

WALL Reference Guide
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If you are using WALL, chances are that you are aware of the different mark-up language available for different wireless devices around the globe.

Target Audience

This reference is made for developers who need to create wireless services for existing and future browsers.

To use WALL profitably, you need to possess a smattering of HTML and XML. To add to that, knowledge of XHTML MP, CHTML and WML will be a great advantage in fine-tuning your application for specific devices. This is not strictly necessary, though. WALL is currently available for the Java SDK 1.4 platform. Familiarity with the following Java technologies is an advantage:

- Java programming language
- Java Servlet and JSP
- Jakarta Tomcat configuration

This document will list all the tags supported by the WALL tag library in alphabetic order.

WALL tags

a, alternate_img, b, block, body, br, caller, cell, cool_menu, cool_menu_css, document, font, form, h1,h2,h3,h4,h5,h6, head, hr, i, img, input, load_capabilities, marquee, menu, menu_css, option, select, title, wurfl_device_id, xmlpidtd.

a (anchor)

This element implements a link (AKA hyperlink) on the target device. Being the foundation of hypertext navigation, this standard is pretty standard on all wireless devices. The capabilities

Attribute*	Value	WML	XHTML	CHTML	Comments
accesskey	[1..9]	Some	Yes	Yes	Keypad accelerator
href	URI	Yes	Yes	Yes	Link to URI
opwv_icon	[1..255]	Some	Some	No	Built-in icon for Openwave devices. Only applies when hyperlink is used inside a 'menu'
title	short string	Some	Some	No	Softkey label

* **bold** = Mandatory, Some = Supported by Some Devices

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML
imode_region	chtml_ui	used to choose emoji version
menu_with_select_element_recommended	wml_ui	only applies to WML devices

alternate_img
(alternative image)

'**alternate_img**' tag provides a way to multiserve pictures out of a unique image tag. For this reason, alternate_img can only be used inside an '**img**'. In order to influence the actual rendering of the parent 'img' tag, a request must verify two conditions:

- the one in the 'test' attribute (mandatory)
- the one implied by the use of one of the other 4 attributes (the 'src' attribute does not imply a condition)

Note: in addition to 'test', you must use one (and only one) of the other 5 attributes or WALL will generate an error.

The 'test' attribute allows the developer to specify an arbitrary condition (for example a WURFL capability value or a condition based on such values).

The 'src' attribute specifies a (typically different) image url to be used by the parent 'img' tag whenever the test condition evaluates to true.

The 'nopicture' attribute issues a directive to the parent 'img' tag to refrain from rendering the picture specified in the 'src' attribute of the img tag.

'opwv_icon' can only influence the rendering of a picture for devices that support the Openwave built-in icons. If test is true, those devices will display an Openwave icon rather than the picture specified by the parent img tag.

'eu_imode_icon' and 'ja_imode_icon' work similarly to 'opwv_icon', but they apply to imode devices only.

Attribute	Value	WML	XHTML	CHTML	Comments
test	true,false	Yes	Yes	Yes	Applies to this request
src	String	Yes	Yes	Yes	URL to alternative image
nopicture	true,false	Yes	Yes	Yes	If test is true, do not display any picture
opwv_icon	String	Yes**	Yes**	no	Alternative Openwave icon
eu_imode_icon	String	no	no	Yes	Imode icon (European Devices)
ja_imode_icon	String	no	no	Yes	Imode icon (japanese devices)

** = may not be supported by some devices

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML
imode_region	chtml_ui	ja eu us as none
opwv_xhtml_extensions_support	xhtml_ui	true,false
opwv_wml_extensions_support	wml_ui	true,false

b (bold)

The **b** tag is supported by all WAP 1.X and WAP 2 devices, but it cannot be used inside anchors (hyperlinks) on WML devices.

In addition, CHTML devices do not recognize the **b** tag (even though they typically do not crash).

This tag fixes the problem by disappearing for CHTML and WML (when used inside an hyperlink).

No attributes are defined for this tag

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML

block

This element typically maps to the **p** tags on the different devices. This tag was introduced to multi-serve different syntaxes to align the text. Also note that either 'p' tags or block need to be used in order to serve valid WML and XHTML MP mark-up.

Attribute	Value	WML	XHTML	CHTML	Comments
align	left,right,middle,center	Yes	Yes	Yes	Keypad accelerator

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML

body

The **body** tag will multiserve the body of a wireless document. This implies that for WML browsers, a WML 'card' element will be produced.

Some HTML attributes are also supported. They will be:

- rendered as is for CHTML browsers
- turned into the corresponding CSS for XHTML MP
- simply ignored for WML devices

Some WAP 1.X devices (notably Nokia) require the insertion of the 'template' element to make the back button available to end users. The default label is 'Back', the 'wml_back_button_label' attribute lets one override that with a different label.

Attribute*	Value	WML	XHTML	CHTML	Comments
bgcolor	String	no	Yes**	Yes**	Background Color
text	Color of text	no	Yes**	Yes**	Link to URI
wml_back_button_label	String	Yes**	no	no	Label for Back Button on Nokia devices (default = 'Back')
disable_wml_template	true,false	Yes**	no	no	Never produce a <template> tag for any WML device
newcontext	true,false	Yes	no	no	Add a newcontext="true" for WML devices

* **bold** = Mandatory, Some = Supported by Some Devices,
 ** = may not apply to some devices

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML
xhtml_document_title_support	xhtml_ui	Does WAP 2 device render title?
built_in_back_button_support	wml_ui	<template> element required to force back button?
card_title_support	wml_ui	Does WAP 1.X device render title

br

The **br** tag is supported by all devices. Alas, because of CHTML well-formedness, some devices require that 'br' is escaped (i.e.
) while others actually ignore escaped 'br'.

No attributes are defined for this tag

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML

caller

Most wireless devices support a syntax of some kind to let users start a telephone call by clicking an hyperlink.

Some devices do not support this feature, while some others support it but with different syntax.

The '**caller**' tag abstracts that away.

Attribute*	Value	WML	XHTML	CHTML	Comments
accesskey	[1..9]	Some	Yes	Yes	Keypad accelerator
alt	String	No	Yes	Yes	Alternative text if device does not support call
cti	String	no	no	Yes**	CHTML device support this for complex dial combinations
opwv_icon	[1..255]	Some	Some	no	Built-in icon for Openwave devices. Only applies when hyperlink is used inside a 'menu'
tel	String	Yes**	Yes	Yes	Telephone Number to Call

* **bold** = Mandatory, Some = Supported by Some Devices

** = not all devices support this.

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML
xhtml_make_phone_call_string	xhtml_ui	Syntax supported to start a phone call
wml_make_phone_call_string	wml_ui	Syntax supported to start a phone call
chtml_make_phone_call_string	chtml_ui	Syntax supported to start a phone call
menu_with_select_element_recommended	wml_ui	only applies to WML devices

cell

'**cell**' this tag only makes sense inside a coolmenu.

Its task is to render tables for devices which support them and make sure that imode and WAP 1.X devices get the line breaks in the right place.

No attributes are defined for this tag

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML
chtml_table_support	chtml_ui	true,false

cool_menu

'**cool_menu**' implements advanced graphical menus a-la 'VodaLive'. With the advent of cool WAP 2.0 devices equipped with big screen colors, all of the major carriers and wireless portals have implemented cool looking entry pages to their services. Of course, those cool pages do not work the way they are on old WML devices.

Coolmenus are the WALL way to implement advanced graphical menus which degrade gracefully on all devices. The power of cool menus is best exploited when used together with 'img' and 'alternate_img' tags to multiserve the graphical icons.

By default, cool menus are displayed in a grid of two columns (for devices which support tables), but this can be changed by setting the 'colnum' and 'tabularize' attributes. As far as colnum, nothing prevents you from dynamically setting the number of columns as a function of the display width as derived from the WURFL.

There are cases in which one may want to represent the menu as a list, rather than a table. Setting tabularize to false will make WALL generate a list of hyperlinks (each preceded by the picture) also for those devices which can display the menu as a matrix.

Important Note: if you explicitly set the colnum and tabularize attributes in the cool_menu, you need to make sure that the corresponding attributes are set *with the same values* in the cool_menu_css tag.

Attribute	Value	WML	XHTML	CHTML	Comments
colnum	Integer	no	Yes	Yes**	Number of columns (default: 2)
tabularize	true,false	no	Yes	Yes	disable attempt to display as a table (resort to menu)

* **bold** = Mandatory, Some = Supported by Some Devices

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML
chtml_table_support	chtml_ui	true,false. Does Imode device support tables?
xhtml_table_support	xhtml_ui	true,false. Does XHTML device support tables?

cool_menu_css

'**cool_menu_css**' only makes a difference on XHTML MP devices.

It appears that different XHTML devices display the content in each tables aligned differently on different device/browsers combination.

In addition, some devices display the table left-aligned (i.e. with a bunch of unused screen space on the right), while others automatically center the table and stretch it along the full width of the display. Fortunately, WCSS can help to reconcile these differences. This tag makes sure that the CSS is rendered, but only for XHTML devices. The 'colnum' attribute is necessary to calculate the cell width to be specified by the CSS. This value must be the same as the one fed into the colnum attribute in the cool_menu tag in the same page (or the results would be unpredictable). Default value is 2 (columns). **Important Note:** if you explicitly set the colnum and tabularize attributes in the cool_menu_css, you need to make sure that the corresponding attributes are set *with the same values* in the cool_menu tag.

Attribute	Value	WML	XHTML	CHTML	Comments
colnum	Integer	no	Yes	no	Number of columns (default: 2)
tabularize	true,false	no	Yes	Yes	disable attempt to display as a table (resort to menu)

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML
chtml_table_support	chtml_ui	true,false. Does Imode device support tables?
xhtml_table_support	xhtml_ui	true,false. Does XHTML device support tables?

document

The '**document**' tag is responsible for returning the right MIME-type for the mark-up returned by WALL according to the following scheme:

- XHTML MP - text/html
- CHTML - text/html
- WML - text/vnd.wap.wml

In addition, WALL will try to use some extensions available for the Openwave browser whenever used in connection with the MAG/UP.Link Openwave gateway. These extensions can be disabled explicitly, if, for any reason, one needs to. Finally, there is a directive to attempt to disable caching.

Attribute*	Value	WML	XHTML	CHTML	Comments
disable_wml_extensions	true false	Yes	no	no	Disable Openwave Extensions
disable_xhtml_extensions	true false	no	Yes	no	Disable Openwave Extensions
disable_cache	true false	Yes	Yes	no	Disable Openwave Extensions
disable_content_type_generation	true false	Yes	Yes	Yes	Prevent WALL from generating the MIME type

* **bold** = Mandatory, Some = Supported by Some Devices

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML
imode_region	chtml_ui	used to choose emoji version
menu_with_select_element_recommended	wml_ui	only applies to WML devices
opwv_xhtml_extensions_support	xhtml_ui	true,false
opwv_wml_extensions_support	wml_ui	true,false

font

'font' tag is a CHTML tag which all web programmer know. It will render virtually verbatim on CHTML devices. XHTML MP devices will use the corresponding CSS. While this is not guaranteed to work on all devices, it will degrade gracefully. WML devices will not be served any tags at all, just the content.

Attribute	Value	WML	XHTML	CHTML	Comments
color	String	no	Yes**	Yes	Text Color
face	String	no	Yes**	Yes**	Font Family
size	+1,-1,Integer	no	Yes**	Yes**	Font Size

** = may not be supported by some devices

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML

form

'form' multiserves the form element for HTML and encapsulates the info to render forms in WML compatibility mode.

Attribute*	Value	WML	XHTML	CHTML	Comments
action	URI	Yes	Yes	Yes	Servelet or JSP to post to
enable_wml	true,false	Yes	no	no	Enable WML rendering for WML devices
method	get,post	Yes	Yes	Yes	HTTP post method (get or post)

* **bold** = Mandatory, Some = Supported by Some Devices

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML

h1,..,h6

h1...h6 tags are supported by all CHTML and XHTML devices, but not WML devices. For WML devices, the content is highlighted with the tag.

No attributes are defined for this tag

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML

head

'head' element is simple. It encapsulate the WALL 'title' tag (to mimic HTML syntax) and can contain non-WALL meta tags.

The 'head' tag is responsible for producing the top tags for each mark-up.

This tag has no attributes

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML

hr

The **hr** tag is supported by CHTML and XHTML devices. Because of XHTML well-formedness, some devices require that 'hr' is escaped (i.e.
) while others actually ignore escaped 'hr'. As far as WML is concerned, WML does not support the 'hr' element (some version of the Openwave browser Version 5 actually did. Currently WALL does not take advantage of this). For WML devices hr rendered as "

".

Please note that **hr** cannot be used inside a block or a form. The reason for this is that it would break well-formedness. Some devices (notably the SonyEricssons) break on this.

Attribute	Value	WML	XHTML	CHTML	Comments
color	String	No	Yes	Yes	String representing color

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML

i

While the **i** tag is supported pretty much by all devices, it cannot be used inside anchors (hyperlinks) on WML devices.

This tag fixes the problem effectively, by singling out that particular case.

No attributes are defined for this tag

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML

img

The '**img**' tag is apparently just a wrapper around the 'img' tag as used in the three wireless mark-ups. When used together with '**alternate_img**', though, you have a powerful tool to serve different pictures to different kinds of devices. This is particularly true if you use JSTL to perform tests on WURFL conditions to select alternate values for the 'src' attribute.

Having said this, '**img**' itself is pretty straightforward to understand and use: just set the 'src' and 'alt' attributes.

Note: This tag performs some magic when used inside a coolmenu to add line-brakes and extra space correctly.

Attribute	Value	WML	XHTML	CHTML	Comments
src	URL	Yes	Yes	Yes	URL to actual picture
alt	String	Yes	Yes	Yes	accompanying text

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML
imode_region	html_ui	ja eu us as none

input

The '**input**' tag is often turned into an 'input' tag also in the target mark-up. Nevertheless there is quite a lot of magick going on to emulate hidden-fields, submit buttons, formats and so on.

When used in WML compatibility mode, the number of legal types for the 'input' element is limited to 'text', 'password', 'hidden', 'submit'

Attribute*	Value	WML	XHTML	CHTML	Comments
accesskey	[1..9]	Some	Yes**	Yes	Keypad accelerator
checked	'checked'	no	Yes	Yes	'checked' attribute
disabled	'disabled'	no	Yes	no	'disabled' attribute
emptyok	'emptyok'	Yes	Yes	no	'emptyok' attribute
format	String (see format attribute spec)	Yes	Yes	Partly***	Link to URI
maxlength	Integer	Yes	Yes	Yes	'maxlength' attribute
name	String	Yes	Yes	Yes	'name' attribute
size	Integer	Yes	Yes	Yes	'size' attribute
type	'text', 'password', 'hidden', 'submit' ****	Yes	Yes	Yes	'type' attribute
value	String	Yes	Yes	Yes	'value' attribute

title	String	Yes	Yes	no	'title' attribute for WML and XHTML MP devices
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* **bold** = Mandatory, Some = Supported by Some Devices
 ** = may not be supported by some devices
 *** **partly** = CHTML lets you specify numeric mode for the keyboard
 **** = This applies to WML compatibility mode. Outside of it, you can use any value ('radio' and 'check' too, for example)

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML
xhtml_format_as_css_property	xhtml_ui	decent CSS support for format?
xhtml_format_as_attribute	xhtml_ui	support 'format' attribute in XHTML?
softkey_support*	wml_ui	are softkeys supported?
wml_1_3*	markup	is wml 1.3 supported?

* = these two capabilities together are used to optimize the use of the submit button for some WML 1.3 devices with the Openwave browser.

load_capabilities

The 'load_capabilities' tag is needed for those who intend to use the conditional tags in the JSTL with WALL as in the example below:

```
<c:if test="${capabilities.gif}">
```

Loading the capabilities is sort of expensive the first time, so it's wise to avoid that operation unless you know you need it.

Invoking the `load_capabilities` tag will make the following variables available for your scripting:

```

${capabilities.'capability_name'} = wurfl capability
${wall_markup}                   = xhtmlmp, wml, chtml
${brands}                        = list of device brands
${devices.'brand_name'}          = list of devices grouped by brand
${device_id}                     = WURFL device_id (debugging purposes)

```

No attributes are defined for this tag

No capabilities are queried by this tag

marquee

'**marquee**' tag is a CHTML tag which all web programmer know. It will render virtually verbatim on CHTML devices. XHTML MP devices will use the corresponding CSS. While this is not guaranteed to work on all devices, it will degrade gracefully. WML devices will not be served any tags at all, just the content.

Attribute	Value	WML	XHTML	CHTML	Comments
behavior	'scroll', 'slide', 'alternate'	no	Yes**	Yes	'behavior' attribute
direction	'left', 'right'	no	Yes**	Yes	'direction' attribute
loop	String	no	Yes**	Yes	'direction' attribute
bgcolor	Integer, 'infinite'	no	Yes**	Yes	'bgcolor' attribute

** = may not be supported by some devices

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML
xhtml_nowrap_mode	xhtml_ui	is 'nowrap' mode supported?
xhtml_marquee_as_css_property	xhtml_ui	support marquee through XSS

menu

'**menu**' implements navigation menus. The two attributes concern automatic numbering and disabling of fancy coloring for menus on devices that support that.

Attribute	Value	WML	XHTML	CHTML	Comments
autonumber	false , true	Yes**	Yes	Yes	Implement keyboard accelerators
colorize	false , true	no	Yes**	no	Do fancy XHTML devices (on devices that support it)

* **bold** = Mandatory, Some = Supported by Some Devices

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML
xhtml_supports_table_for_layout	xhtml_ui	decent table support?
xhtml_supports_css_cell_table_coloring	xhtml_ui	CSS powerful enough to color table cells

menu_css

'**menu_css**' produces CSS information necessary to have colorized menus for advanced XHTML MP devices.

The two good background colors are derived from the WURFL (which gives you a great way to configure your look & feel on a device-by-device basis), but those values can also be overridden in the code by setting them through the two attributes.

Attribute	Value	WML	XHTML	CHTML	Comments
bgcolor1	String	no	Yes	no	First good background color
bgcolor2	String	no	Yes	no	Second good background color

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML
xhtml_supports_table_for_layout	xhtml_ui	decent table support?
xhtml_supports_css_cell_table_coloring	xhtml_ui	CSS powerful enough to color table cells
xhtml_readable_background_color1	xhtml_ui	good background color 1
xhtml_readable_background_color2	xhtml_ui	good background color 2

option

'**option**' maps to 'options' tag also on the different target mark-ups. Nothing special there.

Attribute*	Value	WML	XHTML	CHTML	Comments
selected	'selected'	no	Yes	Yes	'selected' attribute
value	String	Yes	Yes	Yes	'value' attribute

* **bold** = Mandatory, Some = Supported by Some Devices

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML

select

'select' maps to 'select' on target mark-ups.

Attribute*	Value	WML	XHTML	CHTML	Comments
disabled	'disabled'	no	Yes	Yes	'select' attribute
multiple	'multiple'	Yes	Yes	Yes	'multiple' attribute
name	String	Yes	Yes	Yes	'name' attribute
title	Short String	Yes**	Yes**	No	'title' attribute
size	Integer	Yes	Yes	Yes	'size' attribute

* **bold** = Mandatory, Some = Supported by Some Devices

** = may not be supported by some devices

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML

title

'title' maps to the 'title' tag for XHTML and CHTML devices. On WML browsers, this is mapped to the 'title' attribute of the 'card' element.

Attribute*	Value	WML	XHTML	CHTML	Comments
enforce_title	true,false	Yes	Yes	no	make sure the the title is explicitly set for devices that don't render it by default

* **bold** = Mandatory, Some = Supported by Some Devices

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML

wurfl_device_id

This element is useful exclusively for debugging in those cases where you wonder which device ID and User-Agent is being inferred by the system for the current device.

Attribute*	Value	WML	XHTML	CHTML	Comments
ua	Any non-empty string	Yes	Yes	Yes	when set, also display UA string

No capabilities are queried by this tag

xmldata

'xmldata' means XML Processing Instruction and DTD. This tag makes sure that the right XML headers (if any) are produced for the target mark-up.

No attributes are defined for this tag

Attribute	Value	WML	XHTML	CHTML	Comments
encoding	String	Yes	Yes	No	Encoding String

This tag relies on the following WURFL capabilities:

WURFL capability name	Group	Comments
preferred_markup	markup	CHTML/XHTML/WML
