

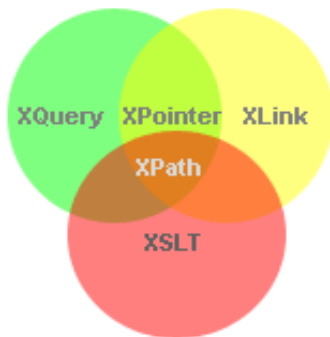


## XML, XLink and XPointer

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XLink is used to create hyperlinks in XML documents.



- XLink is used to create hyperlinks within XML documents
- Any element in an XML document can behave as a link
- With XLink, the links can be defined outside the linked files
- XLink is a W3C Recommendation

## XLink Browser Support

There is no browser support for XLink in XML documents.

However, all major browsers support [XLinks in SVG](#).

## XLink Syntax

In HTML, the <a> element defines a hyperlink. However, this is not how it works in XML. In XML documents, you can use whatever element names you want - therefore it is impossible for browsers to predict what link elements will be called in XML documents.

Below is a simple example of how to use XLink to create links in an XML document:

```
<?xml version="1.0" encoding="UTF-8"?>

<homepages xmlns:xlink="http://www.w3.org/1999/xlink">
  <homepage xlink:type="simple"
xlink:href="https://www.w3schools.com">Visit
W3Schools</homepage>
  <homepage xlink:type="simple"
xlink:href="http://www.w3.org">Visit W3C</homepage>
</homepages>
```

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To get access to the XLink features we must declare the XLink namespace. The XLink namespace is: "http://www.w3.org/1999/xlink".

The xlink:type and the xlink:href attributes in the <homepage> elements come from the XLink namespace.

The xlink:type="simple" creates a simple "HTML-like" link (means "click here to go there").

The xlink:href attribute specifies the URL to link to.

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## XLink Example

The following XML document contains XLink features:

```
<?xml version="1.0" encoding="UTF-8"?>

<bookstore xmlns:xlink="http://www.w3.org/1999/xlink">

<book title="Harry Potter">
  <description
```

```
xlink:type="simple"
xlink:href="/images/HPotter.gif"
xlink:show="new">
As his fifth year at Hogwarts School of Witchcraft and
Wizardry approaches, 15-year-old Harry Potter is.....
</description>
</book>

<book title="XQuery Kick Start">
  <description
xlink:type="simple"
xlink:href="/images/XQuery.gif"
xlink:show="new">
XQuery Kick Start delivers a concise introduction
to the XQuery standard.....
  </description>
</book>

</bookstore>
```

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### Example explained:

- The XLink namespace is declared at the top of the document (xmlns:xlink="http://www.w3.org/1999/xlink")
  - The xlink:type="simple" creates a simple "HTML-like" link
  - The xlink:href attribute specifies the URL to link to (in this case - an image)
  - The xlink:show="new" specifies that the link should open in a new window
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## XLink - Going Further

In the example above we have demonstrated simple XLinks. XLink is getting more interesting when accessing remote locations as resources, instead of standalone pages.

If we set the value of the `xlink:show` attribute to "embed", the linked resource should be processed inline within the page. When you consider that this could be another XML document you could, for example, build a hierarchy of XML documents.

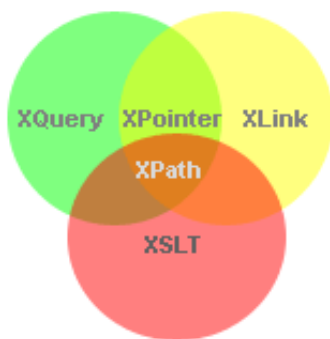
You can also specify WHEN the resource should appear, with the `xlink:actuate` attribute.

## XLink Attribute Reference

Attribute	Value	Description
<code>xlink:actuate</code>	<code>onLoad</code> <code>onRequest</code> other <code>none</code>	Defines when the linked resource is read and shown: <ul style="list-style-type: none"><li><code>onLoad</code> - the resource should be loaded and shown when the document loads</li><li><code>onRequest</code> - the resource is not read or shown before the link is clicked</li></ul>
<code>xlink:href</code>	<i>URL</i>	Specifies the URL to link to
<code>xlink:show</code>	<code>embed</code>	Specifies where to open the link. Default is "replace"

	new replace other none	
xlink:type	simple extended locator arc resource title none	Specifies the type of link

## XPointer



- XPointer allows links to point to specific parts of an XML document
- XPointer uses XPath expressions to navigate in the XML document
- XPointer is a W3C Recommendation

## XPointer Browser Support

There is no browser support for XPointer. But XPointer is used in other XML languages.

## XPointer Example

In this example, we will use XPointer in conjunction with XLink to point to a specific part of another document.

We will start by looking at the target XML document (the document we are linking to):

```
<?xml version="1.0" encoding="UTF-8" ?>
```

```
<dogbreeds>

<dog breed="Rottweiler" id="Rottweiler">
  <picture url="https://dog.com/rottweiler.gif" />
  <history>The Rottweiler's ancestors were probably Roman
  drover dogs.....</history>
  <temperament>Confident, bold, alert and imposing, the
Rottweiler
  is a popular choice for its ability to protect....
</temperament>
</dog>

<dog breed="FCRetriever" id="FCRetriever">
  <picture url="https://dog.com/fcretriever.gif" />
  <history>One of the earliest uses of retrieving dogs was to
  help fishermen retrieve fish from the water....</history>
  <temperament>The flat-coated retriever is a sweet,
exuberant,
  lively dog that loves to play and retrieve....</temperament>
</dog>

</dogbreeds>
```

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Note that the XML document above uses id attributes on each element!

So, instead of linking to the entire document (as with XLink), XPointer allows you to link to specific parts of the document. To link to a specific part of a page, add a number sign (#) and an XPointer expression after the URL in the xlink:href attribute, like this:

xlink:href="https://dog.com/dogbreeds.xml#xpointer(id('Rottweiler'))". The expression refers to the element in the target document, with the id value of "Rottweiler".

XPointer also allows a shorthand method for linking to an element with an id. You can use the value of the id directly, like this: xlink:href="https://dog.com/dogbreeds.xml#Rottweiler".

The following XML document contains links to more information of the dog breed for each of my

```
<?xml version="1.0" encoding="UTF-8"?>

<mydogs xmlns:xlink="http://www.w3.org/1999/xlink">

<mydog>
  <description>
    Anton is my favorite dog. He has won a lot of.....
  </description>
  <fact xlink:type="simple"
xlink:href="https://dog.com/dogbreeds.xml#Rottweiler">
    Fact about Rottweiler
  </fact>
</mydog>

<mydog>
  <description>
    Pluto is the sweetest dog on earth.....
  </description>
  <fact xlink:type="simple"
xlink:href="https://dog.com/dogbreeds.xml#FCRetriever">
    Fact about flat-coated Retriever
  </fact>
</mydog>

</mydogs>
```

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