



**Volantis Mobility Server**  
**Message Preparation Server**<sup>™</sup>  
**ver. 5.1**

**XDIME 1 Reference**

**Volantis Mobility Server**

**Multi-Channel Server™**

**Version 5.1**

**XDIME 1 Reference**

## **Multi-Channel Server: XDIME 1 Reference**

Version 5.1

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### **Included software**

*Apache Software Foundation*

*Free Software Foundation*

*Jaxen Project*

*Sun Microsystems Inc*

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## a

### Purpose

Used to create a hypertext link to another place in the same document or to another document. The current document is the source of the link and the value of the `href` attribute, defines the link target.

### Attribute groups

Event attributes, Focus attributes, Hypertext attributes, Navigation attributes, Core attributes

### Examples

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="a">
  <pane name="background">
    <h3>The Volantis home page</h3>
    <a href="http://www.volantis.com">www.volantis.com</a>
  </pane>
</canvas>
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="a">
  <pane name="background">
    <h3>Table of contents</h3>
    <a href="test.xdime#p1">Chapter 1</a>
    <br/>
    <a href="test.xdime#p2">Chapter 2</a>
    <br/>
    <a href="test.xdime#p3">Chapter 3</a>
    <h3 id="p1">Chapter 1</h3>
    <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit.</p>
    <h3 id="p2">Chapter 2</h3>
    <p>Phasellus in dolor. Nunc ornare orci a libero. Nullam tortor lacus,
      pulvinar vitae, hendrerit non, posuere id, ante. </p>
    <h3 id="p3">Chapter 3</h3>
    <p>Suspendisse sit amet neque malesuada ligula semper pellentesque.</p>
  </pane>
</canvas>
```

# address

## Purpose

Used to supply contact information on a form or other document.

## Attribute groups

Event attributes, Core attributes

## Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="address">
  <pane name="background">
    <address>Volantis Systems<br/>
      Occam Road<br/>
      Guildford GU2 7YT
    </address>
  </pane>
</canvas>
```

# audio

## Purpose

Inline element that defines a timed audio component for use with MMS/SMIL for MPS messages. You should use this element when a device natively supports the AMR audio format (audio/amr and audio/x-amr).

## Attributes

Attribute	Description	Type	Default	Options	Use
alt	The text to be displayed if the audio cannot be played.	xs:string	none		optional
assetURLsuffix	A suffix to add parameters to the URL, for example a query string containing user information. MCS adds the specified suffix to the final variant URL without attempting to interpret it.	xs:string	none		optional
src	The component name of the audio clip to be played.	xs:string	none		optional

## Attribute groups

Block attributes, Event attributes, Core attributes

## Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="audio">
  <pane name="background">
    <h3>audio</h3>
    <audio src="/audiol1.mauc" alt="File not found"/>
  </pane>
</canvas>
```



## **b**

### **Purpose**

Inline element used to display the content in bold type.

### **Attribute groups**

Event attributes, Core attributes

### **Example**

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="b">
  <pane name="background">
    <p>The <b>most important</b> position is that of President</p>
  </pane>
</canvas>
```

# big

## Purpose

Renders content larger than the surrounding text. If the text is already to the largest size `big` will have no effect.

## Attribute groups

Event attributes, Core attributes

## Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="big">
  <pane name="background">
    <p>You <big>must</big> also assign a positive integer
      value to the width parameter.</p>
  </pane>
</canvas>
```

# blockquote

## Purpose

Designates a block of text quoted in the current document.

## Attribute groups

Block attributes, Event attributes, Core attributes

## Attribute

Attribute	Description	Type	Default	Options	Use
cite	The URL of the source of the quoted material	xs:string	none		optional

## Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="blockquote">
  <pane name="background">
    <h3>blockquotes</h3>
    <blockquote>Some browsers will automatically indent
      blockquotes from the main text margins.</blockquote>
  </pane>
</canvas>
```

## br

### Purpose

An inline element used to force a new line.

### Attribute group

Core attributes

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="br">
  <pane name="background">
    <p>
      First line.<br/>
      Second line.<br/><br/>
      Third line.</p>
    </pane>
  </canvas>
```

## canvas

### Purpose

Block-level element used to contain pages.

Contained `layout` and `timer` elements are valid for the canvas types 'main', 'portal', 'portlet', 'gear' and 'inclusion' that are not treated as a group. See *Types of canvas* for more information.

The `canvas` and `region` elements are only valid for the canvas types 'main' and 'portal' that are treated as a group.

Page caching is set to 'none' by default, and no caching takes place. If the `cacheScope` attribute has one of the other possible values caching for the page is enabled and the cache will contain the entire content rendered for the target device. If you set it to 'optimistic', the cache key is based on the static XDIME on the page, and pipeline markup is ignored. A value of 'safe' causes MCS to process all pipeline markup before calculating the key. See *Caching XDIME pages* for details of the caching operation, and how you should use these settings.

**Note:** If you apply themes to portlet canvases, they may not render correctly on devices that do not support the CSS functions for descendant selectors based on classes.

### Contained by

canvas, message, region, unit

### Contains

canvas, layout, region, style, timer

### Attributes

Attribute	Description	Type	Default	Options	Use
brand	The path to a brand folder	xs:string	none		optional
cacheScope	Sets the scope for page caching for this page. Overrides the default setting of 'none' in the MCS configuration file.	xs:string	none	optimistic, safe, none	optional
initialFocus	The initial focus of the canvas	xs:IDREF	none		optional
onenter	Script component to execute when a canvas is entered	xs:string	none		optional
onenterbackward	Script component to execute when a canvas is entered in the backward direction	xs:string	none		optional
onenterforeward	Script component to execute when a canvas is entered in the forward direction	xs:string	none		optional
ontimer	Script component to execute when a timer event occurs	xs:string	none		optional
overlay	The default value "false" renders the canvas as part of a main canvas. Some protocols, such as WML, allow grouping several logical pages into a single physical page. In these cases, setting the overlay attribute to "true" renders that canvas as a separate logical page.	xs:boolean	false	true, false	optional
pageUsage	If a page is an error page it should be stopped from processing parameters passed to it by setting this attribute to "error"	xs:string	none		optional
type	The type of canvas	xs:string	main	main, portal, portlet, gear, inclusion	optional

uaContext	When "new" is set on WML devices only, all the context variables for the browser are cleared. There is no effect on other protocols. The default leaves the context variables as they are	xs:string	current	current, new	optional
-----------	---	-----------	---------	--------------	----------

## Attribute groups

Event attributes, Page attributes, Core attributes

## Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="canvas">
  <pane name="background">
    <h3>Hello</h3>
    <p>MCS provides a comprehensive, standards-based,
      development and execution environment for delivering
      multi-channel content, applications and services that
      are automatically optimized for thousands of different
      consumer devices. </p>
  </pane>
</canvas>
```

## **cite**

### **Purpose**

A citation or reference to another information source.

### **Attribute groups**

Event attributes, Core attributes

### **Example**

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="cite">
  <pane name="background">
    <p>Refer to <cite title="Using CSS">Using CSS</cite> for further information</p>
  </pane>
</canvas>
```

## code

### Purpose

Contains a fragment of inline computer code.

### Attribute groups

Event attributes, Core attributes

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="code">
  <pane name="background">
    <p>You must also assign a value to the <code>scale</code> attribute.</p>
  </pane>
</canvas>
```



## dd

### Purpose

Contains the definition of a term in a definition list.

**Note:** The use of the `pane` attribute is deprecated.

### Contained by

dl

### Attribute groups

Block attributes, Event attributes, Core attributes

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="dl-dt-dd">
  <pane name="background">
    <h3>Useful Links:</h3>
    <dl>
      <dt>The Volantis home page</dt>
      <dd>
        <a href="http://www.volantis.com">www.volantis.com</a>
      </dd>
      <dt>Our support desk</dt>
      <dd>
        <a href="mailto:support@volantis.com">support@volantis.com</a>
      </dd>
      <dt>Our information desk</dt>
      <dd>
        <a href="mailto:moreinfo@volantis.com">moreinfo@volantis.com</a>
      </dd>
    </dl>
  </pane>
</canvas>
```

# dissectingpane

## Purpose

Used to set dissecting pane link text values from a page.

If the fragment in the `name` is not in the layout, MCS ignores the element.

## Contained by

layout

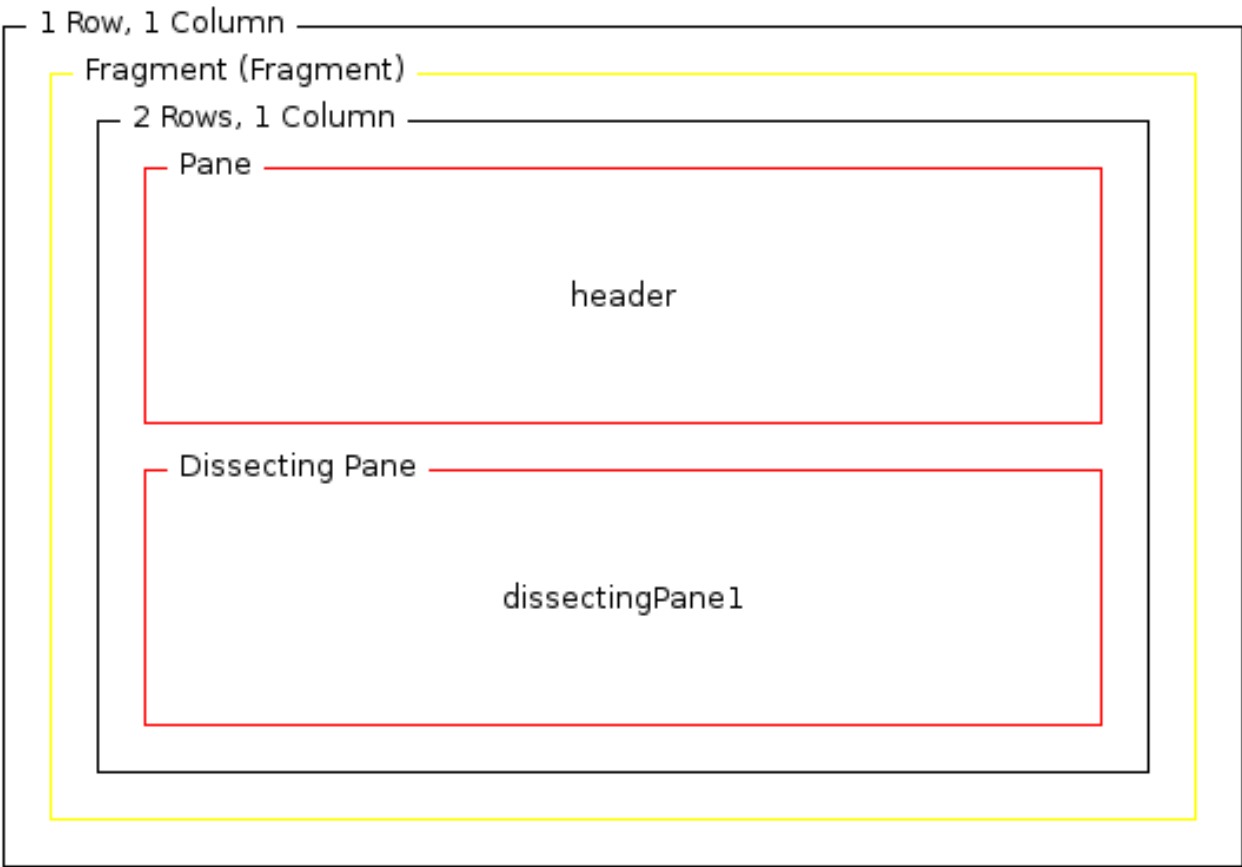
## Attribute group

Fragment attributes

## Example

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/dissectingpane.mlyt" pageTitle="layout">
  <layout>
    <dissectingpane name="dissectingPanel" linkText="Next" backLinkText="GoBack"/>
  </layout>
  <pane name="header">
    <h3>Welcome</h3>
  </pane>
  <pane name="dissectingPanel">
    <p>Multi-Channel Server (MCS) helps you manage the complexity of delivering
      a wide variety of content to PCs, PDAs, mobile phones, interactive digital TV,
      internet appliances, games consoles, VoiceXML and interactive kiosks. </p>
    <dividehint/>
    <p>To deliver to multiple channels, you need to present content, services and
      applications in a consistent way across all target devices. In MCS you can
      separate application design from device delivery, and build a cost-effective
      and scalable system, by defining policies.</p>
  </pane>
</canvas>
```

The `dissectingpane.mlyt` layout may have the following structure.



# div

## Purpose

Provides a way to divide documents into sections. The sections may be styled differently, for example, or conditionally displayed by events and scripting.

Authors can also use `keepTogether` to define blocks of markup that must not be split during dissecting, if that can be avoided.

## Attribute

Attribute	Description	Type	Default	Options	Use
<code>keepTogether</code>	If set to 'true', specifies that the body of the <code>div</code> element should not be split when dissecting.	<code>xs:boolean</code>	<code>false</code>		optional

## Attribute groups

Block attributes, Event attributes, Core attributes

## Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="div">
  <pane name="background">
    <div class="meta" id="metadata">
      <table>
        <tr>
          <th>Title</th>
          <td>Controlling stylesheet generation</td>
        </tr>
        <tr>
          <th>Modified</th>
          <td>2005-02-18</td>
        </tr>
        <tr>
          <th>Subjects</th>
          <td>Administration, CSS</td>
        </tr>
      </table>
    </div>
  </pane>
</canvas>
```

## dividehint

### Purpose

Defines locations where MCS should attempt to dissect panes. It has an effect on the following block of text or element, and is cleared when the element closes.

**Note:** Only paragraph elements are automatically dissected into shards.

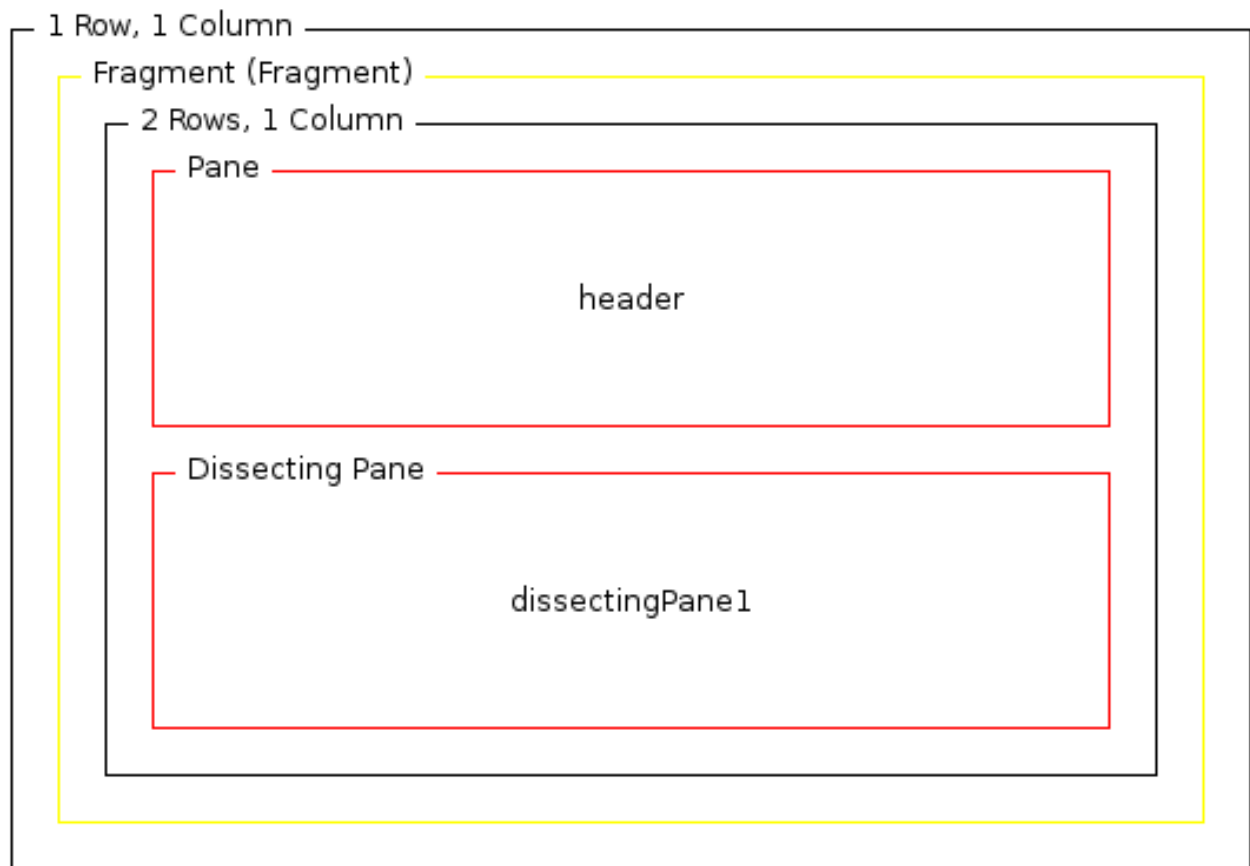
### Attribute

Attribute	Description	Type	Default	Options	Use
expr	An MCS expression	xs:string	none		optional

### Example

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/dissectingpane.mlyt" pageTitle="layout">
  <layout>
    <dissectingpane name="dissectingPanel" linkText="Next" backLinkText="GoBack"/>
  </layout>
  <pane name="header">
    <h3>Welcome</h3>
  </pane>
  <pane name="dissectingPanel">
    <p>Multi-Channel Server (MCS) helps you manage the complexity of delivering
      a wide variety of content to PCs, PDAs, mobile phones, interactive digital TV,
      internet appliances, games consoles, VoiceXML and interactive kiosks. </p>
    <dividehint/>
    <p>To deliver to multiple channels, you need to present content, services and
      applications in a consistent way across all target devices. In MCS you can
      separate application design from device delivery, and build a cost-effective
      and scalable system, by defining policies.</p>
  </pane>
</canvas>
```

The `dissectingpane.mlyt` layout may have the following structure.



# dl

## Purpose

A list normally used to define individual terms.

## Contained by

canvas

## Contains

dl, dt

## Attribute groups

Block attributes, Event attributes, Core attributes

## Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="dl-dt-dd">
  <pane name="background">
    <h3>Useful Links:</h3>
    <dl>
      <dt>The Volantis home page</dt>
      <dd>
        <a href="http://www.volantis.com">www.volantis.com</a>
      </dd>
      <dt>Our support desk</dt>
      <dd>
        <a href="mailto:support@volantis.com">support@volantis.com</a>
      </dd>
      <dt>Our information desk</dt>
      <dd>
        <a href="mailto:moreinfo@volantis.com">moreinfo@volantis.com</a>
      </dd>
    </dl>
  </pane>
</canvas>
```

## dt

### Purpose

Defines a term in a definition list.

**Note:** The use of the `pane` attribute is deprecated.

### Contained by

dl

### Attribute groups

Block attributes, Event attributes, Core attributes

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="dl-dt-dd">
  <pane name="background">
    <h3>Useful Links:</h3>
    <dl>
      <dt>The Volantis home page</dt>
      <dd>
        <a href="http://www.volantis.com">www.volantis.com</a>
      </dd>
      <dt>Our support desk</dt>
      <dd>
        <a href="mailto:support@volantis.com">support@volantis.com</a>
      </dd>
      <dt>Our information desk</dt>
      <dd>
        <a href="mailto:moreinfo@volantis.com">moreinfo@volantis.com</a>
      </dd>
    </dl>
  </pane>
</canvas>
```



## em

### Purpose

Inline element used to show text emphasis in some way, usually in italic.

### Attribute groups

Event attributes, Core attributes

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="em">
  <pane name="background">
    <p>Accept the <em>MCS device repository update service</em> default.</p>
  </pane>
</canvas>
```

## formfragment

### Purpose

Used to set form fragment link text values from the page.

### Contained by

layout

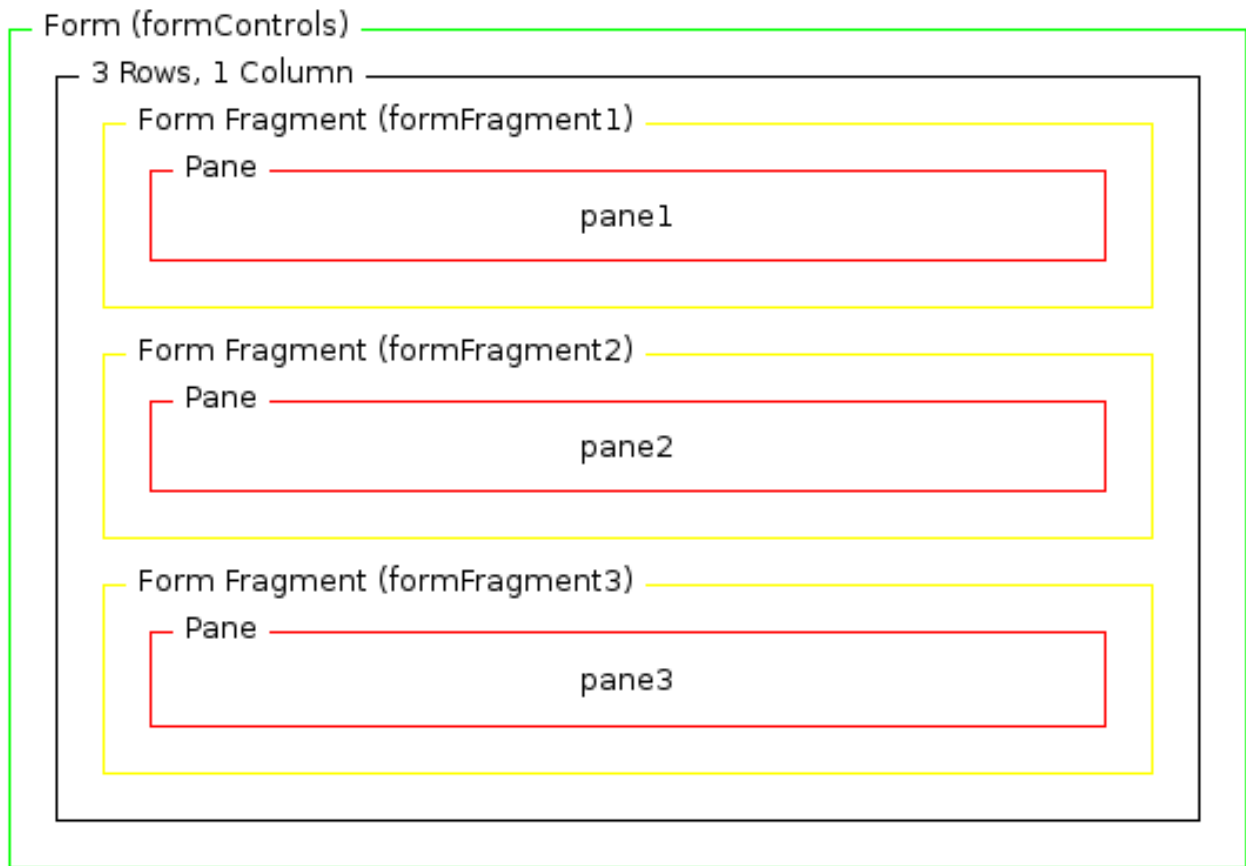
### Attribute group

Fragment attributes

### Example

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/formfragment.mlyt" pageTitle="formfragment">
  <layout>
    <formfragment name="formFragment1" backLinkText="Return to Login"/>
    <formfragment name="formFragment2" linkText="Choose platform"
      backLinkText="Choose different platform"/>
    <formfragment name="formFragment3" linkText="Next"/>
  </layout>
  <xfform name="formControls" action="download.jsp">
    <xftextinput name="login" caption="Login" captionPane="pane1" entryPane="pane1"/>
    <xfsiselect name="select" caption="Choose platform" captionPane="pane2"
      entryPane="pane2" initial="linux">
      <xfoption caption="Windows" value="windows"/>
      <xfoption caption="MacOS X" value="mac"/>
      <xfoption caption="Linux" value="linux"/>
    </xfsiselect>
    <xfaction type="submit" caption="Download" captionPane="pane3" entryPane="pane3"/>
  </xfform>
</canvas>
```

The `formfragment.mlyt` layout may have the following structure.



# fragment

## Purpose

Used to set fragment link text values from a page. If the fragment in the `name` is not in the layout, MCS ignores the element.

## Contained by

layout

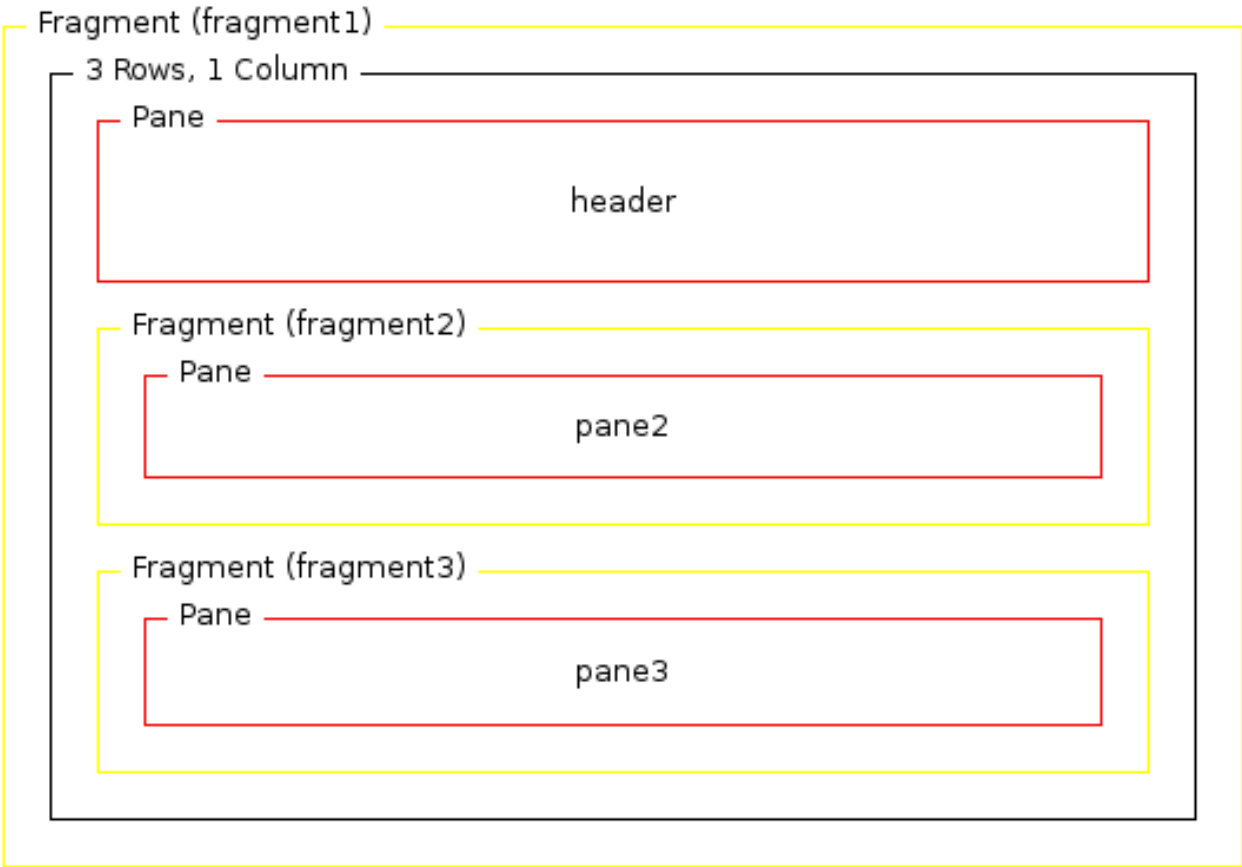
## Attribute group

Fragment attributes

## Example

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/fragment.mlyt" pageTitle="fragment">
  <layout>
    <fragment name="fragment1" backLinkText="Return"/>
    <fragment name="fragment2" linkText="Learn about MCS" backLinkText="Return"/>
    <fragment name="fragment3" linkText="More about MCS" backLinkText="Return"/>
  </layout>
  <pane name="header">
    <h3>Welcome</h3>
  </pane>
  <pane name="pane2">
    <p>Multi-Channel Server (MCS) helps you manage the complexity of delivering a
      wide variety of content to PCs, PDAs, mobile phones, interactive digital TV,
      internet appliances, games consoles, VoiceXML and interactive kiosks. </p>
  </pane>
  <pane name="pane3">
    <p>To deliver to multiple channels, you need to present content, services and
      applications in a consistent way across all target devices. In MCS you can
      separate application design from device delivery, and build a cost-effective
      and scalable system, by defining policies.</p>
  </pane>
</canvas>
```

The `fragment.mlyt` layout may have the following structure.



## h1, h2, h3, h4, h5, h6

### Purpose

Defines headings for sections and their relative level in the heading hierarchy.

### Attribute groups

Block attributes, Event attributes, Core attributes

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="h1, h2, h3, h4, h5, h6">
  <pane name="background">
    <h1> h1 </h1>
    <h2> h2 </h2>
    <h3> h3 </h3>
    <h4> h4 </h4>
    <h5> h5 </h5>
    <h6> h6 </h6>
  </pane>
</canvas>
```

# hr

## Purpose

Block element used to create a horizontal line (or rule).

## Attribute groups

Block attributes, Event attributes, Core attributes

## Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="hr">
  <pane name="background">
    <h1>About XDIME</h1>
    <hr/>
    <p>Browser features can vary considerably.</p>
    <blockquote>For example, some will automatically indent blockquotes
      from the main text margins.</blockquote>
  </pane>
</canvas>
```

# i

## Purpose

Inline element used to display an italic font.

## Attribute groups

Event attributes, Core attributes

## Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="i">
  <pane name="background">
    <p>Accept the <i>MCS device repository update service</i> default.</p>
  </pane>
</canvas>
```



# img

## Purpose

Used to include an image on a canvas.

**Note:** Although the `src`, `url` and `urlc` attributes are individually optional (for technical reasons), one of these three attributes must be used on the element.

## Attributes

Attribute	Description	Type	Default	Options	Use
alt	The text to be displayed if an image cannot be accessed.	xs:string	none		optional
assetURLsuffix	A suffix to add parameters to the URL, for example a query string containing user information. MCS adds the specified suffix to the final variant URL without attempting to interpret it.	xs:string	none		optional
src	The component name of the image to be displayed. The component can have variants of type Generic, DeviceSpecific or Convertible. MCS will process images using ICS servlet in the Media Access Proxy, but it is not possible to override ICS rules.	xs:string	none		optional
url	URL to locate an image file (as distinct from a component name) to be used. See also <code>src</code> .	xs:string	none		optional
urlc	URL to locate a convertible image file (as distinct from a component name) to be used for transcoding. You can also override ICS. See also <code>src</code> .	xs:string	none		optional

## Attribute groups

Block attributes, Event attributes, Core attributes

## Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="img">
  <pane name="logo">
    
  </pane>
</canvas>
```

# include

## Purpose

Used to include XDIME fragments, or dynamic content from the DCI pipeline. If content is not found a processing error is thrown. If the pipeline content is invalid a streaming error is thrown.

## Attributes

Attribute	Description	Type	Default	Options	Use
encoding	The character encoding of the included content. Has no effect when parse is set to 'xml'.	xs:string	none		optional
expr	An MCS expression	xs:string	none		optional
href	The URI to retrieve	xs:anyURI	none		optional
parse	Whether to treat the included content as XML or literal text.	xs:string	xml	xml, text	optional

## Examples

The included content may be treated as XML.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="include">
  <pane name="background">
    <h3>Hello World!!!</h3>
    <include href="test.xdinc" parse="xml"/>
  </pane>
</canvas>
```

Where, test.xdinc contains the following code:

```
<unit>
  <p>Copyright 2009 All rights reserved.</p>
</unit>
```

The included content may also be treated as literal text.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="include">
  <pane name="background">
    <h3>Hello World!!!</h3>
    <p>
      <include href="test.xdinc" parse="text" encoding="utf-8"/>
    </p>
  </pane>
</canvas>
```

Where, test.xdinc contains the following code:

```
Copyright 2009 All rights reserved.
```

The welcome.mlyt layout can be found in the MCS/repository/xml-repository directory.

## kbd

### Purpose

Inline element used to display input supplied by a user.

### Attribute groups

Event attributes, Core attributes

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="kbd">
  <pane name="background">
    <p>To clear the cache:</p>
    <ol>
      <li>Type the <kbd>mcsServerManager</kbd> command followed by the host,
        port and password values</li>
      <li>Enter the <kbd class="option">-flush_all</kbd> option after the command</li>
      <li>Type the <kbd class="option">Enter</kbd> clear the cache</li>
    </ol>
  </pane>
</canvas>
```

# label

## Purpose

Defines a menu label.

## Contained by

menu

## Attribute groups

Block attributes, Event attributes, Core attributes

## Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="menu">
  <menu pane="congratulations" title="Menu">
    <label>Main Menu</label>
    <menuitem href="home.xml" text="Home"/>
    <menuitem href="specials.xml" text="Special Offers"/>
  </menu>
  <pane name="background">
    <p>Welcome</p>
  </pane>
</canvas>
```

# layout

## Purpose

Used to group elements that are used to change the layout associated with a page during execution.

A single `layout` element must precede other markup in a canvas, and contain all the formatting definitions for the layout.

## Contains

dissectingpane, formfragment, fragment

## Contained by

canvas

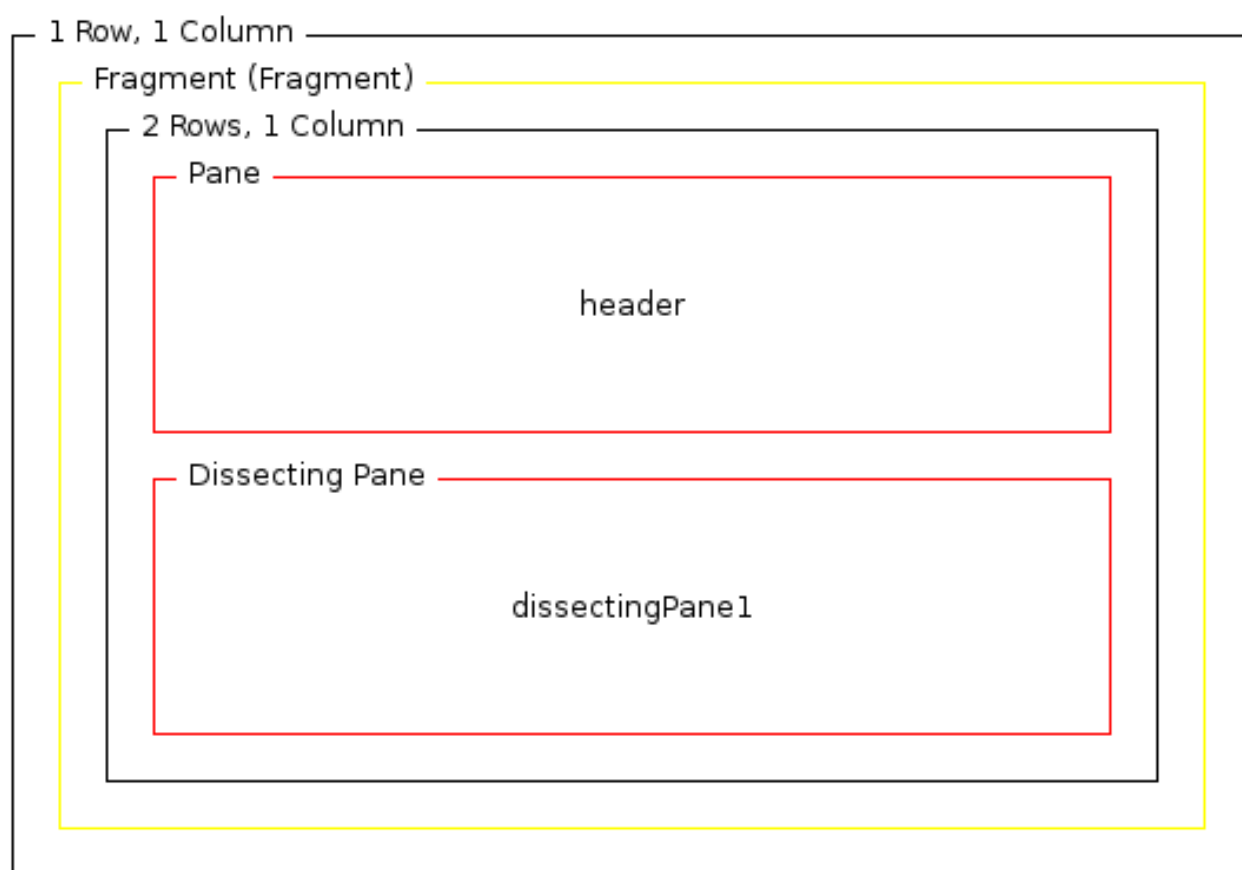
## Attribute

Attribute	Description	Type	Default	Options	Use
expr	An MCS expression	xs:string	none		optional

## Example

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/dissectingpane.mlyt" pageTitle="layout">
  <layout>
    <dissectingpane name="dissectingPanel" linkText="Next" backLinkText="GoBack"/>
  </layout>
  <pane name="header">
    <h3>Welcome</h3>
  </pane>
  <pane name="dissectingPanel">
    <p>Multi-Channel Server (MCS) helps you manage the complexity of delivering
      a wide variety of content to PCs, PDAs, mobile phones, interactive digital TV,
      internet appliances, games consoles, VoiceXML and interactive kiosks. </p>
    <dividehint/>
    <p>To deliver to multiple channels, you need to present content, services and
      applications in a consistent way across all target devices. In MCS you can
      separate application design from device delivery, and build a cost-effective
      and scalable system, by defining policies.</p>
  </pane>
</canvas>
```

The `dissectingpane.mlyt` layout may have the following structure.



## li

### Purpose

A list item in an ordered or unordered list.

**Note:** The use of the `pane` attribute is deprecated.

### Contained by

ol, ul

### Attribute groups

Block attributes, Event attributes, Core attributes

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="ol">
  <pane name="background">
    <p class="taskhead">To add an asset:</p>
    <ol>
      <li>Click Add to add a new asset. An icon is added to the list,
        and the edit controls are enabled. </li>
      <li>Now you can enter a value and other asset attributes.</li>
    </ol>
  </pane>
</canvas>
```

# logo

## Purpose

Used to include a logo on a canvas.

**Note:** Although the `src`, `url` and `urlc` attributes are individually optional (for technical reasons), one of these three attributes must be used on the element.

## Attributes

Attribute	Description	Type	Default	Options	Use
<code>alt</code>	The text to be displayed if an image cannot be accessed.	xs:string	none		optional
<code>assetURLsuffix</code>	A suffix to add parameters to the URL, for example a query string containing user information. MCS adds the specified suffix to the final variant URL without attempting to interpret it.	xs:string	none		optional
<code>src</code>	The component name of the image to be displayed. The component can have variants of type Generic, DeviceSpecific or Convertible. MCS will process images using the ICS servlet in the Media Access Proxy, but it is not possible to override the ICS rules.	xs:string	none		optional
<code>url</code>	URL to locate an image file (as distinct from a component name) to be used. See also <code>src</code> .	xs:string	none		optional
<code>urlc</code>	URL to locate a convertible image file (as distinct from a component name) to be used for transcoding. You can also override ICS. See also <code>src</code> .	xs:string	none		optional

## Attribute groups

Block attributes, Event attributes, Core attributes

## Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="logo">
  <pane name="background">
    <logo src="/welcome/vol_logo.mimg" alt="Volantis Systems Ltd. Logo"/>
  </pane>
</canvas>
```



## menu

### Purpose

Used to create a menu incorporating image and text effects. Menus may be nested. You use a theme to set the orientation of the contained `menuitem` elements.

**Note:** The `menu` element should appear at top-level, inside the `canvas` element. If it is used inside a `pane` element, the output order of the menu and other elements in the pane may not be correct.

### Contains

label, menu, menuitem, menuitemgroup

### Contained by

canvas

### Attributes

Attribute	Description	Type	Default	Options	Use
errmsg	Error message for invalid voice input	xs:string	none		optional
help	Help text for the menu	xs:string	none		optional
prompt	Prompt text for the menu	xs:string	none		optional
type	The type of menu	xs:string	none	plaintext, rollovertext, rolloverimage	deprecated

### Attribute groups

Block attributes, Event attributes, Core attributes

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="menu">
  <menu pane="congratulations" title="Menu">
    <label>Main Menu</label>
    <menuitem href="home.xml" text="Home"/>
    <menuitem href="specials.xml" text="Special Offers"/>
  </menu>
  <pane name="background">
    <p>Welcome</p>
  </pane>
</canvas>
```

## menuitem

### Purpose

Specifies one or more menu items in a menu.

**Note:** You should use CSS color properties and the 'hover' pseudo-class in new markup to replace the deprecated `onColor` and `offColor` attributes.

**Note:** If you don't specify the `pane` attribute (see *Block attributes*) explicitly, the output will appear in the pane associated with the containing menu. This is true unless the target for the menu is a spatial format iterator, in which case MCS will determine the instance automatically.

### Attributes

Attribute	Description	Type	Default	Options	Use
<code>href</code>	The URL to link to if the menu item is selected	xs:string	none		required
<code>image</code>	The name of the image component to use in a fixed-image menu	xs:string	none		optional
<code>offColor</code>	The color to be used for 'off' text	xs:string	none		deprecated
<code>offImage</code>	The image component for the off menu pointer	xs:string	none		optional
<code>onColor</code>	The color to be used for 'on' text	xs:string	none		deprecated
<code>onImage</code>	The image component for the on menu pointer	xs:string	none		optional
<code>prompt</code>	Prompt text	xs:string	none		optional
<code>rolloverImage</code>	The rollover image component to be used	xs:string	none		optional
<code>segment</code>	The segment of a montage in which the output from this element should be placed	xs:string	none		optional
<code>shortcut</code>	Defines a way of giving focus to this element	xs:string	none	A literal, JSP expression, or text component	optional
<code>text</code>	The text of the menu item	xs:string	none		required

### Attribute groups

Block attributes, Event attributes, Focus attributes, Core attributes

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="menu">
  <menu pane="congratulations" title="Menu">
    <label>Main Menu</label>
    <menuitem href="home.xml" text="Home"/>
    <menuitem href="specials.xml" text="Special Offers"/>
  </menu>
  <pane name="background">
    <p>Welcome</p>
  </pane>
</canvas>
```

# menuitemgroup

## Purpose

Container for menu items used to provide visual grouping of a subset in a single pane.

## Contains

menuitem

## Contained by

menu

## Attributes

Attribute	Description	Type	Default	Options	Use
class	Assigns a class name to an element	xs:NMTOKEN	none		optional
expr	An MCS expression	xs:string	none		optional
id	Assigns an identifier to an element	xs:ID	none		optional

## Attribute group

Block attributes

## Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="menuitemgroup">
  <menu pane="congratulations" title="Menu">
    <label>Main Menu</label>
    <menuitemgroup>
      <menuitem href="home.xml" text="Home"/>
      <menuitem href="specials.xml" text="Special Offers"/>
    </menuitemgroup>
    <menuitemgroup>
      <menuitem href="largesys.xml" text="Large Systems"/>
      <menuitem href="medsys.xml" text="Medium Systems"/>
      <menuitem href="smallsys.xml" text="Small Systems"/>
    </menuitemgroup>
  </menu>
  <pane name="background">
    <p>Welcome</p>
  </pane>
</canvas>
```

## message

### Purpose

Container for a single canvas used for a message in Message Preparation Server (MPS).

### Contains

canvas

### Attribute

Attribute	Description	Type	Default	Options	Use
expr	An MCS expression	xs:string	none		optional

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<message>
  <canvas layoutName="/welcome.mlyt" pageTitle="message">
    <p pane="background">Hello World!!!</p>
    <pane name="logo">
      
    </pane>
  </canvas>
</message>
```

## meta

### Purpose

Specifies metadata about a page in name/value pairs. For example, it can be used to specify the keywords that search engines can use to index the page.

You can use specific `name` attribute values to control external content caching. See *Caching XDIME pages* for details of the caching operation, and how you should use these settings.

The `mcs:refresh` `name` attribute value can be used to set the timing and URL values for refresh and redirect. See *Timed redirect and refresh* for details.

**Tip:** The syntax for expressing properties on the `meta` element differs in XDIME 2.

### Contained by

canvas

### Attributes

Attribute	Description	Type	Default	Options	Use
content	The value of the property	xs:ID	none		required
expr	An MCS expression	xs:string	none		optional
http-equiv	The name of the property specified as an HTTP header	xs:ID	none		optional
lang	The language of the page text	xs:string	none		optional
name	The name of the property	xs:string	none		optional

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="meta">
  <meta http-equiv="expires" content="2005-05-22"/>
  <meta name="keywords" content="markup, mcs, multi-channel,
    mobile internet xdime, xml"/>
  <pane name="background">
    <p>Type the <kbd>mcsServerManager</kbd> command followed
      by the host, port and password values.</p>
  </pane>
</canvas>
```

# montage

## Purpose

Defines a montage, used to collect canvases into a set of segments for display on a device.

## Contained by

canvas

## Contained by

segment

## Attribute groups

Page attributes, Core attributes

## Examples

```
<?xml version="1.0" encoding="UTF-8"?>
<montage layoutName="/montage.mlyt">
  <segment name="header" src="test1.xdime"/>
  <segment name="menu" src="test2.xdime"/>
  <segment name="content" src="test3.xdime"/>
</montage>
```

### test1.xdime

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt">
  <p pane="background">
    <b>Welcome</b>
  </p>
</canvas>
```

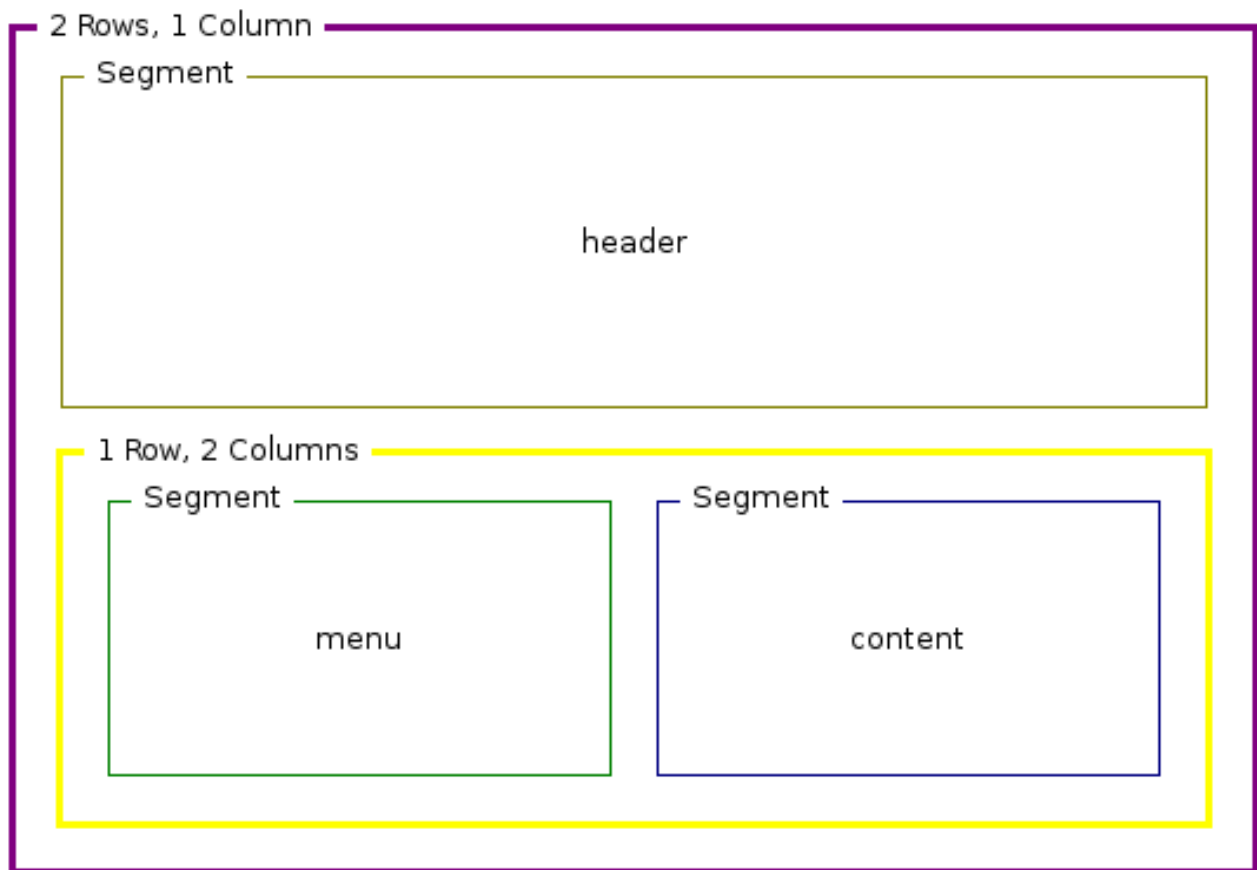
### test2.xdime

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt">
  <pane name="background">
    <p><a href="test1.xdime" segment="content">Getting started</a></p>
    <p><a href="test3.xdime" segment="content">About MCS</a></p>
  </pane>
</canvas>
```

### test3.xdime

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt">
  <p pane="background"> Multi-Channel Server (MCS) helps you manage
    the complexity of delivering a wide variety of content to PCs, PDAs,
    mobile phones, interactive digital TV, internet appliances, games consoles,
    VoiceXML and interactive kiosks. </p>
</canvas>
```

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory. The `montage.mlyt` layout may have the following structure.



# nativemarkup

## Purpose

Used to define device specific markup. The content model is `xs:any`.

If the protocol is not WML, either the `expr` attribute is required, or the `nativemarkup` elements must be within the scope of a `select` element.

If an invalid location is specified in the markup, a warning message is logged and the page will be generated without the data specified for that location.

**Note:** Some `targetLocation` attribute values are WML-specific.

## Contained by

canvas

## Attributes

Attribute	Description	Type	Default	Options	Use
<code>expr</code>	An MCS expression	<code>xs:string</code>	none		optional
<code>pane</code>	The name of the pane if <code>targetLocation</code> is set to 'pane'	<code>xs:string</code>	none		optional
<b><code>targetLocation</code></b>	Specifies where the markup is to be placed in the page. It can be a literal or a text component.	<code>xs:string</code>	none	<code>wml.deck.template</code> , <code>wml.card.timer</code> , <code>wml.card.onevent</code> , <code>wml.card.beforebody</code> , <code>here</code> , <code>pane</code> , <code>html.head</code> , <code>vdxml.head</code>	required

## Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="nativemarkup">
  <nativemarkup targetLocation="pane" pane="congratulations">
    <wml>
      <card id="card1" title="WML only">
        <p>Hello World!</p>
      </card>
    </wml>
  </nativemarkup>
  <pane name="background">
    <h3>Welcome</h3>
  </pane>
</canvas>
```



## noscript

### Purpose

Used to replace the output of a script element when a device does not support scripting, when no script variant is available, or when the user has disabled scripting.

**Note:** MCS outputs the content of the XDIME `noscript` element to *all* devices. If the device is known to handle JavaScript, then the content is placed in an HTML `noscript` element.

### Contained by

canvas

### Attribute

Attribute	Description	Type	Default	Options	Use
idref	The identifier of the script element to be replaced	xs:string	none		optional

### Attribute groups

Event attributes, Core attributes

### Example

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="noscript">
  <pane name="background">
    <h3>Welcome</h3>
    <script id="scripttest" src="{/script123.mscr}"/>
    <noscript idref="scripttest">
      <p>We're sorry, but something went wrong!</p>
    </noscript>
  </pane>
</canvas>
```

# ol

## Purpose

Defines an ordered list.

## Contains

li

## Attributes

Attribute	Description	Type	Default	Options	Use
start	The number to start the list with.	xs:integer	none		deprecated
type	Defines the list number style	xs:string	none	1, a, A, i, I	deprecated

## Attribute groups

Block attributes, Event attributes, Core attributes

## Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="ol">
  <pane name="background">
    <p class="taskhead">To add an asset:</p>
    <ol>
      <li>Click Add to add a new asset. An icon is added to the list,
        and the edit controls are enabled. </li>
      <li>Now you can enter a value and other asset attributes.</li>
    </ol>
  </pane>
</canvas>
```

## otherwise

### Purpose

Conditional markup that is only rendered if none of the `when` elements in the containing `select` element has been matched.

### Contained by

`select`

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="select">
  <pane name="background">
    <select precept="matchevery">
      <when expr="device:getPolicyValue('supports.client.framework')='true'">
        <p>This device supports Client Framework.</p>
      </when>
      <otherwise>
        <p>This device does not support Client Framework.</p>
      </otherwise>
    </select>
  </pane>
</canvas>
```

## p

### Purpose

Defines a paragraph.

### Contained by

canvas

### Attribute groups

Block attributes, Event attributes, Core attributes

### Example

The welcome.mlyt layout can be found in the MCS/repository/xml-repository directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="p">
  <pane name="background">
    <p>Type the <kbd>mcsServerManager</kbd> command
      followed by the host, port and password values.</p>
  </pane>
</canvas>
```

## pane

### Purpose

A container for a group of elements in the same pane. Alternatively you can use the `pane` attribute on a block element to get the same result.

### Attribute

Attribute	Description	Type	Default	Options	Use
<b>name</b>	The name of the pane.	xs:string	none		required

### Attribute groups

Event attributes, Core attributes

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="pane">
  <pane name="background">
    <p>Type the <kbd>mcsServerManager</kbd> command
      followed by the host, port and password values.</p>
  </pane>
</canvas>
```

# phonenumber

## Purpose

Defines a phone number. If the target device supports dialing from links, MCS generates a link; otherwise nothing is output. If there is no content, the value of the required `fullNumber` attribute is output.

## Contained by

canvas

## Attribute

Attribute	Description	Type	Default	Options	Use
<code>fullNumber</code>	Specifies the full number to be dialed	xs:string	none		required

## Attribute groups

Event attributes, Focus attributes, Hypertext attributes, Navigation attributes, Core attributes

## Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="phonenumber">
  <pane name="background">
    <phonenumber fullNumber="+44 0800 442442">
      Call for special offer prices!
    </phonenumber>
  </pane>
</canvas>
```

## pre

### Purpose

Defines content that is to be rendered with whitespace preserved, and without reformatting.

### Contained by

canvas

### Attribute groups

Block attributes, Event attributes, Core attributes

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="pre">
  <pane name="background">
    <pre>
      &lt;p pane="&quot;Topic&quot;&gt;
        The Multi-Channel Server (MCS) helps you manage the
        complexity of delivering a wide variety of content to
        many types of device.&lt;/p&gt;</pre>
    </pre>
  </pane>
</canvas>
```

## region

### Purpose

Specifies a region within a portal canvas.

### Contained by

canvas

### Contains

canvas

### Attributes

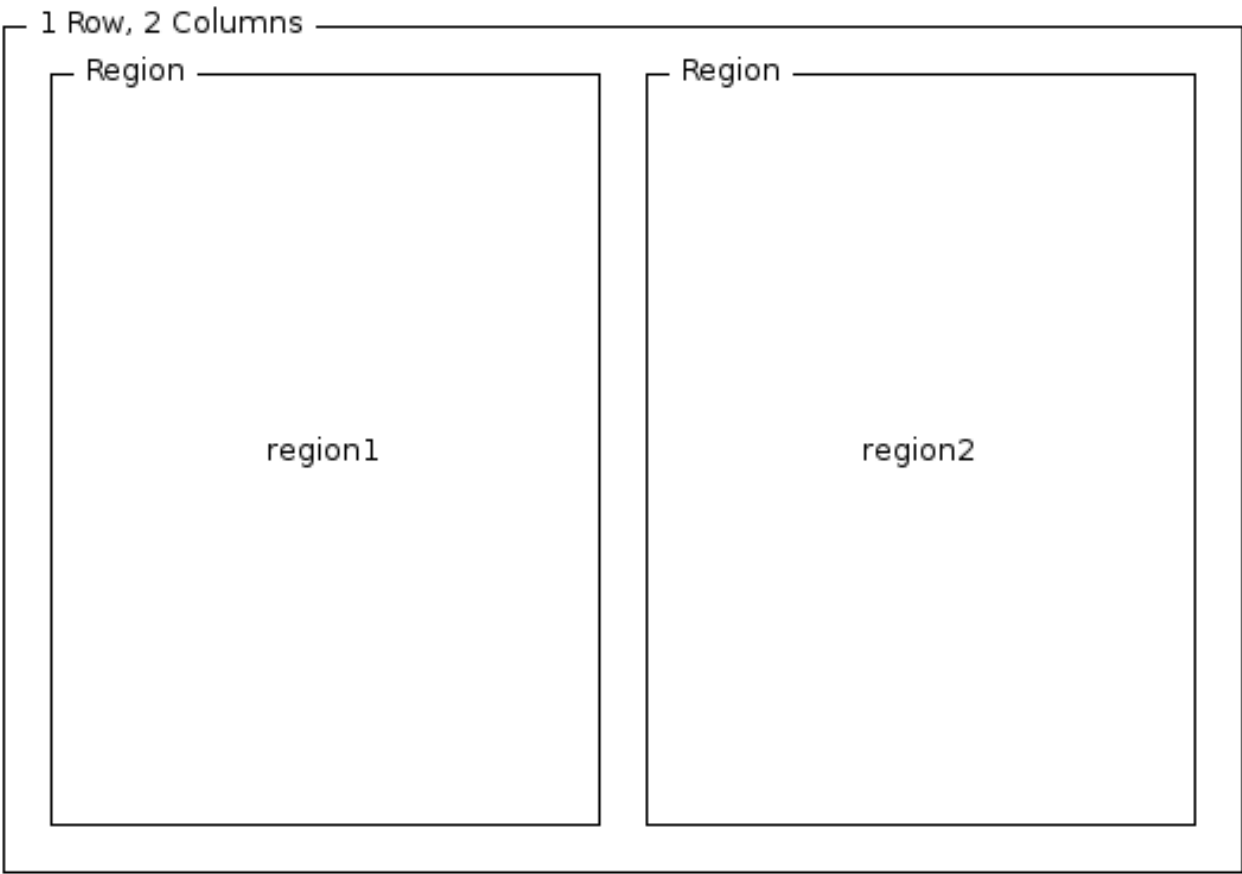
Attribute	Description	Type	Default	Options	Use
expr	An MCS expression	xs:string	none		optional
name	The name of the region in which a portlet is to be rendered	xs:string	none		required

### Example

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas type="portal" layoutName="/region.mlyt" pageTitle="region">
  <region name="region1">
    <canvas layoutName="/welcome.mlyt" pageTitle="address" type="portlet">
      <pane name="background">
        <h3>region1</h3>
      </pane>
    </canvas>
  </region>
  <region name="region2">
    <canvas layoutName="/welcome.mlyt" pageTitle="address" type="portlet">
      <pane name="background">
        <h3>region2</h3>
      </pane>
    </canvas>
  </region>
</canvas>
```

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory. The `region.mlyt` layout may have the following structure.





## samp

### Purpose

Inline element used to display output from a program or script.

### Attribute groups

Event attributes, Core attributes

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="samp">
  <pane name="background">
    <p>You'll be prompted with <samp>Please enter your name:</samp>.</p>
  </pane>
</canvas>
```

# script

## Purpose

Used to contain or refer to a script.

**Note:** Contained scripts are deprecated, but are supported for backward compatibility. You should use the `src` attribute to refer to a script component or file.

## Attribute group

Core attributes

## Attributes

Attribute	Description	Type	Default	Options	Use
charSet	Character encoding of the script if a script is in a file	xs:string	none		optional
defer	A hint that the script will not generate output. If set to 'true', execution can be deferred.	xs:boolean	none		optional
language	The language of the script if a script file	xs:string	none		deprecated
src	Name of script component or location of an external script file	xs:string	none		optional
type	The content type of the script if a script file	xs:string	none		optional

## Examples

The first example refers to a script component.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="script">
  <pane name="background">
    <h3>Welcome</h3>
    <script id="scripttest" src="{/script.mscr}"/>
  </pane>
</canvas>
```

The `script.mscr` component contains the following JavaScript code:

```
document.write ("This text has been generated by the script.mscr script component.");
```

The second example refers to a script file and uses the `type` attribute.

```
<script
  src="../../scripts/release.js"
  type="text/javascript"/>
```

## segment

### Purpose

Specifies a segment in a montage.

### Contained by

montage

### Attribute group

Core attributes

### Attributes

Attribute	Description	Type	Default	Options	Use
longDesc	The URL of a longer description of the segment than the content of the <code>title</code> attribute	xs:string	none		optional
name	The name of the segment	xs:string	none		required
src	The URL of the canvas to be loaded into the segment	xs:string	none		required

### Examples

```
<?xml version="1.0" encoding="UTF-8"?>
<montage layoutName="/montage.mlyt">
  <segment name="header" src="test1.xdime"/>
  <segment name="menu" src="test2.xdime"/>
  <segment name="content" src="test3.xdime"/>
</montage>
```

#### test1.xdime

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt">
  <p pane="background">
    <b>Welcome</b>
  </p>
</canvas>
```

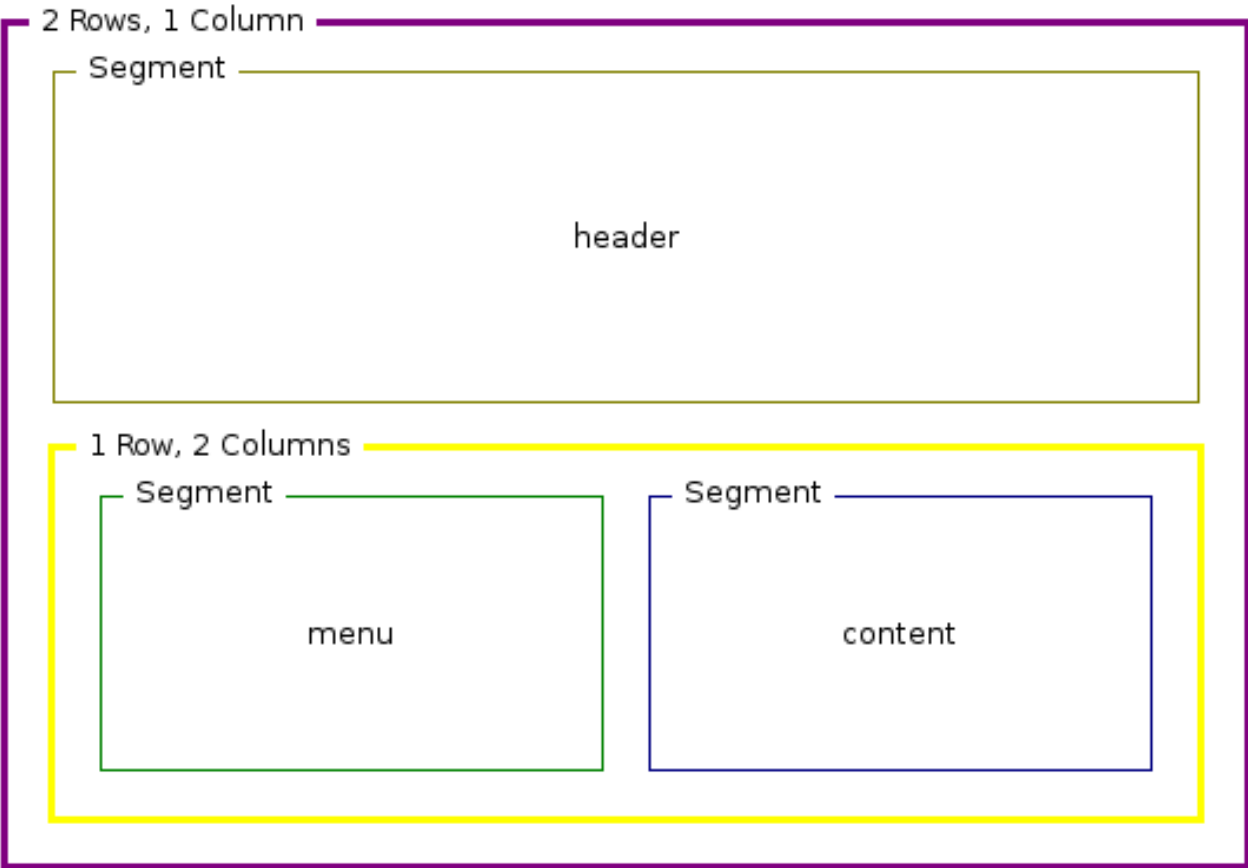
#### test2.xdime

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt">
  <pane name="background">
    <p><a href="test1.xdime" segment="content">Getting started</a></p>
    <p><a href="test3.xdime" segment="content">About MCS</a></p>
  </pane>
</canvas>
```

#### test3.xdime

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt">
  <p pane="background"> Multi-Channel Server (MCS) helps you manage
    the complexity of delivering a wide variety of content to PCs, PDAs,
    mobile phones, interactive digital TV, internet appliances, games consoles,
    VoiceXML and interactive kiosks. </p>
</canvas>
```

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory. The `montage.mlyt` layout may have the following structure.



## select

### Purpose

Container for conditional markup elements. The content consists of one or more `when` elements and an optional `otherwise` element.

### Contained by

canvas

### Contains

otherwise, when

### Attributes

Attribute	Description	Type	Default	Options	Use
expr	An MCS expression	xs:string	none		optional
precept	Determines whether only the first, or every matching when element is selected for processing	xs:string	matchfirst	matchfirst, matchevery	optional

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="select">
  <pane name="background">
    <select precept="matchevery">
      <when expr="device:getPolicyValue('supports.client.framework')='true'">
        <p>This device supports Client Framework.</p>
      </when>
      <otherwise>
        <p>This device does not support Client Framework.</p>
      </otherwise>
    </select>
  </pane>
</canvas>
```

## small

### Purpose

Used to reduce the font size of the element content, compared to the surrounding text. The rendering depends on the browser in use.

### Attribute groups

Event attributes, Core attributes

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="small">
  <pane name="background">
    <p>You can <small>reduce</small> the font size with the
      <code>small</code> element.</p>
  </pane>
</canvas>
```

## span

### Purpose

Inline element that associates the content with a style or event.

**Note:** The `src` attribute works only with VoiceXML.

### Attribute groups

Event attributes, Core attributes

### Attribute

Attribute	Description	Type	Default	Options	Use
<code>src</code>	A component reference or URI. Embeds a prerecorded audio file that is used in place of synthesizing a VoiceXML text.		none		optional

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="span">
  <style type="text/css">
    .code {
      color:red;
    }
  </style>
  <pane name="background">
    <p>The <span class="code">span</span> element applies style to inline content.</p>
  </pane>
</canvas>
```



## strong

### Purpose

Inline element used to show additional text emphasis over the `em` element, usually in bold.

### Attribute groups

Event attributes, Core attributes

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="strong">
  <pane name="background">
    <p>You <strong>must</strong> set the 'value' parameter.</p>
  </pane>
</canvas>
```

## style

### Purpose

Container for style rules. It must be the first child of the containing `canvas` element. Rules in this element will override properties set in the theme for the canvas.

### Contained by

canvas

### Attribute

Attribute	Description	Type	Default	Options	Use
type	The type of stylesheet	xs:string	none		optional

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="style">
  <style type="text/css">
    .code {
      color:red;
    }
  </style>
  <pane name="background">
    <p>The <span class="code">span</span> element applies
      style to inline content.</p>
  </pane>
</canvas>
```

## sub

### Purpose

Inline element used to render text as subscript.

### Attribute groups

Event attributes, Core attributes

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="sub">
  <pane name="background">
    <p>Water (H<sub>2</sub>O) is the most abundant molecule.</p>
  </pane>
</canvas>
```

## sup

### Purpose

Inline element used to render text as superscript.

### Attribute groups

Event attributes, Core attributes

### Example

The welcome.mlyt layout can be found in the MCS/repository/xml-repository directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="sup">
  <pane name="background">
    <p>M<sup>me</sup> Segolene Royal, who lost
      the race to be President of France, spoke of her
      disappointment.</p>
  </pane>
</canvas>
```

## table

### Purpose

Container for a table.

### Contains

tbody, tfoot, thead, tr

### Contained by

canvas

### Attribute groups

Block attributes, Event attributes, Core attributes

### Attribute

Attribute	Description	Type	Default	Options	Use
cols	The number of columns in the table	xs:positiveInteger	none		optional

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="table">
  <pane name="background">
    <table cols="2">
      <thead>
        <tr>
          <th>Attribute</th>
          <th>Description</th>
        </tr>
      </thead>
      <tfoot>
        <tr>
          <th>Attribute</th>
          <th>Description</th>
        </tr>
      </tfoot>
      <tbody keepTogether="true">
        <tr>
          <td>layoutName</td>
          <td>Name of the layout to use</td>
        </tr>
      </tbody>
    </table>
  </pane>
</canvas>
```

## tbody

### Purpose

Container for a table body rows.

**Note:** The use of the `pane` attribute is deprecated.

### Contains

tr

### Contained by

table

### Attribute groups

Block attributes, Event attributes, Core attributes

### Attribute

Attribute	Description	Type	Default	Options	Use
keepTogether	Whether or not to keep the rows in the body together when dissecting panes	xs:boolean	false		optional

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="table">
  <pane name="background">
    <table cols="2">
      <thead>
        <tr>
          <th>Attribute</th>
          <th>Description</th>
        </tr>
      </thead>
      <tfoot>
        <tr>
          <th>Attribute</th>
          <th>Description</th>
        </tr>
      </tfoot>
      <tbody keepTogether="true">
        <tr>
          <td>layoutName</td>
          <td>Name of the layout to use</td>
        </tr>
      </tbody>
    </table>
  </pane>
</canvas>
```

# td

## Purpose

Container for table data.

**Note:** The use of the `pane` attribute is deprecated.

## Contained by

tr

## Attribute groups

Event attributes, Focus attributes, Core attributes

## Attributes

Attribute	Description	Type	Default	Options	Use
align	The horizontal alignment of the content	xs:string	none	left, center, right, justify	deprecated
bgcolor	The background color	xs:string			deprecated
colspan	The number of columns spanned by the cell	xs:positiveInteger	none		optional
height	The height of the cell	xs:string	none		deprecated
width	The width of the cell	xs:string	none		deprecated
nowrap	If 'true' is used, the cell content does not wrap	xs:string	none	true, false	deprecated
rowspan	The number of rows spanned by the cell	xs:positiveInteger	none		optional
valign	The vertical alignment of the content	xs:string	none	top, middle, bottom, baseline	deprecated

## Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="table">
  <pane name="background">
    <table cols="2">
      <thead>
        <tr>
          <th>Attribute</th>
          <th>Description</th>
        </tr>
      </thead>
      <tfoot>
        <tr>
          <th>Attribute</th>
          <th>Description</th>
        </tr>
      </tfoot>
      <tbody keepTogether="true">
        <tr>
          <td>layoutName</td>
          <td>Name of the layout to use</td>
        </tr>
      </tbody>
    </table>
  </pane>
</canvas>
```

## tfoot

### Purpose

Container for table footer rows.

**Note:** The use of the `pane` attribute is deprecated.

### Contains

tr

### Contained by

table

### Attribute groups

Block attributes, Event attributes, Core attributes

### Attribute

Attribute	Description	Type	Default	Options	Use
align	The horizontal alignment of the content	xs:string	none	left, center, right, justify	deprecated

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="table">
  <pane name="background">
    <table cols="2">
      <thead>
        <tr>
          <th>Attribute</th>
          <th>Description</th>
        </tr>
      </thead>
      <tfoot>
        <tr>
          <th>Attribute</th>
          <th>Description</th>
        </tr>
      </tfoot>
      <tbody keepTogether="true">
        <tr>
          <td>layoutName</td>
          <td>Name of the layout to use</td>
        </tr>
      </tbody>
    </table>
  </pane>
</canvas>
```



# th

## Purpose

Defines a table header cell.

**Note:** The use of the `pane` attribute is deprecated.

## Contained by

tr

## Attribute groups

Event attributes, Focus attributes, Core attributes

## Attributes

Attribute	Description	Type	Default	Options	Use
align	The horizontal alignment of the content	xs:string	none	left, center, right, justify	deprecated
bgcolor	The background color	xs:string			deprecated
colspan	The number of columns spanned by the cell	xs:positiveInteger	none		optional
height	The height of the cell	xs:string	none		deprecated
width	The width of the cell	xs:string	none		deprecated
nowrap	If 'true' is used, the cell content does not wrap	xs:string	none	true, false	deprecated
rowspan	The number of rows spanned by the cell	xs:positiveInteger	none		optional
valign	The vertical alignment of the content	xs:string	none	top, middle, bottom, baseline	deprecated

## Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="table">
  <pane name="background">
    <table cols="2">
      <thead>
        <tr>
          <th>Attribute</th>
          <th>Description</th>
        </tr>
      </thead>
      <tfoot>
        <tr>
          <th>Attribute</th>
          <th>Description</th>
        </tr>
      </tfoot>
      <tbody keepTogether="true">
        <tr>
          <td>layoutName</td>
          <td>Name of the layout to use</td>
        </tr>
      </tbody>
    </table>
  </pane>
</canvas>
```

## thead

### Purpose

Container for table header rows.

**Note:** The use of the `pane` attribute is deprecated.

### Contains

`tr`

### Contained by

`table`

### Attribute groups

Block attributes, Event attributes, Core attributes

### Attribute

Attribute	Description	Type	Default	Options	Use
<code>align</code>	The horizontal alignment of the content	<code>xs:string</code>	<code>none</code>	<code>left, center, right, justify</code>	deprecated

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="table">
  <pane name="background">
    <table cols="2">
      <thead>
        <tr>
          <th>Attribute</th>
          <th>Description</th>
        </tr>
      </thead>
      <tfoot>
        <tr>
          <th>Attribute</th>
          <th>Description</th>
        </tr>
      </tfoot>
      <tbody keepTogether="true">
        <tr>
          <td>layoutName</td>
          <td>Name of the layout to use</td>
        </tr>
      </tbody>
    </table>
  </pane>
</canvas>
```

## timer

### Purpose

Used to time events.

### Attributes

Attribute	Description	Type	Default	Options	Use
class	Assigns a class name to an element.	xs:NMTOKEN	none		optional
<b>duration</b>	The duration in milliseconds	xs:string	none		required
expr	An MCS expression	xs:string	none		optional
id	Assigns an identifier to an element.	xs:ID	none		optional

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="timer" ontimer="{/HelloWorld.mscr}">
  <timer duration="4000"/>
  <pane name="background">
    <h3>Welcome</h3>
  </pane>
</canvas>
```

## tr

### Purpose

Defines a row in a table.

**Note:** The use of the `pane` attribute is deprecated.

### Contained by

tbody, tfoot, thead

### Contains

td, th

### Attribute groups

Block attributes, Event attributes, Core attributes

### Attributes

Attribute	Description	Type	Default	Options	Use
align	The horizontal alignment of the content	xs:string	none	left, center, right, justify	deprecated
bgcolor	The background color	xs:string			deprecated
valign	The vertical alignment of the content	xs:string	none	top, middle, bottom, baseline	deprecated

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="table">
  <pane name="background">
    <table cols="2">
      <thead>
        <tr>
          <th>Attribute</th>
          <th>Description</th>
        </tr>
      </thead>
      <tfoot>
        <tr>
          <th>Attribute</th>
          <th>Description</th>
        </tr>
      </tfoot>
      <tbody keepTogether="true">
        <tr>
          <td>layoutName</td>
          <td>Name of the layout to use</td>
        </tr>
      </tbody>
    </table>
  </pane>
</canvas>
```

## tt

### Purpose

Inline element used to display a monospace font.

### Attribute groups

Event attributes, Core attributes

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="tt">
  <pane name="background">
    <p>The <tt>span</tt> element applies style to inline content.</p>
  </pane>
</canvas>
```

## u

### Purpose

Inline element used to display underlined text.

**Note:** This element is deprecated. CSS stylesheets should be used in preference.

### Attribute groups

Event attributes, Core attributes

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="u">
  <pane name="background">
    <p>You should set the configuration
      values <u>after</u> you install the server.</p>
  </pane>
</canvas>
```

# ul

## Purpose

Defines an unordered list.

## Contains

li

## Attribute

Attribute	Description	Type	Default	Options	Use
type	Defines the list bullet style	xs:string	none	circle, disc, square	optional

## Attribute groups

Block attributes, Event attributes, Core attributes

## Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="ul">
  <pane name="background">
    <p>The wizard allows you to define:</p>
    <ul>
      <li>A component name and its location in your project folders</li>
      <li>Attributes or references to existing project components</li>
    </ul>
  </pane>
</canvas>
```

# unit

## Purpose

Container for any XDIME element. You can use the `unit` element as a wrapper for external files to included into the main body without the need for `canvas` or `montage` elements to provide a root elements in the fragments.

## Contains

`canvas`, `montage`, `segment`

## Examples

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="include">
  <pane name="background">
    <h3>Hello World!!!</h3>
    <include href="test.xdinc" parse="xml"/>
  </pane>
</canvas>
```

Where, `test.xdinc` contains the following code:

```
<unit>
  <p>Copyright 2009 All rights reserved.</p>
</unit>
```



## when

### Purpose

Container for conditional markup.

The content is selected for processing if the `expr` value is matched and the `precept` on the containing `select` element places the `when` element in scope.

### Contained by

`select`

### Attribute

Attribute	Description	Type	Default	Options	Use
<code>expr</code>	An MCS expression	<code>xs:string</code>	none		optional

### Example

The `welcome.mlyt` layout can be found in the `MCS/repository/xml-repository` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/welcome.mlyt" pageTitle="select">
  <pane name="background">
    <select precept="matchevery">
      <when expr="device:getPolicyValue('supports.client.framework')='true'">
        <p>This device supports Client Framework.</p>
      </when>
      <otherwise>
        <p>This device does not support Client Framework.</p>
      </otherwise>
    </select>
  </pane>
</canvas>
```

## xfaction

### Purpose

Used to create controls that cause specific actions both inside and outside forms.

You can use style properties in a theme on the containing canvas to specify how action controls and images are displayed. See *Styling forms* for more information.

Inside a form, the actions can include submitting the form and resetting the fields in it.

Outside forms, the `type` attribute is set to *perform* to indicate that the action is to be performed and is not a submit or reset action.

### Contained by

xfform

### Attribute groups

Event attributes, Form attributes, Focus attributes, Navigation attributes, Core attributes

### Attributes

Attribute	Description	Type	Default	Options	Use
name	The name of the action	xs:string	none		optional
type	The action type associated with the control	xs:string	none	submit, reset, perform	required
value	The value of the control	xs:string	none		optional

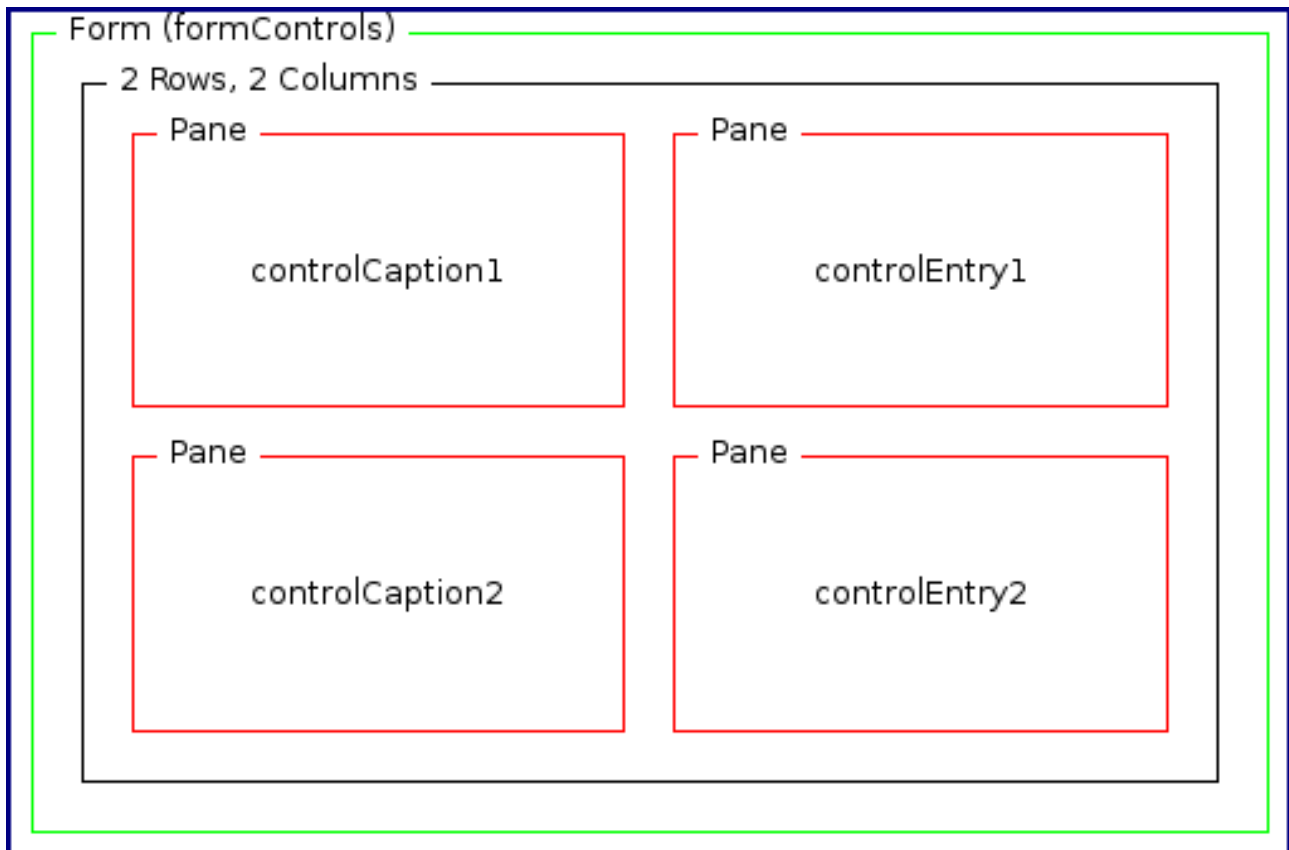
### Examples

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/forms.mlyt" pageTitle="xfaction">
  <xfform name="formControls" action="download.jsp">
    <xfsiselect name="select" caption="Choose platform" captionPane="controlCaption1"
      entryPane="controlEntry1" initial="linux">
      <xfoption caption="Windows" value="windows"/>
      <xfoption caption="MacOS X" value="mac"/>
      <xfoption caption="Linux" value="linux"/>
    </xfsiselect>
    <xfaction type="submit" caption="Submit" captionPane="controlCaption2"
      entryPane="controlEntry2"/>
    <xfaction type="reset" caption="Reset" captionPane="controlCaption2"
      entryPane="controlEntry2"/>
  </xfform>
  <xfaction type="perform" caption="Perform" captionPane="controlCaption2"
    entryPane="controlEntry2"/>
</canvas>
```

For the purpose of this demonstration submitted data will be processed by a simple JSP.

```
<?xml version="1.0" encoding="UTF-8"?>
<%@ page import="com.volantis.mcs.servlet.*" %>
<%
response.setContentType("x-application/vnd.xdime+xml");
String platform = MarinerServletRequestContext.findInstance(request).
  getParameter("select");
%>
<canvas layoutName="/welcome.mlyt" pageTitle="Forms in XDIME 1">
  <pane name="background">
    <p>You've chosen <%=platform%>!!</p>
  </pane>
</canvas>
```

The `forms.mlyt` layout may have the following structure.



## xfboolean

### Purpose

Defines a control to set binary values, for example a checkbox on a PC browser or a pair of radio buttons.

**Note:** The `trueValue` and `falseValue` attributes can be either a single text string or a set of comma separated values. If a single text string is used, the attribute forms the label for the control. If the content is a set of comma separated values, the first is used as a label, and all values act as a grammar for VoiceXML response.

### Contained by

xform

### Attribute groups

Event attributes, Form attributes, Focus attributes, Navigation attributes, Core attributes

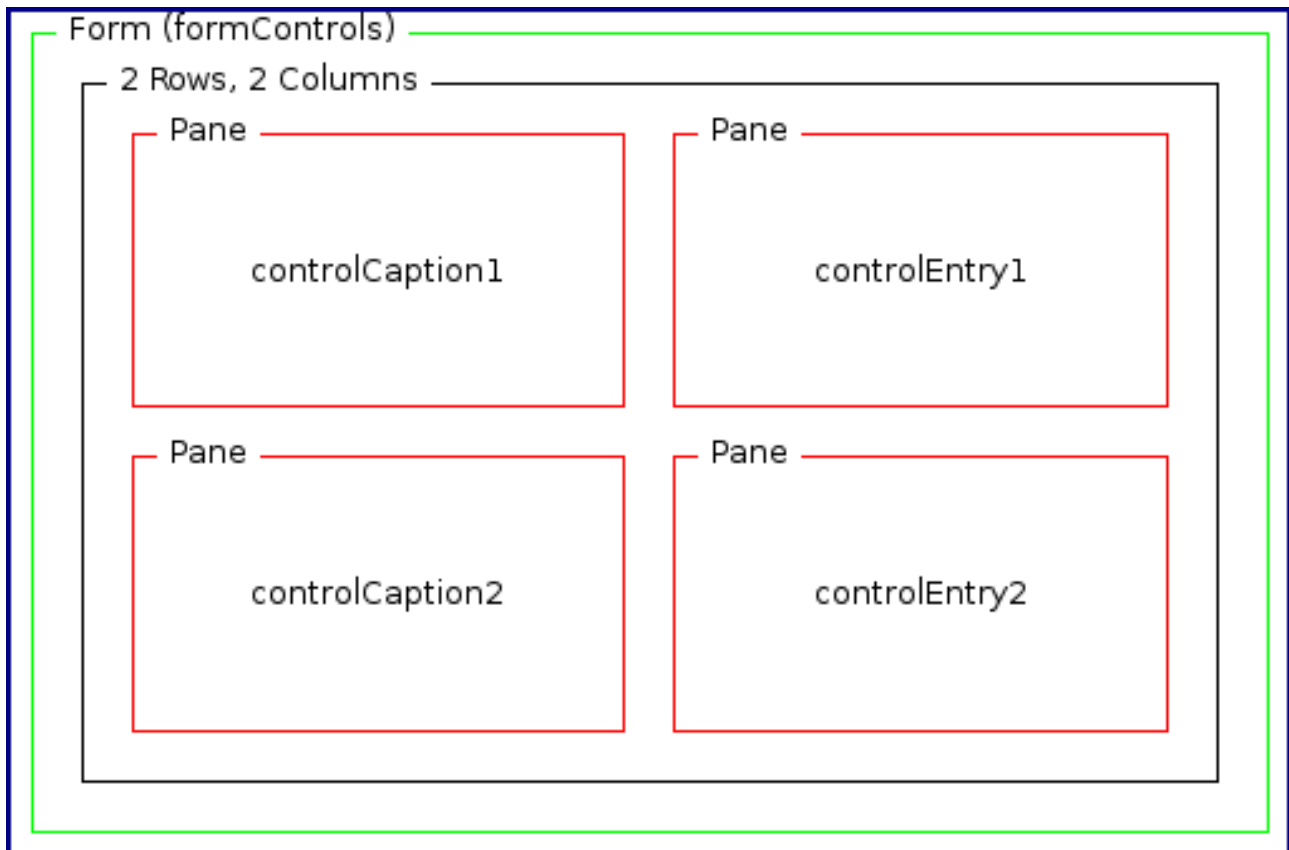
### Attributes

Attribute	Description	Type	Default	Options	Use
errmsg	The error message to be issued if the control fails validation	xs:string	none		optional
falseValue	The text displayed when the control is set to false	xs:string	0		optional
initial	The initial value of the control	xs:integer	none		optional
name	The name of the control and the form variable return to the server	xs:string	none		required
trueValue	The text displayed when the control is set to true	xs:string	1		optional

### Example

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/forms.mlyt" pageTitle="xfboolean">
  <xform name="formControls" action="test.jsp">
    <xfboolean
      name="mailnews"
      caption="Send me news updates"
      captionPane="controlCaption1"
      entryPane="controlEntry1"
      falseValue="No"
      trueValue="Yes"
      initial="1"/>
  </xform>
</canvas>
```

The `forms.mlyt` layout may have the following structure.



## xfcontent

### Purpose

Used to add XDIME content to a form.

### Contained by

xfform

### Attribute

Attribute	Description	Type	Default	Options	Use
expr	An MCS expression	xs:string	none		optional

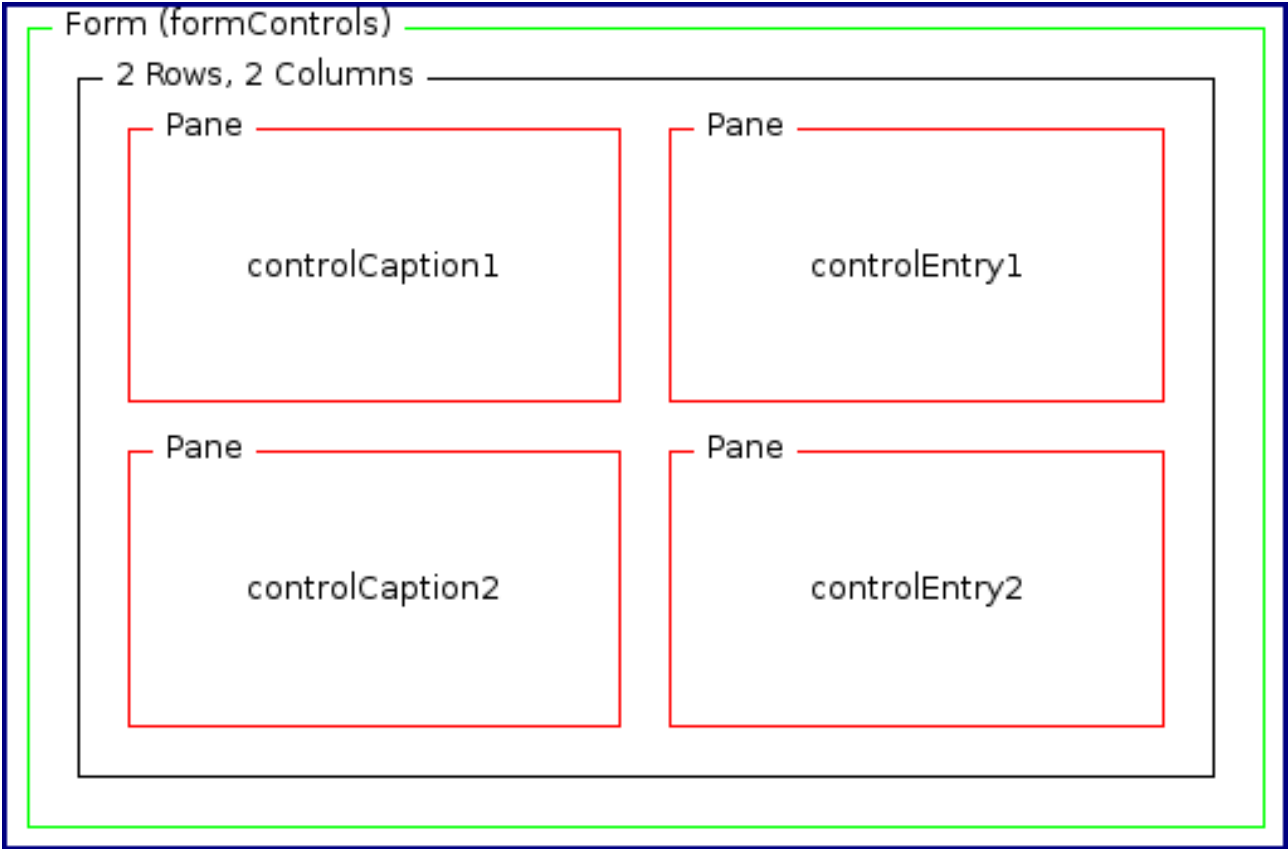
### Attribute group

Block attributes

### Example

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/forms.mlyt" pageTitle="xfcontent">
  <xfform name="formControls" action="download.jsp">
    <pane name="controlCaption1">
      <xfcontent>
        <p>To download an upgrade to version <b>6.2</b>, please choose from
          the following options.</p>
      </xfcontent>
    </pane>
    <xfsiselect name="select" caption="Choose platform" captionPane="controlCaption2"
      entryPane="controlEntry2" initial="linux">
      <xfoption caption="Windows" value="windows"/>
      <xfoption caption="MacOS X" value="mac"/>
      <xfoption caption="Linux" value="linux"/>
    </xfsiselect>
  </xfform>
</canvas>
```

The `forms.mlyt` layout may have the following structure.



## xfform

### Purpose

A block-level element used to define a form that can contain one or more of any of the subelements.

### Contains

pane, xfaction, xfboolean, xfcontent, xfimplicit, xfmuselect, xfsiselect, xftextinput, xfupload

### Attributes

Attribute	Description	Type	Default	Options	Use
action	The URL of the application that will process the input collected from the form	xs:string	none		required
class	Assigns a class name to an element.	xs:NMTOKEN	none		optional
expr	An MCS expression	xs:string	none		optional
help	Form level help	xs:string	none		optional
id	Assigns an identifier to an element.	xs:ID	none		optional
method	The HTTP method will be used to submit the form data set	xs:string	none	get, post	optional
name	The name of the form	xs:string	none		required
onreset	The script component to execute when the Reset button is clicked	xs:string	none		optional
onsubmit	The script component to execute when the Submit button is clicked	xs:string	none		optional
prompt	Form level prompt	xs:string	none		optional
segment	The segment in a montage where the form should be displayed	xs:string	none		optional

### Examples

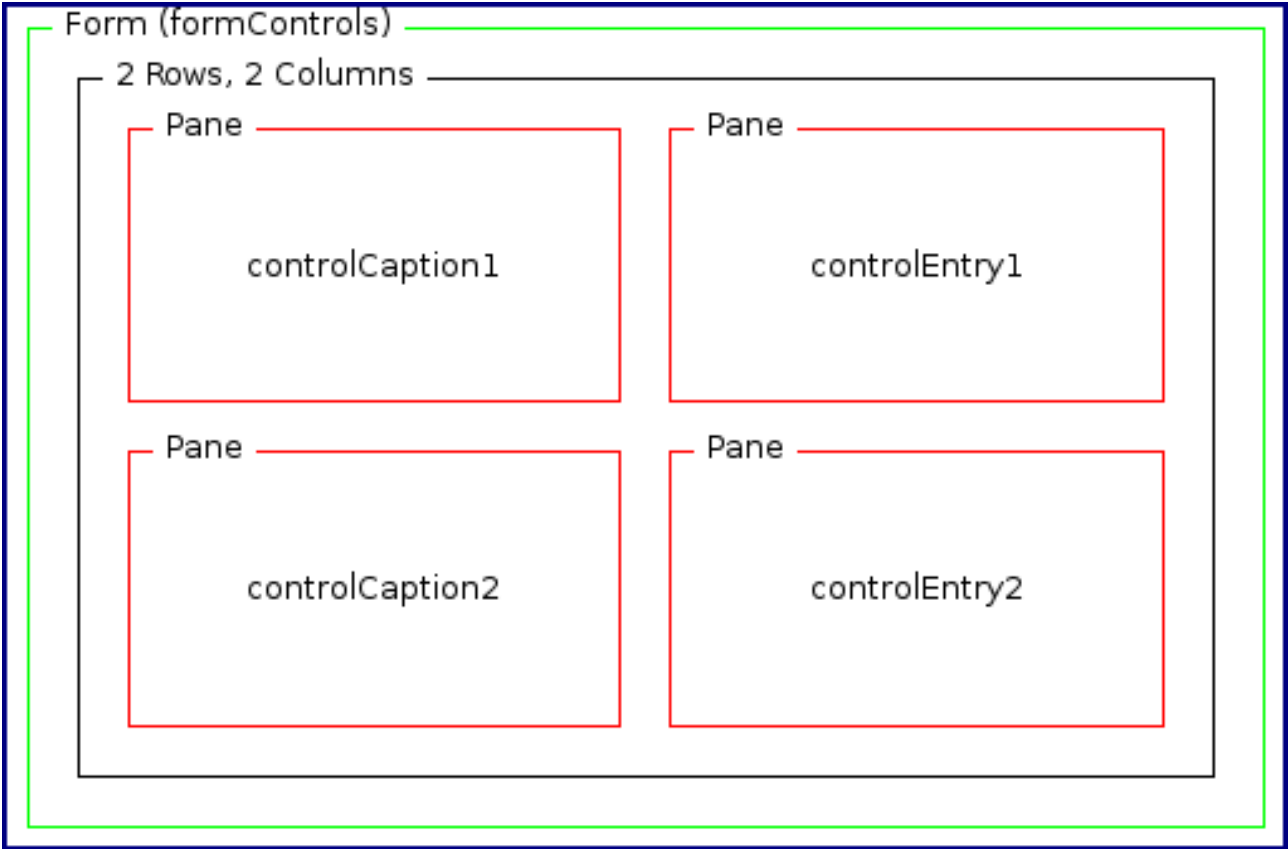
```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/forms.mlyt" pageTitle="xfform">
  <xfform name="formControls" action="download.jsp">
    <xfsiselect name="select" caption="Choose platform" captionPane="controlCaption1"
      entryPane="controlEntry1" initial="linux">
      <xfoption caption="Windows" value="windows"/>
      <xfoption caption="MacOS X" value="mac"/>
      <xfoption caption="Linux" value="linux"/>
    </xfsiselect>
    <xfaction type="submit" caption="Download" captionPane="controlCaption2"
      entryPane="controlEntry2"/>
  </xfform>
</canvas>
```

For the purpose of this demonstration submitted data will be processed by a simple JSP.

```
<?xml version="1.0" encoding="UTF-8"?>
<%@ page import="com.volantis.mcs.servlet.*" %>
<%
response.setContentType("x-application/vnd.xdime+xml");
String platform = MarinerServletRequestContext.findInstance(request).
  getParameter("select");
%>
<canvas layoutName="/welcome.mlyt" pageTitle="Forms in XDIME 1">
  <pane name="background">
    <p>You've chosen <%=platform%>!!</p>
  </pane>
</canvas>
```

The forms.mlyt layout may have the following structure.





## xfimplicit

### Purpose

Used to contain a value or a variable required for form processing

### Contained by

xfform

### Attributes

Attribute	Description	Type	Default	Options	Use
class	Assigns a class name to an element	xs:NMTOKEN	none		optional
clientVariableName	Passes a variable name to the form rather than a value	xs:string	none		optional
expr	An MCS expression	xs:string	none		optional
id	Assigns an identifier to an element	xs:ID	none		optional
name	The name of the action	xs:string	none		required
value	The value passed to the form	xs:string	none		required

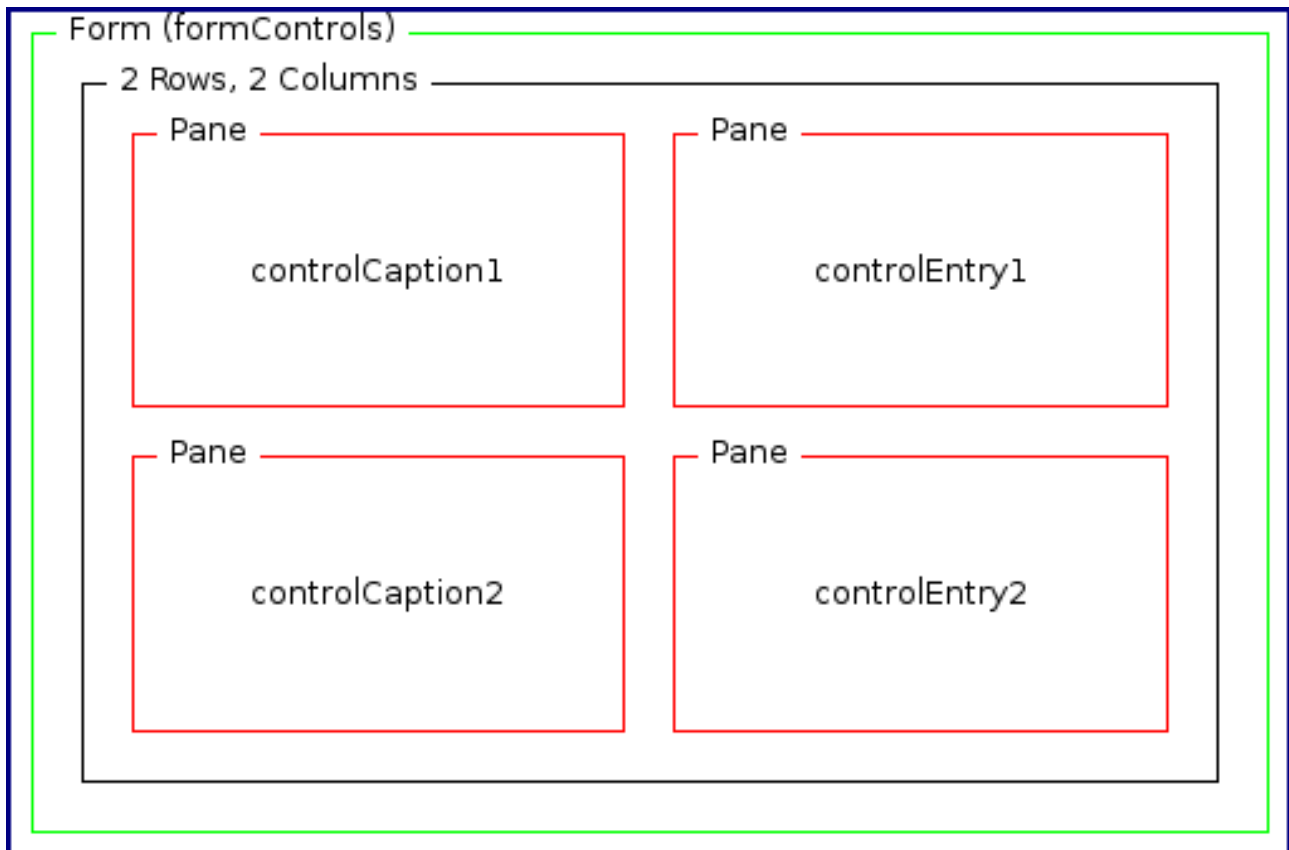
### Examples

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/forms.mlyt" pageTitle="xfimplicit">
  <xfform name="formControls" action="download.jsp">
    <xfsiselect name="select" caption="Choose platform" captionPane="controlCaption1"
      entryPane="controlEntry1">
      <xfoption caption="Windows" value="windows"/>
      <xfoption caption="MacOS X" value="mac"/>
      <xfoption caption="Linux" value="linux"/>
    </xfsiselect>
    <xfimplicit name="offer" value="Download4free"/>
    <xfaction type="submit" caption="Download" captionPane="controlCaption2"
      entryPane="controlEntry2"/>
  </xfform>
</canvas>
```

For the purpose of this demonstration submitted data will be processed by a simple JSP.

```
<?xml version="1.0" encoding="UTF-8"?>
<%@ page import="com.volantis.mcs.servlet.*" %>
<%
response.setContentType("x-application/vnd.xdime+xml");
String platform = MarinerServletRequestContext.findInstance(request).
  getParameter("select");
String offer = MarinerServletRequestContext.findInstance(request).
  getParameter("offer");
%>
<canvas layoutName="/welcome.mlyt" pageTitle="Forms in XDIME 1">
  <pane name="background">
    <h4><%=offer%></h4>
    <p>You've chosen <%=platform%>!!</p>
  </pane>
</canvas>
```

The `forms.mlyt` layout may have the following structure.



## xfmuselect

### Purpose

Container for a multiple selection control, for example a group of checkboxes.

### Contained by

xfform

### Contains

xfoptgroup, xfoption

### Attribute groups

Event attributes, Form attributes, Focus attributes, Navigation attributes, Core attributes

### Attributes

Attribute	Description	Type	Default	Options	Use
errmsg	The error message to be issued if the control fails validation	xs:string	none		optional
initial	The initial value of the control	xs:string	none		optional
name	The name of the control and the form variable return to the server	xs:string	none		required

### Example

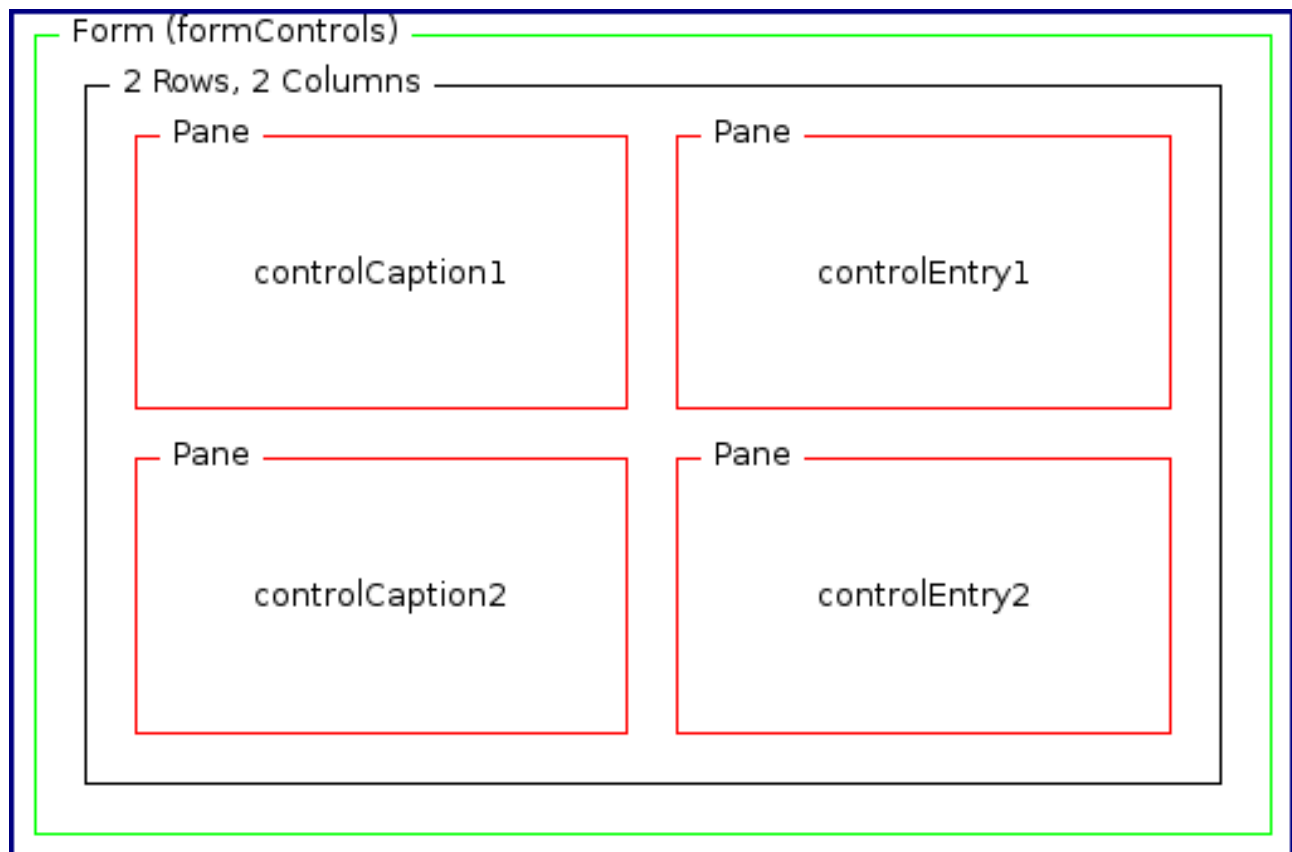
You use the `mcs-selection-list-style` theme property to control visual appearance of the selection controls. For instance, if `mcs-selection-list-style` is set to 'controls', then the list will be displayed as checkboxes.

The `mcs-selection-list-option-layout` property controls the order of the captions and controls in the display if both occupy the same pane. The possible values are: 'caption-first' and 'control-first'.

For the sake of clarity the style properties are specified using the style attribute. However, it is a good practice to use themes to control styling.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/forms.mlyt" pageTitle="xfmuselect">
  <xfform name="formControls" action="download.jsp">
    <xfmuselect name="select" caption="Choose platform" captionPane="controlCaption1"
      entryPane="controlEntry1" initial="linux"
      style="mcs-selection-list-style: controls;
      mcs-selection-list-option-layout: control-first">
      <xfoption caption="Windows" value="windows"/>
      <xfoption caption="MacOS X" value="mac"/>
      <xfoption caption="Linux" value="linux"/>
    </xfmuselect>
    <xfaction type="submit" caption="Download" captionPane="controlCaption2"
      entryPane="controlEntry2"/>
    <xfaction type="reset" caption="Reset" captionPane="controlCaption2"
      entryPane="controlEntry2"/>
  </xfform>
</canvas>
```

The `forms.mlyt` layout may have the following structure.



## xfoptgroup

### Purpose

Used to group a number `xfoption` elements.

**Note:** Not all markup languages support option groups or nested groups, so captions may not display on some devices.

### Contained by

xfmuselect, xfsiselect

### Contains

xfoptgroup, xfoption

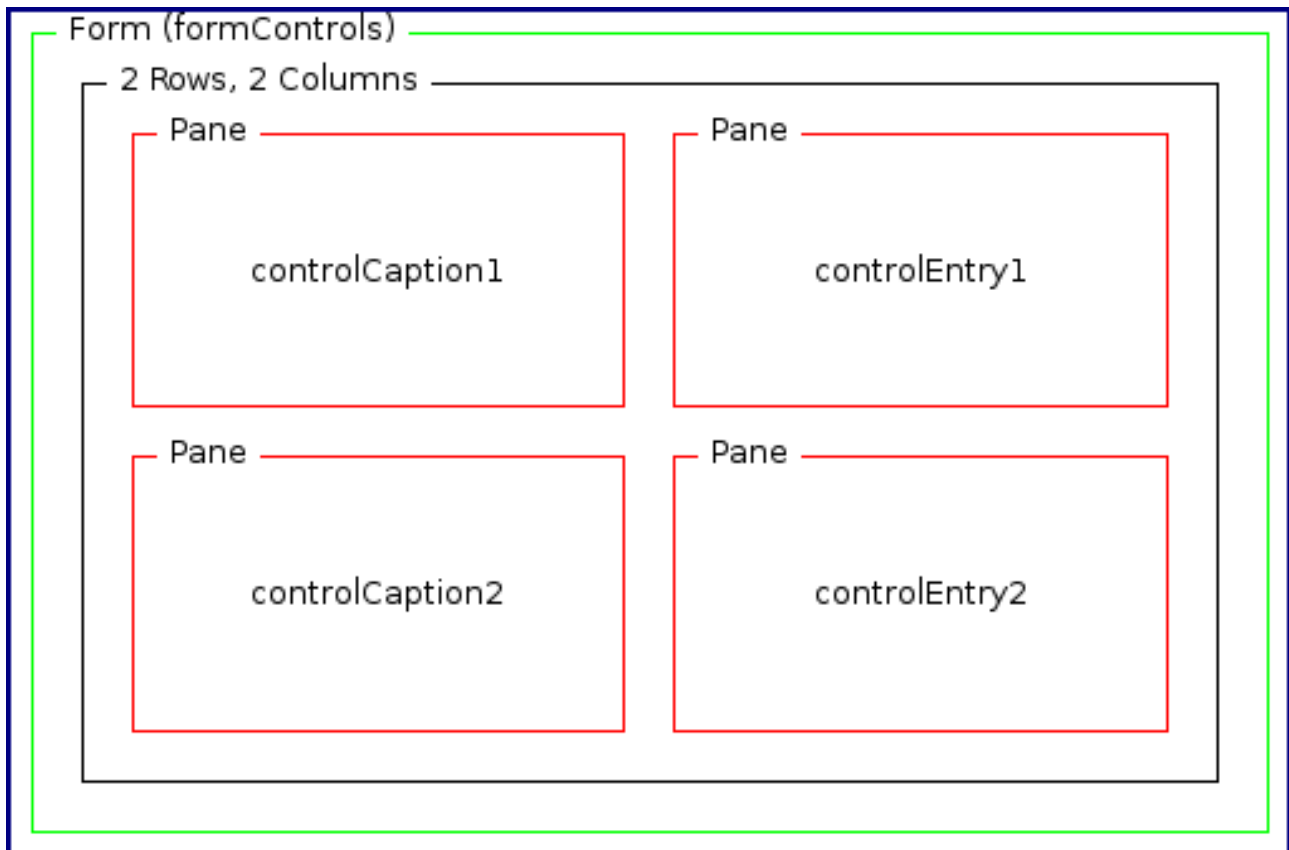
### Attributes

Attribute	Description	Type	Default	Options	Use
caption	The caption for the group	xs:string	none		required
class	Assigns a class name to an element	xs:NMTOKEN	none		optional
expr	An MCS expression	xs:string	none		optional
id	Assigns an identifier to an element	xs:ID	none		optional
prompt	Prompt text	xs:string	none		optional

### Example

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/forms.mlyt" pageTitle="xfoptgroup">
  <xform name="formControls" action="download.jsp">
    <xfsiselect name="select" caption="Options" captionPane="controlCaption1"
      entryPane="controlEntry1">
      <xfoptgroup caption="Set of options #1:">
        <xfoption caption="option 1.1" value="11"/>
        <xfoption caption="option 1.2" value="12"/>
        <xfoption caption="option 1.3" value="13"/>
      </xfoptgroup>
      <xfoptgroup caption="Set of options #2:">
        <xfoption caption="option 2.1" value="21"/>
        <xfoption caption="option 2.2" value="22"/>
        <xfoption caption="option 2.3" value="23"/>
      </xfoptgroup>
    </xfsiselect>
  </xform>
</canvas>
```

The `forms.mlyt` layout may have the following structure.



## xfoption

### Purpose

Used to specify an option item.

### Contained by

xfmuselect, xfoptgroup, xfsiselect

### Attributes

Attribute	Description	Type	Default	Options	Use
caption	The caption for the control	xs:string	none		required
captionClass	Applies an individual style to the caption	xs:string	none		optional
captionPane	The pane in which the caption will be displayed	xs:string	none		optional
class	Assigns a class name to an element	xs:NMTOKEN	none		optional
entryPane	The pane in which the input element of the control will be displayed	xs:string	none		optional
expr	An MCS expression	xs:string	none		optional
id	Assigns an identifier to an element	xs:ID	none		optional
prompt	Prompt text for the control	xs:string	none		optional
selected	Whether this option is preselected or not	xs:string	none	true, false	optional
value	The value of the control	xs:string	none		required

### Examples

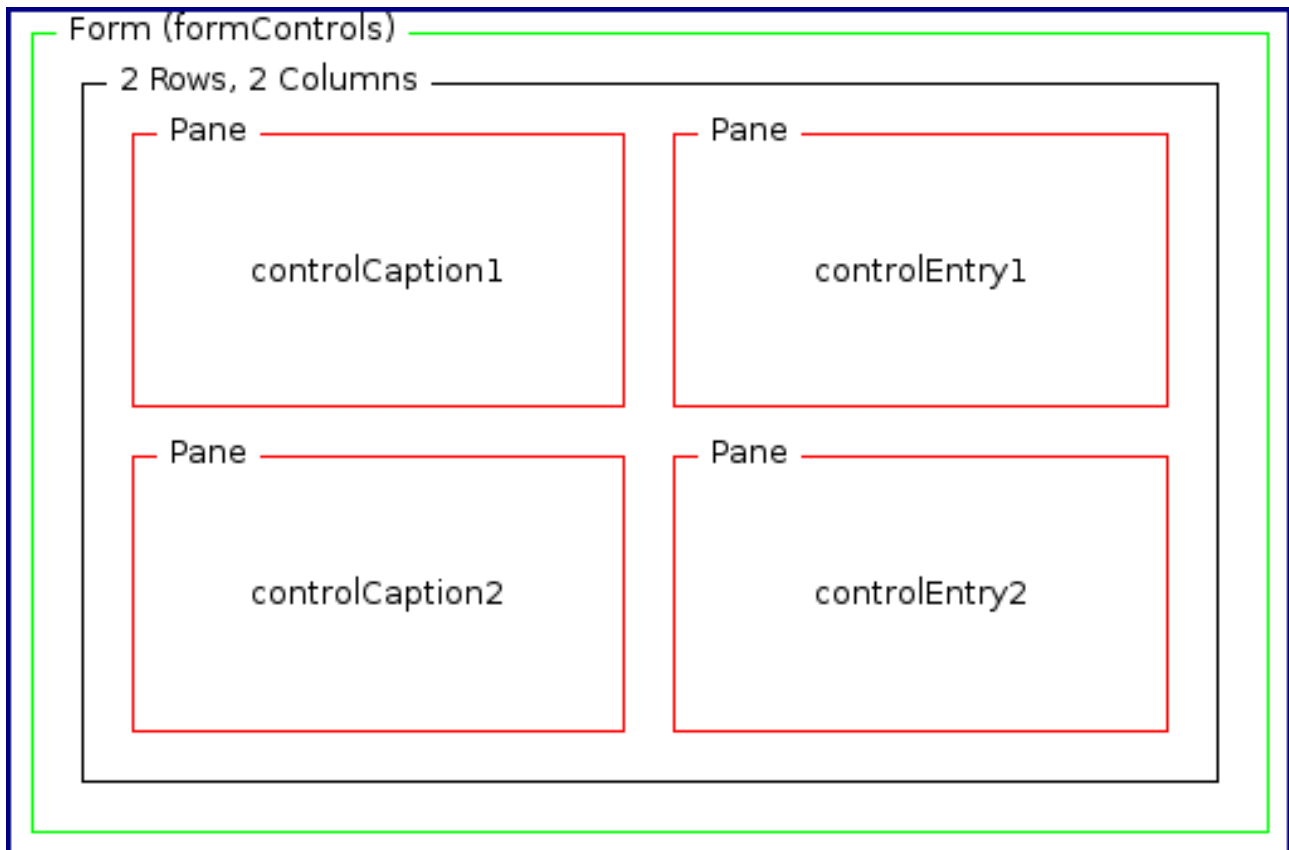
```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/forms.mlyt" pageTitle="xfoption">
  <xform name="formControls" action="download.jsp">
    <xfsiselect name="select" caption="Choose platform" captionPane="controlCaption1"
      entryPane="controlEntry1" initial="linux">
      <xfoption caption="Windows" value="windows"/>
      <xfoption caption="MacOS X" value="mac"/>
      <xfoption caption="Linux" value="linux"/>
    </xfsiselect>
    <xfaction type="submit" caption="Download" captionPane="controlCaption2"
      entryPane="controlEntry2"/>
  </xform>
</canvas>
```

For the purpose of this demonstration submitted data will be processed by a simple JSP.

```
<?xml version="1.0" encoding="UTF-8"?>
<%@ page import="com.volantis.mcs.servlet.*" %>
<%
response.setContentType("x-application/vnd.xdime+xml");
String platform = MarinerServletRequestContext.findInstance(request).
  getParameter("select");
%>
<canvas layoutName="/welcome.mlyt" pageTitle="Forms in XDIME 1">
  <pane name="background">
    <p>You've chosen <%=platform%>!!</p>
  </pane>
</canvas>
```

The forms.mlyt layout may have the following structure.





## xfsiselect

### Purpose

Container for a single selection control, for example a dropdown menu.

### Contained by

xfform

### Contains

xfoptgroup, xfoption

### Attribute groups

Event attributes, Form attributes, Focus attributes, Navigation attributes, Core attributes

### Attributes

Attribute	Description	Type	Default	Options	Use
errmsg	The error message to be issued if the control fails validation	xs:string	none		optional
initial	The initial value of the control	xs:string	none		optional
name	The name of the control and the form variable return to the server	xs:string	none		required

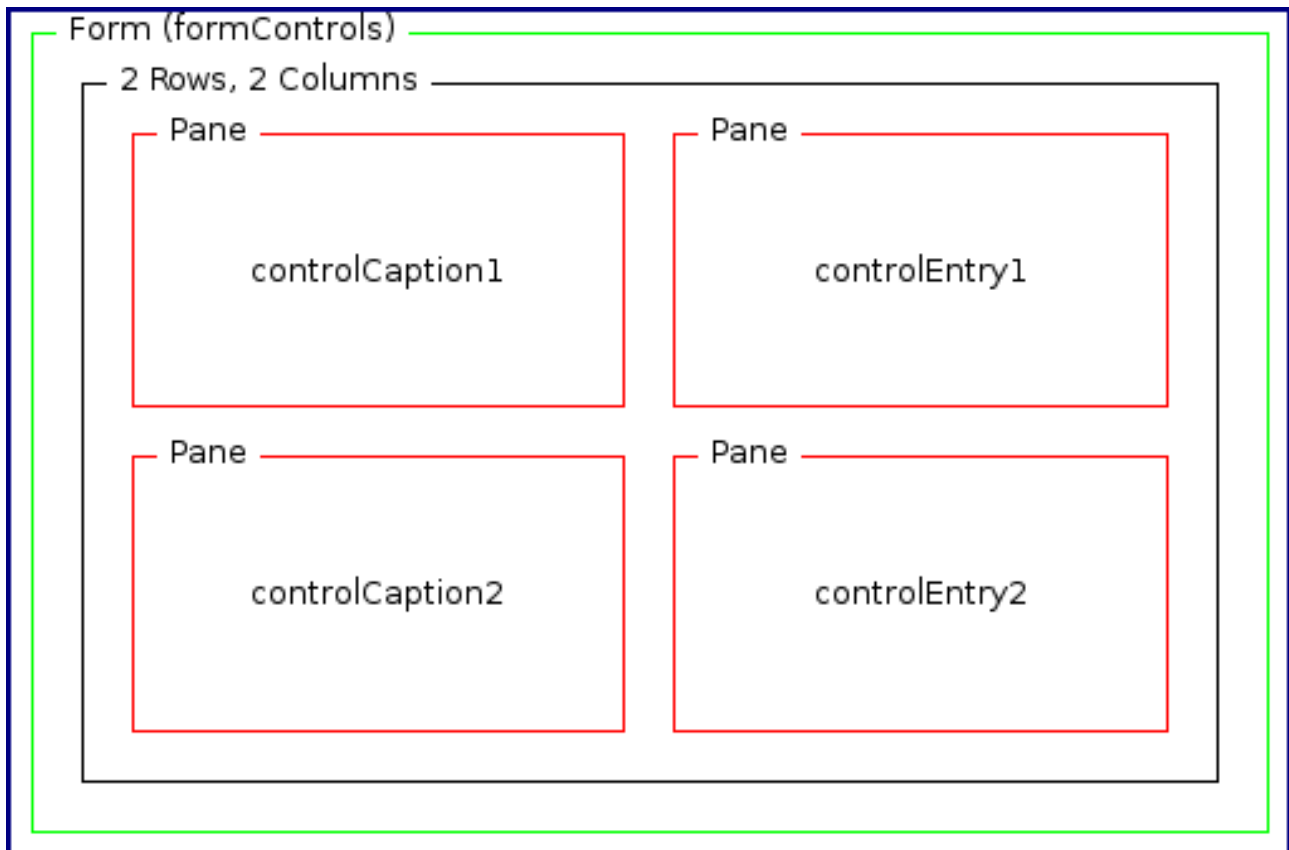
### Examples

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/forms.mlyt" pageTitle="xfsiselect">
  <xfform name="formControls" action="download.jsp">
    <xfsiselect name="select" caption="Choose platform" captionPane="controlCaption1"
      entryPane="controlEntry1" initial="linux">
      <xfoption caption="Windows" value="windows"/>
      <xfoption caption="MacOS X" value="mac"/>
      <xfoption caption="Linux" value="linux"/>
    </xfsiselect>
    <xfaction type="submit" caption="Download" captionPane="controlCaption2"
      entryPane="controlEntry2"/>
  </xfform>
</canvas>
```

For the purpose of this demonstration submitted data will be processed by a simple JSP.

```
<?xml version="1.0" encoding="UTF-8"?>
<%@ page import="com.volantis.mcs.servlet.*" %>
<%
response.setContentType("x-application/vnd.xdime+xml");
String platform = MarinerServletRequestContext.findInstance(request).
  getParameter("select");
%>
<canvas layoutName="/welcome.mlyt" pageTitle="Forms in XDIME 1">
  <pane name="background">
    <p>You've chosen <%=platform%>!!</p>
  </pane>
</canvas>
```

The `forms.mlyt` layout may have the following structure.



# xftextinput

## Purpose

Defines a text input control that can represent a single line or multiple-line text entry.

## Contained by

xfform

## Attribute groups

Event attributes, Form attributes, Focus attributes, Navigation attributes, Core attributes

## Attributes

Attribute	Description	Type	Default	Options	Use
errmsg	The error message to be issued if the control fails validation	xs:string	none		optional
initial	The initial value of the control	xs:string	none		optional
inputMode	Sets the default character input mode for iMode and MML devices	xs:string	none	katakana, hiragana, latin, latin digits	optional
maxLength	The maximum number of characters in the content	xs:string	none		optional
name	The name of the control and the form variable return to the server	xs:string	none		required
type	The type of text input control	xs:string	text	text, password	optional
validate	Rules for validating the content	xs:string	text		optional

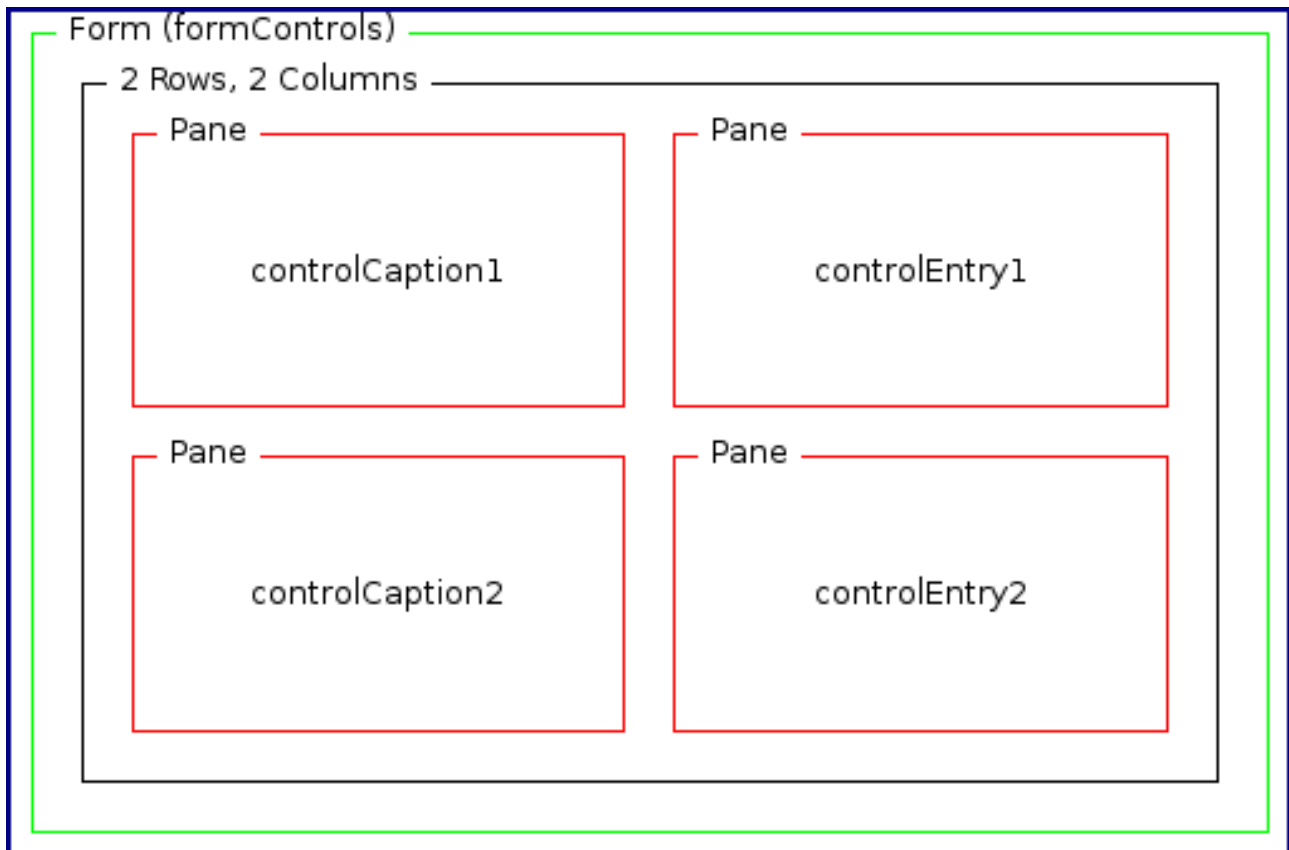
## Examples

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/forms.mlyt" pageTitle="xftextinput">
  <xfform name="formControls" action="download.jsp">
    <xftextinput name="login" caption="Login" captionPane="controlCaption1"
      entryPane="controlEntry1"/>
    <xftextinput name="password" caption="Password" type="password"
      captionPane="controlCaption2" entryPane="controlEntry2"/>
  </xfform>
</canvas>
```

The `mcs-rows` and `mcs-columns` properties define the size of the text area. For the sake of clarity the style properties are specified using the style attribute. However, it is a good practice to use themes to control styling.

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas xmlns="http://www.volantis.com/xmlns/marlin-cdm" layoutName="/forms.mlyt"
  pageTitle="xftextinput">
  <xfform name="formControls" action="download.jsp">
    <xftextinput name="message" caption="Message" captionPane="controlCaption1"
      entryPane="controlEntry1" style="mcs-rows: 2; mcs-columns: 20"/>
  </xfform>
</canvas>
```

The `forms.mlyt` layout may have the following structure.



## xfupload

### Purpose

Enables the uploading of binary data in a form. The processing of the file upload is the responsibility of the calling application. The element only results in markup on HTML based protocols.

**Note:** WML does support file upload. Using this element may cause some WML browsers to show an error when the page is processed.

### Contained by

xfform

### Attribute groups

Event attributes, Form attributes, Focus attributes, Navigation attributes, Core attributes

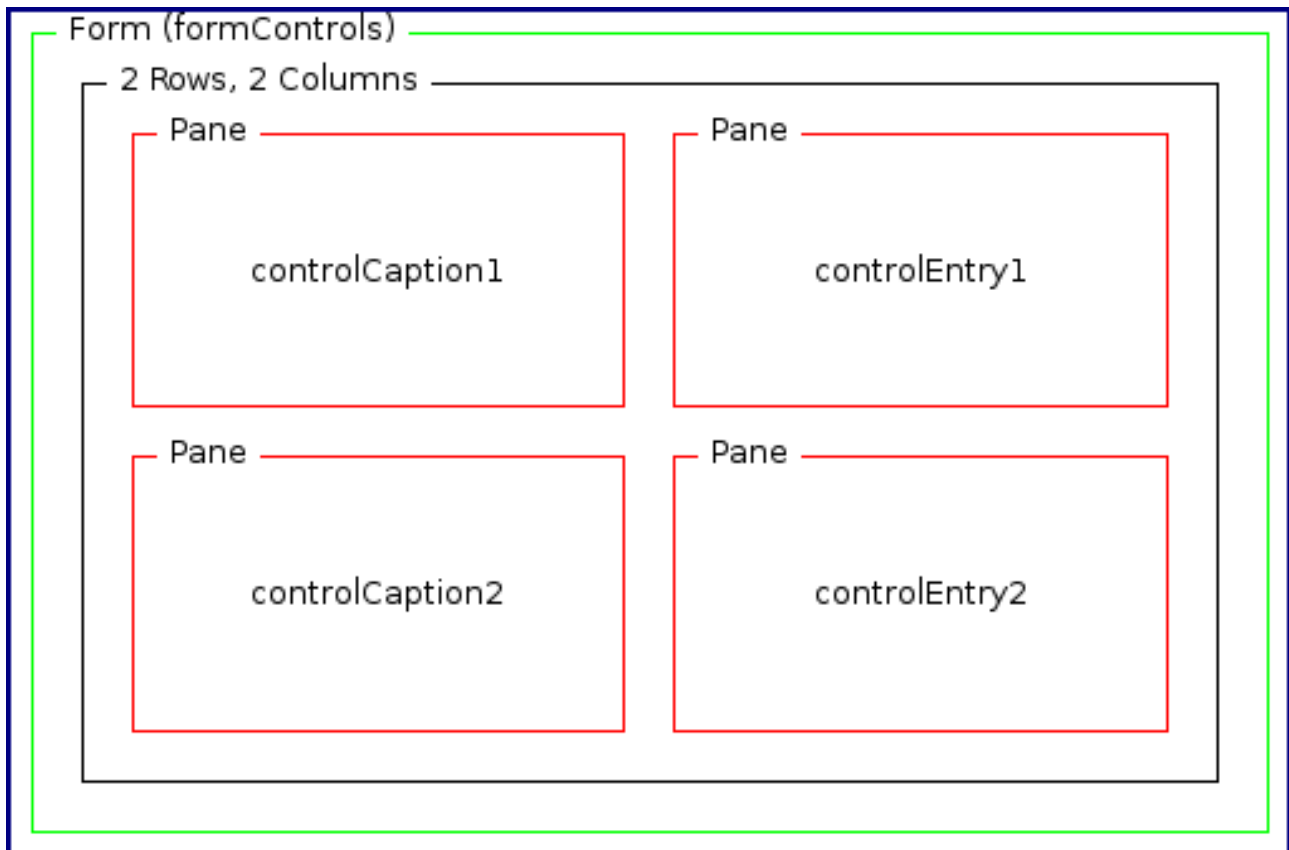
### Attributes

Attribute	Description	Type	Default	Options	Use
initial	The initial value of the control	xs:string	none		optional
maxLength	The maximum number of characters in the content	xs:string	none		optional
<b>name</b>	The name of the control and the form variable returned to the server	xs:string	none		required

### Example

```
<?xml version="1.0" encoding="UTF-8"?>
<canvas layoutName="/forms.mlyt" pageTitle="xfupload">
  <xfform name="formControls" action="upload.jsp">
    <xfupload name="datafile" maxLength="80" caption="Please select a file:"
      prompt="Use the browse button to select a file." captionPane="controlCaption1"
      entryPane="controlEntry1"/>
  </xfform>
</canvas>
```

The `forms.mlyt` layout may have the following structure.



## Common XDIME attributes

XDIME elements share many attributes. Rather than list them repeatedly for each element, they are grouped together according to their purpose, with links to them from the element descriptions.



## Block attributes

### Purpose

Attributes that are common to block elements.

**Note:** The use of the `pane` attribute is deprecated on the following elements: `dd`, `dt`, `li`, `tbody`, `td`, `tfoot`, `th`, `thead`, `tr`.

### Attribute

Attribute	Description	Type	Default	Options	Use
<code>pane</code>	The name of a pane in a layout. Using this attribute is an alternative to using a <code>pane</code> element.	<code>xs:string</code>	<code>none</code>		optional

## Event attributes

### Purpose

Pointing device and keyboard event attributes.

### Attributes

Attribute	Description	Type	Default	Options	Use
onclick	Script component to execute when user clicks the pointing device button.	xs:string	none		optional
ondblclick	Script component to execute when user double-clicks the pointing device button.	xs:string	none		optional
onkeydown	Script component to execute when a key is pressed.	xs:string	none		optional
onkeypress	Script component to execute when a key is pressed and released.	xs:string	none		optional
onkeyup	Script component to execute when a key is released.	xs:string	none		optional
onmousedown	Script component to execute when the pointing device button is pressed.	xs:string	none		optional
onmousemove	Script component to execute when the pointing device is moved while over an element.	xs:string	none		optional
onmouseout	Script component to execute when the pointing device is moved away from an element.	xs:string	none		optional
onmouseover	Script component to execute when the pointing device is over the element.	xs:string	none		optional
onmouseup	Script component to execute when the pointing device button is released.	xs:string	none		optional

## Core attributes

### Purpose

The `class` and `id` attributes can be used as style sheet selectors, allowing you to assign style information to a set of elements. The `id` attribute can also be used to indicate a link target.

All XDIME elements with the exception of `otherwise` may have an `expr` attribute. Its use on the `select` and `when` elements is described separately in those contexts.

### Attributes

Attribute	Description	Type	Default	Options	Use
<code>class</code>	Assigns a class name to an element.	<code>xs:NMTOKEN</code>	<code>none</code>		optional
<code>expr</code>	Contains an MCS expression. If it evaluates to 'true' the element is processed, otherwise the element and its children are skipped and processing continues at the next element.	<code>xs:string</code>	<code>none</code>		optional
<code>id</code>	Assigns an identifier to an element.	<code>xs:ID</code>	<code>none</code>		optional
<code>title</code>	Information about the element. Visual browsers usually display the title on the mouseover event.	<code>xs:string</code>	<code>none</code>		optional

## Form attributes

### Purpose

Attributes that are common to form controls. The `caption`, `help` and `prompt` attributes can contain literal text, or an MCS expression or a JSP expression that evaluates to a string or a text component name.

### Attributes

Attribute	Description	Type	Default	Options	Use
active	Whether or not the control is active and is displayed	xs:boolean	true		optional
caption	The caption for the control	xs:string	none		optional
captionPane	The pane in which the caption will be displayed	xs:string	none		optional
entryPane	The pane in which the input element of the control will be displayed	xs:string	none		optional
help	Help text for the control	xs:string	none		optional
onchange	The script component to execute when the control value changes	xs:string	none		optional
onselect	The script component to execute when a selection is made	xs:string	none		optional
prompt	Prompt text for the control	xs:string	none		optional

## Focus attributes

### Purpose

Focus attributes.

### Attributes

Attribute	Description	Type	Default	Options	Use
accesskey	Specifies the character that can be used to activate the element.	xs:string	none		optional
onblur	Script component to execute when the element loses focus.	xs:string	none		optional
onfocus	Script component to execute when the element loses focus.	xs:string	none		optional

## Fragment attributes

### Purpose

Attributes that apply to fragments.

### Attributes

Attribute	Description	Type	Default	Options	Use
backLinkText	The text used on a link to return to the fragment from another fragment. If not set, MCS uses the <code>linkText</code> value.	xs:string	none		optional
expr	An MCS expression	xs:string	none		optional
linkText	The text used on a link to the fragment from another fragment	xs:string	none		optional
<b>name</b>	The name of the fragment	xs:string	none		required

## Hypertext attributes

### Purpose

Attributes that define link targets and activation.

### Attributes

Attribute	Description	Type	Default	Options	Use
href	Defines the link target of the hyperlink. It can be an absolute URL or a relative URL, or a component reference.	xs:anyURI	none		optional
name	The name of the element, used to identify it as the target of a link	xs:string	none		optional
segment	The segment of a montage in which the output from this element should be placed	xs:string	none		optional
target	The region in a WapTV modeset in which the output from this element should be placed	xs:string	none		optional

## Navigation attributes

### Purpose

Attributes that define navigation features. The `shortcut` attribute can contain literal text, or an MCS expression or a JSP expression that evaluates to a string or a text component name.

### Attributes

Attribute	Description	Type	Default	Options	Use
shortcut	The shortcut key to set focus on the element	xs:string	none		optional
tabindex	Defines the order of moving focus from element to element using the TAB key or equivalent.	xs:int	none		optional



## Page attributes

### Purpose

Attributes associated with an entire page.

### Attributes

Attribute	Description	Type	Default	Options	Use
layoutName	The name of the layout for a canvas or montage	xs:string	none		required
maxAge	A cache value in seconds to be used instead of the value in the mcs-config.xml file, allowing different settings for different canvases or montages.	xs:string	none		optional
onload	Script component to execute when the body of a page is loaded.	xs:string	none		optional
onunload	Script component to execute when the body of a page is unloaded.	xs:string	none		optional
pageTitle	The page title for a canvas or montage	xs:string	none		optional
ssGenType	Override values for stylesheet caching. A value of 'default' uses the settings in the mcs-config.xml file. Internal and external caching requires theme caching to be enabled, and that a device supports stylesheets of the type.	xs:string	none	default, internal, external	optional
theme	The theme for a canvas or montage	xs:string	none		optional

## References

Apache Software Foundation

<http://apache.org>

Free Software Foundation

<http://www.fsf.org>

Jaxen Project

<http://jaxen.org/>

Sun Microsystems Inc

<http://www.sun.com>

Types of canvas

Caching XDIME pages

Caching XDIME pages

Timed redirect and refresh

Styling forms