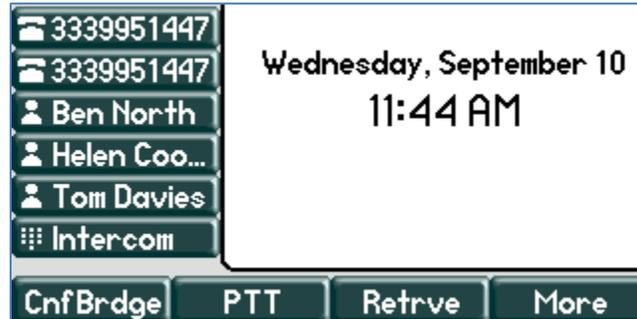
The attached configuration file contains the necessary configuration to implement nine Enhanced Feature Key functions as soft keys and one (Intercom) as a speed-dial. The `directory.xml` file is required to configure features as speed dial keys.

The following 'standard Polycom' features were disabled for this example:

- Redundant Call management keys (softkey.feature.basicCallManagement.redndant="0")
- Buddies (softkey.feature.buddies="0")
- Callers (softkey.feature.callers="0")
- Directories (softkey.feature.directories="0")
- End Call (softkey.feature.endcall="0")
- Forward (softkey.feature.forward="0")
- My Status (softkey.feature.mystatus="0")
- New Call (softkey.feature.newcall="0")

The following screen shots show the phone UI in different states (idle, active, alerting, dial tone, setup, hold, and proceeding) when configured with the sample Enhanced Feature Key configuration file:

Idle State



If you press the **More** soft key, the following screen appears:



Active State

One active call

▶ 3339951447	From:Helen Cooper	
☎ 3339951447	1442 0:07	
👤 Ben North		
👤 Helen Coo...		
👤 Tom Davies		
☰ Intercom	Wed, Sep 10 11:45 AM	
Park	BlindX	SendVM

One active call and one call on hold

☎ 3339951447	From:Ben North		
▶ 3339951447	1441 0:30		
👤 Ben North			
👤 Helen Coo...			
👤 Tom Davies			
☰ Intercom	Wed, Sep 10 11:47 AM		
Park	BlindX	Join	SendVM

Alerting State

▶ 3339951447	From:Helen Cooper		
☎ 3339951447	1442		
👤 Ben North			
👤 Helen Coo...			
👤 Tom Davies			
☰ Intercom	Wed, Sep 10 11:50 AM		
Answer	Reject	Forward	Call List

Dial Tone State

◀ 3339951447	
☎ 3339951447	
👤 Ben North	
👤 Helen Coo...	
👤 Tom Davies	
☰ Intercom	Enter number
CnfBrdge	Call List

Setup State

3339951447	123
3339951447	
Ben North	
Helen Co...	
Tom Davies	
Intercom	Enter number
Send	Call List

Hold State

3339951447	Hold:Helen Cooper		
3339951447	1442 0:48		
Ben North			
Helen Co...			
Tom Davies			
Intercom	Wed, Sep 10 11 46 AM		
Park	BlindX	Resume	More

3339951447	Hold:Helen Cooper		
3339951447	1442 1:17		
Ben North			
Helen Co...			
Tom Davies			
Intercom	Wed, Sep 10 11 46 AM		
Retrve	SendVM	Call List	More

Proceeding State

3339951447	To:1443
3339951447	1443
Ben North	
Helen Co...	
Tom Davies	
Intercom	1 new missed call
Call List	

Example 2: Configuring Common Administrator Functions Through Soft Keys

Note: For this example, refer to *EFK-SoftKey2.cfg* and *SoftKey2-directory.xml* (rename to *<mac-address>-directory.xml* to configure).

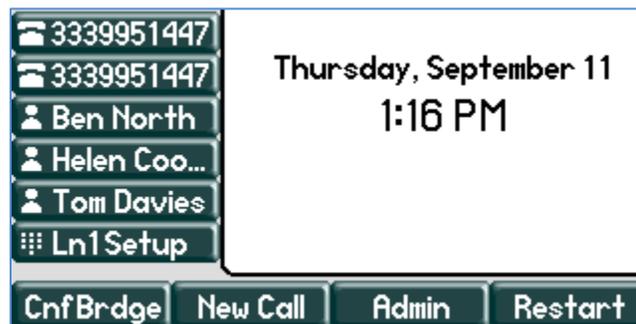
This example might apply to people that are involved in implementing solutions with Polycom SoundPoint IP phones and frequently need to perform Menu-driven functions that require multiple key presses. By defining macros to emulate these key presses, it is possible to configure the phone for single button access to common functions.

The *directory.xml* file is required to configure features as speed dial keys. In this example, the following Enhanced Feature Key features are defined and assigned to phone soft keys and speed-dial keys:

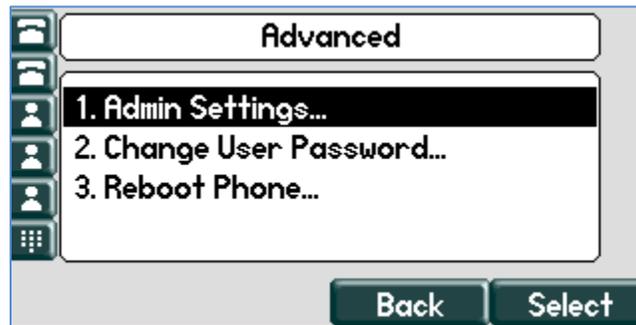
- **Admin** – single button access of Advanced Settings
- **Restart** – single button phone restart (to apply configuration changes)
- **Ln1Setup** – speed-dial key assigned to take the administrator to the SIP Line1 setup menu to view the SIP settings for that line (Note the use of an embedded macro (\$MAdminMenu\$) within the Line1Setup EFK)
- **Browser** – a soft key available in the Active call state to take the user to a specific browser location

Note: For this example, the following ‘standard Polycom’ soft key functions were disabled: **My Status**, **Buddies**, **Forward**, **Callers**, and **Directories**.

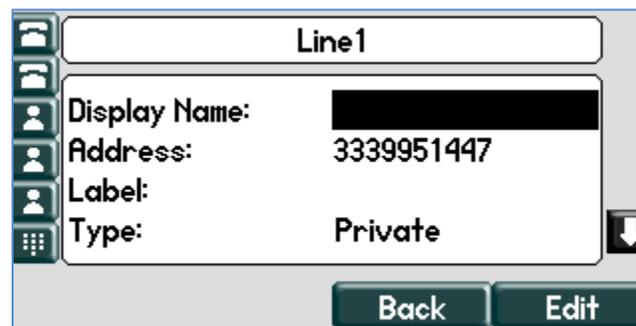
Idle Screen



If you press the **Admin** key on the idle screen, the following screen appears:



If you press the **Ln1Setup** speed dial key on the idle screen, the following screen appears:



The second page of soft keys in the Active State has the **Browser** soft key as shown in the following screen:



Pressing the **Browser** soft key will take the user to a configured XHTML page.

Testing and Troubleshooting Tips

Make note of the following when working with Enhanced Feature Keys:

- Phones do not give a user visible error message if something is not correct. If a function is executed that contains incorrect macros, the function may implement partially or not at all. The phone log files will log a message if an invalid Enhanced Feature Key operation is attempted. Common causes of errors:
 - EFK macros/actions are case sensitive (Note: see Internal Functions).
 - If implementing key press emulation macros, it may be necessary to enter a pause between operations.
- It is recommended that configuration files created and edited with an XML editor be used for prototyping features.
 - Use of speed-dials to prototype the macros can be useful to avoid having to re-boot the phone to test out changes. In this case, the macro can be entered directly into the speed-dial 'Contact' field and edited from the phone keypad.
 - The web interface cannot be used to configure Enhanced Feature Keys.
- The Administrator needs to take into account soft key and menu differences between certain models of phones when designing any custom soft key features. In particular, the SoundPoint IP 301, 320, and 330 phones have only three soft keys. The other family members are very similar in soft key designation and usage.
- The Phone Administrator must be cautious not to implement soft key features that might hide commonly used functions from users. Given the level of configurability of the keys, it may be possible to define a soft key configuration or operation that results in a 'dead end' or improper behavior of the phone user interface. Careful prototyping and testing is strongly encouraged before a new soft key design is implemented in a phone system.

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