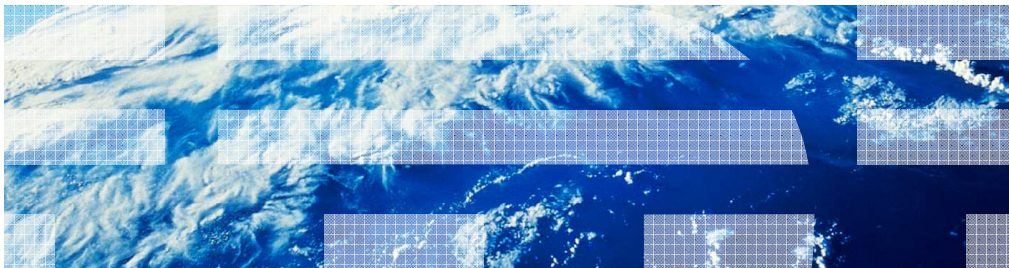


IBM WebSphere Application Server Communications Enabled Applications

CEA widgets overview



This presentation provides an overview of the widgets included with the Communications Enabled Applications feature of IBM WebSphere Application Server.

Agenda

- Overview
- Widgets
- Samples
- Summary

This presentation will begin with a brief overview of the CEA widgets.

You will then get a high level description of the widgets and the provided sample application.

Overview

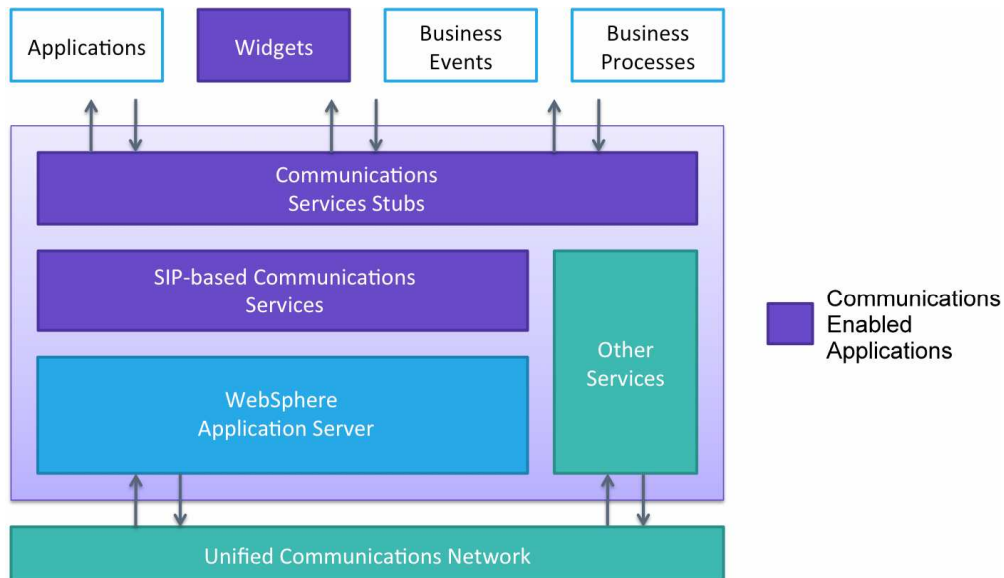
This section will discuss the widgets included with the Communications Enabled Applications feature of WebSphere Application Server.

Web widgets overview

- Enable telephony components in enterprise applications
- Connect enterprise applications to IP-PBX providers to integrate telephony components
- Connect enterprise application web pages on separate computers to allow for interactive page sharing between two parties

There are several web based widgets included with the Communications Enabled Applications feature of WebSphere Application Server. The widgets allow you to quickly integrate telephony components into your Web pages. The widgets will interact with an IP-PBX to establish telephone calls, monitor incoming telephone calls, and establish a shared Web browsing session between two parties.

Widget interaction



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CEA widgets overview

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The Communications Enabled Applications widgets communicate with a back end service. Here in this diagram you can see the widgets depicted in the purple square at the top. The widgets communicate with the communication services, which then work with the IBM WebSphere Application Server to pass data on the unified communications network. Only the widgets that perform telephony related activities will pass data to the unified communications network to handle telephone related activities.

Widgets ready as provided

- CEA widgets are shipped with IBM WebSphere Application Server
- These widgets are available for customer use as is for integration into enterprise web application pages
- Three ready-to-integrate widgets provided and two extendable widgets
- The widgets are constructed with the Dojo Toolkit

Of the five included Communications Enabled Applications widgets, three are ready-to-integrate, and two are designed to be extended. All widgets are built using the Dojo toolkit, and are provided in the CEA custom Dojo toolkit that is included with IBM WebSphere Application Server.

The widgets can be added to your web pages by adding a JavaScript reference to the CEA Dojo toolkit, and adding the tag definitions to your HTML files. This information is covered in more depth in the presentations on the widgets.

REST backend

- Representational state transfer API = REST API
- Web components work with REST APIs and an IP-PBX
- REST HTTP requests from CEA widgets work to provide telephony integration with web pages

The widgets communicate with the back end service using REST APIs. REST stands for representational state transfer. When using REST, HTTP requests are sent to the waiting service in a format that the service is expecting. Information is extracted from the request to perform operations, and information is passed back to the widgets from the service in JSON format.

The communication service layer works with an IP-PBX to establish telephone calls, monitor call information, and end telephone calls that are interacting with the web widgets.

Widgets

This section will discuss the Communications Enabled Applications widgets included with IBM WebSphere Application Server.

CEA web widgets

- Three ready-to-integrate widgets and two extendable widgets
 - Collaboration dialog widget
 - Collaboration data transfer widget
 - Click to call widget
 - Call notification widget
 - Co-browsing widget

Of the five included Communications Enabled Applications widgets, three are ready-to-integrate, and two are designed to be extended. The widgets are the collaboration dialog widget, the collaboration data transfer widget, click to call and call notification widgets, and the co-browsing widget. Next you will look at a high level overview of each of the widgets.

Collaboration dialog widget

- This widget generates a modal window that shares collaboration session data between two users in a web page
- Other widgets extend this widget to embed the shared pop up window in a Web page
- Custom Web collaboration enabled widgets can be built quickly and easily by extending this CEA widget
- This widget is embedded in the co-browse, click to call and call notification widgets

The collaboration dialog widget is a web widget that allows two parties to share a Web browsing session. It consists of a pop up window that opens in both browsers of two parties that want to join a collaborative Web browsing session. In the collaboration dialog widget, each party in the co-browsing session can browse a Web page that the other is also viewing at the same time. There are several features of the collaboration dialog widget, including the ability for one party of the co-browsing session to drive the Web navigation that both parties are viewing. Both members of the co-browsing session can use a highlight feature to highlight information on a Web page for the other party to see. Using two-way forms, both parties can enter information into forms that are displayed in a co-browsing session.

The collaboration dialog widget can be launched using the co-browse widget, the click to call widget, and the call notification widget. The collaboration dialog widget must be launched using one of these widgets, or can be launched by extending the functionality in one of those widgets.

Collaboration data transfer widget

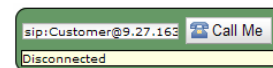
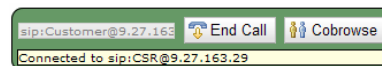
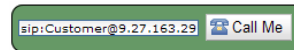
- Creates the collaboration session and then allows peer to join that session
- Collaboration data transfer widget handles data transfer in the background for the other widgets
- Can be extended and used to transfer data in the background of applications
- Handles the collaboration data for click to call and call notification and co-browse widgets
- The collaboration data transfer widget is extended by the collaboration dialog widget

The collaboration data transfer widget is used by the collaboration dialog widget. The collaboration data transfer widget creates the collaboration session used to share web data between the two parties in a co-browsing session, and allows peers to join the session. This widget handles the task of passing data behind the scenes for the collaboration dialog widget, click to call and call notification widgets. The collaboration data transfer widget is used by the other widgets, but is not seen as it has no graphical component.

The collaboration data transfer widget can be extended and used to pass data in the background of application activities.

Click to call widget

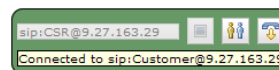
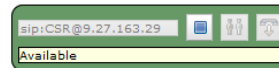
- Telephony widget
- Web widget that gets incorporated into web page
- Text box with **Call Me** button
- User enters their telephone number and is connected to customer service representative in this example
- Able to hang up after call
- When the call has ended the widget status is updated indicating that the call has finished



The click to call widget is a telephony related widget that you can embed into a web page. The click to call widget allows a user to enter their telephone number into an entry box, and then be connected to a customer service representative automatically to their phone. When a user of a Web page needs to be connected to a customer service representative, they can click the call me button on the click to call widget, and their telephone will ring. When they answer their phone, they are connected to a customer service representative. The click to call widget is described in more detail in the click to call widget presentation.

Call notification widget

- Telephony widget
- Web widget is added to page
- The user registers for notifications by entering her SIP address and clicking **Start call notification**
- Notified of incoming calls
- Ability to connect to caller
- Ability to hang up active calls



The call notification widget is another telephony related widget. The call notification widget is embedded into a web page that is accessed by the customer service representative role in a customer scenario. The customer service representative will log into their workstations, and then use the call notification widget to register their phones to be available to take calls from customers.

When the customer service representative registers their phones with the call notification widget, the call notification widget enters an available state. The customer service representative is notified automatically of customer calls that are arriving from the customers browsing the Web site that are using the click to call widget.

The customer service representatives are notified that a call is incoming, and can connect to the caller to answer questions from customers.

They are also able to launch co-browsing sessions using a button available on the call notification widget. If they are in a call with a customer they have been connected to, they can launch a co-browsing session by pressing that button to launch the collaboration dialog widget.

Co-browsing widget

- Launching point for the collaboration dialog widget
- The initiating party clicks the co-browse widget's create button and is given a URL to pass to their peer
- Peer clicks on the URL and is take to a page with the widget and joins the session
- At this time both parties see the collaboration dialog launched
- The co-browse session initiator can drive the session, change pages and use the highlight feature to point out things on the page

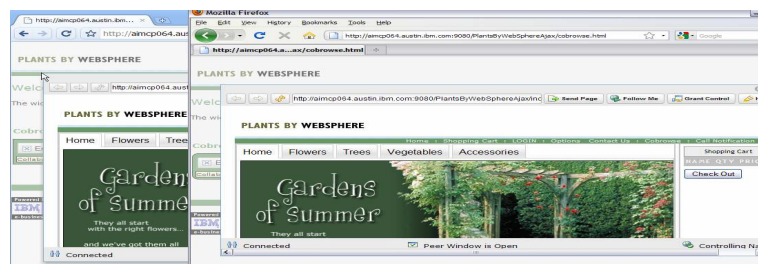
The co-browsing widget can be embedded into a web page to launch a co-browsing session between two peers.

The co-browsing widget has a button that generates a URL. The party that is initiating the co-browsing session will press that button to generate a URL that they pass to their co-browsing peer. When the peer enters that URL into their browser, the collaboration dialog will open in each of the co-browsing peers Web browsers.

The initiator of the co-browsing session is by default the member of the co-browsing session that has access to control the navigation of the co-browsing session. The collaboration dialog features can then be used to navigate the Web site and share control of the co-browsing session with the co-browsing peer.

Secure web URIs (1 of 2)

- During web collaboration sessions there is the potential for the Web session to be 'snooped'
- A random number is generated and provided as a way to prevent session snooping
- The number is injected at the end of the URI that is generated



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CEA widgets overview

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Within the web collaboration capability of the Communications Enabled Applications feature, Web URIs are generated in order to share a Web collaboration session. The generated URIs include a parameter called nonce, which stands for number used once. A number used once in an enterprise application is a random number that is generated and used once to authenticate and initiate a transaction. In this case, the number used once is used to authenticate the users of the Web collaboration session. This approach helps to prevent session snooping.

Secure web URIs (2 of 2)

- How it works:
 - Random number generated and appended to the URL
 - &nonce='2324234234234234'
 - Example http://aimcp064.austin.ibm.com:9080/PlantsByWebSphereAjax/cobrowse.html?cea_collab=server1.1255561449053.0_2&nonce=-1554841135
 - User2 is joining the web collaboration session and will paste the link in a browser to start the Web collaboration
 - User1's collaboration session will compare the nonce number value to the generated value
 - If they match, the session is instantiated and Web collaboration is established

The number used once is generated randomly and then used to authenticate the web collaboration session when it is established. User A will generate the URI to pass to User B who will paste the link into their Web browser and kick off the Web cobrowsing session. The number used once is gathered when User B establishes their Web session. The number will then be compared to User A's number to see if they match. If the number returned from User B matches the random number generated by User A, the session is established and the cobrowsing widget will open to display a cobrowsing session between the two users. If the random number returned by User B does not match the number that User A expects to see, then the Web cobrowsing session is not established. The two users will have to try again to start a cobrowsing session by generating a new Web collaboration link using the cobrowsing widget. This added security will prevent a malicious user from intercepting the invitation link and joining a Web collaboration session posing as a known user.

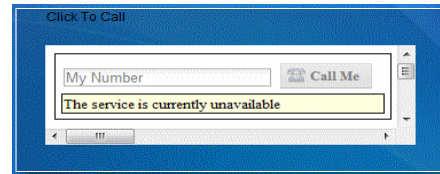
Widgets provided as iWidgets

- **ClickToCall**, **CallNotification** and **Cobrowse** widgets are also available in iWidget format
- iWidget is a browser-oriented component designed to work within the framework defined by the iWidget specification
- iWidgets are integrated into IBM Mashup Center in WAR files
- Available in an iWidget Package WAR file

The click to call, cobrowse, and collaboration dialog widgets are also provided as iWidgets ready to be integrated into frameworks that adhere to the iWidget specification, for example the IBM Mashup Center product. Frameworks that implement the iWidget specification use iWidgets to integrate many separate components into a single page. iWidgets are integrated into iWidget compliant applications as web archive files (WAR files). The click to call, call notification, and cobrowse widgets are now available as iWidgets in a single WAR file in addition to the standard widget format.

Publishing CEA iWidgets

- Method of publishing iWidgets is dependent on the container used
- For most scenarios, the iWidget container runs separately from the application server supporting the CEA functions
- A proxy is required to send requests from the widget to the CEA REST service



iWidgets are published differently depending on the specific iWidget implementation. For most implementations, the iWidget container runs separately from the IBM WebSphere Application Server supporting the Communications Enabled Applications (CEA) functions. In this scenario, a proxy must be integrated into the application serving architecture to proxy the requests from the CEA iWidgets to the REST service running on the application server. The image on the right side of this slide displays the click to call widget when it is installed in IBM Mashup Center.

CEA Mobile Widgets

- **Mobile web 2.0 Widgets:** Customizable, extensible and delivers consistent capability across desktop & mobile browsers:
 - Click to Call
 - Call Notification
 - Contact Center Cobrowsing
 - Peer to Peer Cobrowsing
 - Two-way Synchronized Forms
- **Supports Android and iPhone mobile browsers**
 - Mobile "App-like" look and feel
 - Widget interactions updated to support touch interactions and on mobile browsers
 - Mobile users can cobrowse with a desktop or mobile user



Mobile and Desktop user cobrowsing together

Mobile web 2.0 versions of the Communications Enabled Applications (CEA) widgets are also provided, including click to call, call notification, contact center browsing, peer to peer cobrowsing, and two-way synchronized forms. Support is provided for both Android and iPhone mobile browsers. The widget interaction scheme has been updated to provide a look and feel that is consistent with mobile applications, including support for touch interactions and gestures within mobile browsers. The CEA feature allows a mobile user to cobrowse with another mobile user, or even a desktop user.

Section

Samples

This section will discuss Plants By WebSphere for Communications Enabled Applications (CEA), one of the sample applications included in the CEA samples package.

Plants by WebSphere sample application

- Plants by WebSphere for CEA is included in the CEA samples package available on the WebSphere Application Server Samples site
 - http://www14.software.ibm.com/webapp/wsbroker/redirect?version=matt&product=was-nd-mp&topic=welcome_samples
- Plants by WebSphere for CEA includes examples of how to embed the click to call widget, call notification widget, and co-browse widget
- Packaged as an Enterprise Archive (EAR)

An enhanced version of the Plants By WebSphere sample application is provided with IBM WebSphere Application Server. The sample application includes web pages with embedded click to call, call notification, and co-browse widgets. This sample application is provided as an enterprise archive, or EAR file. Instructions for installing the application are provided to help you get the application installed and begin trying out the Web widgets. Using the plants by WebSphere application you can test the functionality of starting a co-browsing session between two peers. You can simulate a telephone call scenario between a customer and customer service representative, and can see how a customer service representative is alerted of incoming calls when they register for call notification.

The provided HTML pages in the Plants by WebSphere sample are a great source for examples of how to embed widgets into Web pages. The information center for IBM WebSphere Application Server is also a great resource for learning how to use the widgets in your Web application.

Summary

This section will summarize the features of the Communications Enabled Applications widgets included with IBM WebSphere Application Server.

Summary

- CEA web widgets allow IP telephony and co-browsing integration into enterprise Web applications
- Three ready-to-integrate widgets and two extendable widgets
 - Collaboration dialog widget
 - Collaboration data transfer widget
 - Click to call widget
 - Call notification widget
 - Co-browsing widget
- Widgets make REST HTTP requests to the CEA back end

The Communications Enabled Applications (CEA) feature of WebSphere Application Server includes several widgets that can be used to enhance communications in your web applications. There are widgets that can be embedded in your Web pages to provide telephony integration and allow for collaborative Web browsing. The co-browsing widget can launch the collaboration dialog widget to allow two parties to view a Web page in a co-browsing session. The click to call and call notification widgets can enhance your Web page by providing users the ability to initiate a telephone call. Customer service representatives can be alerted of incoming customer calls and be connected to customers as those calls arrive. The collaboration data transfer widget is extended by the collaboration dialog widget, and is used by the click to call, and call notification widgets to handle data transfer behind the scenes in your Web application. These widgets make REST HTTP requests to the CEA back end.



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