KML 2.1 Tag Index

This section contains an alphabetical reference for all KML tags. Each section lists the tag name with its correct case, its type, values if any, and the containment hierarchy of the tag. Complex elements, which usually start with a capital letter, can contain *children*. Simple elements, which usually start with a lowercase letter, have *values*. All complex elements can have an *id*.

Note: The closing tag is not listed in the header, but its use is assumed.

<address>

This tag can contain an unstructured address written as a standard Street, City, State address, and/or as a postal code. You can use the <address> tag to specify the location of a point instead of using latitude and longitude coordinates. For example, Google Earth can compute the position of:

```
<address>1600 Amphitheater Pkwy, Mountain View, CA</address>
```

Note: This feature currently works only for U.S., Canada, and United Kingdom addresses.

Values
A string value representing the street address or postal code of the desired placemark. For example:

```
<address>1600 Amphitheater Pkwy, Mountain View, CA</address>
```

Parents

- <Placemark>

<AddressDetails>

A structured address, formatted as xAL, or eXtensible Address Language, an international standard for address formatting. <AddressDetails> is used by KML in the Google Maps API. For details, see the Google Maps API documentation.

```
<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns="http://earth.google.com/kml/2.1">
```

```
  <Response>
    <name>95008</name>
    <Status>
      <code>200</code>
      <request>geocode</request>
    </Status>
    <Placemark>
      <address>Campbell, CA 95008, USA</address>
      <AddressDetails>
        <Country>
          <CountryNameCode>US</CountryNameCode>
          <AdministrativeArea>
            <AdministrativeAreaName>CA</AdministrativeAreaName>
            <Locality>
              <LocalityName>Campbell</LocalityName>
              <PostalCode>
                <PostalCodeNumber>95008</PostalCodeNumber>
              </PostalCode>
            </Locality>
          </AdministrativeArea>
        </Country>
      </AddressDetails>
      <Point>
        <coordinates>-121.955390,37.280007,0</coordinates>
      </Point>
    </Placemark>
  </Response>
</kml>
```

Values
A structured address, formatted as xAL, or eXtensible Address Language.

Parents

- <Placemark>

<altitude>

Specifies the altitude, in meters.

```
<Location>
   <latitude>-118.9813220168456</latitude>
   <longitude>39.55375305703105</longitude>
   <altitude>1223</altitude>
</Location>
```

Parents

- <Location>
- <LookAt>

<altitudeMode>

Modifies the altitude for a placemark or other type of geometry. When altitude is set as a positive value, the altitude mode determines the altitude's relationship to the ground based on one of three values: *clampToGround*, *relativeToGround*, or *absolute*.

Note: If you want to display features above the ground, you need to specify an <altitudeMode> of *relativeToGround* or *absolute*, even if you specify a nonzero altitude in the <coordinates> tag.

Values

- *clampToGround* - (default) Indicates to ignore an altitude specification (for example, in the <coordinates> tag).
- *relativeToGround* - Sets the altitude of the element relative to the actual ground elevation of a particular location. If the ground elevation of a location is exactly at sea level and the altitude for a point is set to 9 meters, then the placemark elevation is 9 meters with this mode. However, if the same placemark is set over a location where the ground elevation is 10 meters above sea level, then the elevation of the placemark is 19 meters.
- *absolute* - Sets the altitude of the element relative to sea level, regardless of the actual elevation of the terrain beneath the element. For example, if you set the altitude of a placemark to 10 meters with an absolute altitude mode, the placemark will appear to be at ground level if the terrain beneath is also 10 meters above sea level. If the terrain is 3 meters above sea level, the placemark will appear elevated above the terrain by 7 meters. A typical use of this mode is for aircraft placement.

Parents

- <LatLonAltBox>
- <Point>
- <LinearRing>
- <LineString>
- <Model>
- <Polygon>

<BalloonStyle>

A child of <ColorStyle> that allows you to specify a consistent balloon format for a set of features. In Google Earth, a BalloonStyle overrides the default balloon contents. If you specify a <color>, it will be used as the background color for the balloon. Here is how to specify a new title for a description balloon:

```
<text><![CDATA[<b>Notice how this name is different</b><br /><br/>$[description]]]></text>
```

You can add entities to the <text> tag using the format: **$[***name***]**
Google Earth looks in the current feature for a corresponding [*name*] entity and substitutes that information in the balloon.

The **$[geDirections]** tag is built-in to the Google Earth client. Use this entity to substitute driving directions in the balloon.

Children

- <text>
- <textColor>
- <color>
- <colorMode>

<Change>

Modifies the values in an element that has already been loaded with a <NetworkLink>. The <targetHref> element in <Update> specifies the *.kml* or *.kmz* file containing the data to be modified. In that file, the element to be modified must already have an explicit *id* attribute defined for it. Within the Change element, the child to be modified must include a *targetId* attribute that references the original element's *id*.

This update can be considered a "sparse update": in the modified element, only the values listed in <Change> are replaced; all other values remained untouched.

```
<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns="http://earth.google.com/kml/2.1">
<NetworkLinkControl>
  <Update>
        <targetHref>/tmp/Point.kml</targetHref>
    <Change>
      <Placemark targetId="pm123">
        <name>Name changed by Update Change</name>
        <!-- coordinates remain the same -->
      </Placemark>
    </Change>
  </Update>
</NetworkLinkControl>
</kml>
```

Parents

<Update>

Children
The element(s) to be modified, which are identified by the *targetId* attribute.

<code>

A response code (similar to HTTP status codes) indicating whether the geocode request was successful or not. See the full list of status codes below.

```
<Status>
    <request>geocode<request>
    <code>200</code>
 </Status>
```

Values

Code	Value	Description
G_GEO_OK	200	No errors occurred; the address was parsed and located and its geocode location has been returned.
G_GEO_OTHER_ERROR	500	Geocoding request could not be successfully processed, yet the exact reason is unknown.
G_GEO_MISSING_ADDRESS	601	The q parameter was either missing or had no value.
G_GEO_UNKNOWN_ADDRESS	602	The address was given but no corresponding geographic location could be found. This may be due to the fact that this address is relatively new, or it may be incorrect.
G_UNAVAILABLE_ADDRESS	603	The address is valid but for legal or other reasons, geocoder may not return its coordinates.
G_GEO_BAD_KEY	610	The API key given with the request does not appear valid.
G_GEO_TOO_MANY_REQUESTS	620	There were too many requests issues for the given site within the 24h period.

Parents

- <Status>

<color>

A tag representing color that can be applied to any geometry. Color values are expressed in hexadecimal notation, including opacity (alpha) values. The order of expression is alpha, blue, green, red (ABGR). The range of values for any one color is 0 to 255 (`00` to `ff`). For opacity, `00` is fully transparent and `ff` is fully opaque.

Note: When color is applied to an icon, the texture color of the icon is multiplied by the aabbggrr value (alpha, blue, green, red). For example, if your icon's image is a bluish green color, and you set a greenish yellow color for the placemark, the result will be green. Keep in mind that with multiply blend mode, RGB values are multiplied component wise (R*R, G*G, B*B). Consequently, pure red (1, 0, 0) times pure green (0, 1, 0) yields black, because (1*0, 0*1, 0*0) is (0, 0, 0). For this reason, best effects for adding color to icons are achieved with greyscale icons.

Values
The standard range from `00000000` to `ffffffff`. For example, if you want to apply a blue color with 50% opacity to an icon, your code would look similar to the following:

```
<IconStyle>
      <color>7fff0000</color>
      <Icon>
         <href>http://icon.jpg</href>
      </Icon>
</IconStyle>
```

Parents

- <PolyStyle>
- <LineStyle>
- <IconStyle>

<colorMode>

Used to set a color mode of randomized or standard. You can use this tag in conjunction with lines, icons, polygons, or labels. When you enable referencing of a single style effect for a folder (see Style Referencing), then the color mode chosen applies to all elements in the folder that reference that style. In Google Earth, this is referred to as *style sharing*.

Values
There are only two values for this element: *normal*, and *random*. By default, if <colorMode> is not specified, the a normal color mode is applied. When you apply a random color mode, a randomized color is chosen and applied to the base color and opacity. This means that if you desire a fully randomized color effect, you should set your base color to white (`<color>ccffffff</color>`). If your base color is greyscale, the randomized color is added to that value, so you can achieve a more muted tone to the randomized color by setting the base color to a greyscale value. The darker the greyscale, the darker the randomized color.

Finally, if you choose any other color besides white or greyscale as your base color value, then the randomization applies a gradient to the base value, resulting in various shades of the base color in the resulting geometry. For example, if you choose red as the base color for the polygon style, and then set the color mode to random, the polygons that reference that style will appear in various shades of red. The following example shows a polygon style with those settings.

```
<PolyStyle>
      <color>ff0000ff</color>
      <colorMode>random</colorMode>
</PolyStyle>
```

In this example, the opacity is set at 100 percent. For best effect, an opacity of 100 percent should be used when you are using a random color mode applied to a single base color; otherwise, the shade variations between elements is not as evident.

Parents

- <BalloonStyle>
- <PolyStyle>
- <LineStyle>
- <IconStyle>

<cookie>

Use the <cookie> element to append the text to the URL query on the next refresh of the network link. You can use this in your script to provide more intelligent handling on the server side, including version querying and conditional file delivery.

```
<cookie>someCookieText</cookie>
```

Values
A user-specified string.

Parents

- <NetworkLinkControl>

<coordinates>

Defines the exact coordinates of the point location in longitude, latitude, and altitude—in that precise order. Values are separated by commas. Multiple coordinates are separated by a space. Longitude and latitude measurements are standard lat-lon projection with WGS84 datum. Google Earth uses simple cylindrical projection (or Plate Carrée), which is a simple map projection where the meridians and parallels are equidistant, straight parallel lines, with the two sets crossing at right angles. The following snippet shows a point with longitude and latitude with no elevation specified.

```
<Point>
  <coordinates>-111.661,33.2212,0<coordinates>
```

```
<Point>
```

Values
Determined by the position of the point coordinates. The value is expressed in decimal degrees and meters above sea level.

Important: The required geographic coordinates specification is Longitude, Latitude, and Altitude, in that order. If you don't follow this method, your coordinate reference will be inaccurate.

Parents

- <LinearRing>
- <LineString>
- <Point>

<Create>

Adds new elements to a Folder or Document that has already been loaded via a <NetworkLink>. The <targetHref> element in <Update> specifies the *.kml* or *.kmz* file that contained the original Folder or Document. Within that file, the Folder or Document that is to contain the new data must already have an explicit *id* defined for it. This *id* is referenced as the *targetId* attribute of the Folder or Document within <Create> that contains the element to be added.

```
<Update>
  <targetHref>Point.kml</targetHref>
  <Create>
    <Document targetId="region24">
      <Placemark>
        <Point>
          <coordinates>-95.48,40.43,0</coordinates>
        </Point>
      </Placemark>
    </Document>
  </Create>
</Update>
```

Parents

- <Update>

Children

- A Folder or Document containing the element(s) to be added. The Folder or Document must be referenced using the *targetId* attribute.

<Delete>

Deletes features from a complex element that has already been loaded via a <NetworkLink>. The <targetHref> element in <Update> specifies the *.kml* or *.kmz* file containing the data to be deleted. Within that file, the element to be deleted must already have an explicit *id* defined for it. The <Delete> element references this *id* in the *targetId* attribute. The only elements that can be deleted are Document, Folder, GroundOverlay, Model, Placemark, and ScreenOverlay. For more detail, see the KML 2.1 Tutorial.

```
<Update>
  <targetHref>http://www.foo.com/Point.kml</targetHref>
  <Delete>
    <Placemark targetId="pa3556"></>
  </Delete>
</Update>
```

Parents

- <Update>

Children
Can contain any of the following elements, which must be identified by the *targetId* attribute:

- Document
- Folder
- GroundOverlay
- Model
- Placemark
- ScreenOverlay

<description>

Supplies descriptive information that appears in the information balloon when the user clicks on either the placemark name in the Places panel, or the placemark icon. This text also appears beneath the placemark in the Places panel if no <Snippet> tag is specified for the feature.

The description element supports plain text as well as HTML formatting. A valid URL string for the World Wide Web is automatically converted to a hyperlink to that URL (e.g. http://www.google.com). Consequently, you do not need to surround a URL with the `<a href="http://.."></a>` tags in order to achieve a simple link. However, if you enter a description in plain text, extra white space and carriage returns are ignored. Use the HTML <br /> element for line breaks, or fully format your description in HTML.

When using HTML to create a hyperlink around a specific word, or when including images in the HTML, you must use HTML entity references or the CDATA element to escape angle brackets, apostrophes, and other special characters. The CDATA element tells the XML parser to ignore special characters used within the brackets. This element takes the form of:

```
<![CDATA[ special characters here ]]>
```

If you prefer not to use the CDATA element, you can use entity references to replace all the special characters. However, it is most often simplest to use the CDATA element to enclose the entire HTML string rather then to substitute entity references for each special character.

```
<description><![CDATA[This is an image <img src="C:\Documents and Settings\My
Documents\Icons\icon.gif"> and we have a link http://www.google.com.]]></description>
```

Values
User-defined.

Important: The description element supports HTML formatting only. It does not support other web-based technology, such as dynamic page markup (PHP, JSP, ASP), scripting languages (VBScript, Javascript), nor application languages (Java, Python).

Parents

- <Document>
- <Folder>
- <NetworkLink>
- <GroundOverlay>
- <ScreenOverlay>
- <Placemark>

<Document>

The root element for KML documents. It also acts as a folder for the elements it contains. This tag is required if your KML file uses schemas, shared styles, or contains more than one feature, such as multiple placemarks. For a single feature using a local style, it is not required.

Children

- <description>
- <Document>
- <Folder>

- <GroundOverlay>
- <name>
- <LookAt>
- <NetworkLink>
- <Placemark>
- <Region>
- <ScreenOverlay>
- <Style>
- <StyleMap>
- <visibility>

<drawOrder>

Use this tag when defining overlapping overlays to determine the stacking order for the images. The default value is 0, so if no <drawOrder> tag is specified for the overlay, its draw order is set to that. Overlays with higher draw order values are drawn on top of overlays with lower draw order values.

```
<GroundOverlay>
    <name>Overlay2</name>
    <drawOrder>1</drawOrder>
    <Icon>
      <href>icon.jpg</href>
      <viewBoundScale>0.75</viewBoundScale>
    </Icon>
    <LatLonBox>
      <north>37.06467534059571</north>
      <south>37.02453087540336</south>
      <east>-121.7764114763516</east>
      <west>-121.9034130727271</west>
    </LatLonBox>
</GroundOverlay>
```

Values
Range from 0 to 99.

Parents

- <GroundOverlay>
- <ScreenOverlay>

<east>

This tag defines the longitude of east edge of the overlay image.

```
<LatLonBox>
   <north>37.06467534059571</north>
   <south>37.02453087540336</south>
   <east>-121.7764114763516</east>
   <west>-121.9034130727271</west>
 </LatLonBox>
```

Values
Dependent on the actual position required for the overlay image. You can specify longitude values as decimal degrees (WGS84).

Parents

- <LatLonBox>

<expires>

Specifies a date and time for expiration.

```
<expires>2006-01-12T12:13:14Z</expires>
```

Values
The date/time is expressed in ISO 8601 format (zulu time). This date/time for expiration takes precedence over HTTP expiration headers.

Parents

- <NetworkLinkControl>

<extrude>

Allows vertical extrusion of two-dimensional features. Placemarks, paths, and polygons can be extruded to form three-dimensional objects. See Geometry for more information.

```
<Polygon>
  <extrude>1</extrude>
  <altitudeMode>relativeToGround</altitudeMode>
```

```
  <outerBoundaryIs>
  . . .
  </outerBoundaryIs>
</Polygon>
```

Values
A Boolean value. The default is FALSE.

Parents

- <LinearRing>
- <LineString>
- <Model>
- <Polygon>
- <Point>

<fill>

A tag representing whether or not Google Earth renders a polygon with a fill (a solid color of varying opacity). If set to true, the fill color and opacity are derived from the <color> tag for the polygon. If neither <fill> nor <outline> are specified for the polygon, the polygon is drawn with *both* fill and outline. To set only fill for a polygon, you can simply set <outline> to 0.

Values
A Boolean value. The default is TRUE.

Parents

- <PolyStyle>

<flyToView>

A Boolean tag that is a child of <NetworkLink>. When set, updated KML from the server causes the viewer to update to the current view. This should be used sparingly for best user experience but is effective for such situations as alerts or notifications where the current 3D view in the client needs to be overridden.

```
<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns="http://earth.google.com/kml/2.1">
<NetworkLink>
  <name>NE US Radar</name>
  <flyToView>1</flyToView>
  <Link>
```

```
    <href>http://www.example.com/geotiff/NE/MergedReflectivityQComposite.kml</href>
    <refreshMode>onInterval</refreshMode>
    <refreshInterval>30</refreshInterval>
    <viewRefreshMode>onStop</viewRefreshMode>
    <viewRefreshTime>7</viewRefreshTime>
    <viewFormat>BBOX=[bboxWest],[bboxSouth],[bboxEast],[bboxNorth],
      [lookatLon],[lookatLat],[lookatRange],[lookatTilt],[lookatHeading]</viewFormat>
  </Link>
</NetworkLink>
</kml>
```

Values
A Boolean value. The default value is FALSE.

Parents

- <NetworkLink>

<Folder>

A top-level, optional tag used to structure hierarchical arrangement of other folders, placemarks, ground overlays, and screen overlays. Use this tag to structure and organize your information in Google Earth. See the introductory entry for Grouping Mechanisms for more details.

```
<Folder>
  <name>Name of Folder</name>
  <description>Descriptive text</description>
  <Folder>
    <name>SubFolder #1 Name</name>
    <description>Descriptive text</description>
    <Placemark>
      [placemark data here ...]
    </Placemark>
  </Folder>
  <Folder>
    <name>SubFolder #2 Name<name>
    <description>Descriptive text<description>
    <Placemark>
        [placemark data here ...]
    <Placemark>
  </Folder>
</Folder>
```

Parents

- <Document>
- <Folder>
- <NetworkLink>

Children

- <description>
- <Document>
- <Folder>
- <GroundOverlay>
- <LookAt>
- <name>
- <NetworkLink>
- <Placemark>
- <Region>
- <ScreenOverlay>
- <visibility>

<geomColor>

This tag is deprecated. Use <color> tag instead.

<GeometryCollection>

This tag is deprecated. Use <MultiGeometry> instead.

<geomScale>

This tag is deprecated. Use <scale> instead.

<GroundOverlay>

This element contains tags for defining and placing an overlay image on the globe. See Image Overlays for more information. The following example shows an overlay image for a weather map that is rotated in the 3D viewer and set with a slight transparency. By default, the visibility is set to on for ground overlays unless specified otherwise.

```
<GroundOverlay>
```

```
  <name>Weather Map</name>
  <LookAt>
    <longitude>-90.86879847669974</longitude>
    <latitude>48.25330383601299</latitude>
    <range>440.8</range>
    <tilt>8.3</tilt>
    <heading>2.7</heading>
  </LookAt>
  <color>9effffff</color>
  <drawOrder>1</drawOrder>
  <Icon>
    <href>icon.jpg</href>
    <refreshMode>onInterval</refreshMode>
    <refreshInterval>3600</refreshInterval>
    <viewRefreshMode>onStop</viewRefreshMode>
    <viewBoundScale>0.75</viewBoundScale>
  </Icon>
  <LatLonBox>
    <north>48.25475939255556</north>
    <south>48.25207367852141</south>
    <east>-90.86591508839973</east>
    <west>-90.8714285289695</west>
    <rotation>39.3</rotation>
  </LatLonBox>
</GroundOverlay>
```

Parents

- <Document>
- <Folder>

Children

- <color>
- <drawOrder>
- <Icon> (required)
- <LatLonBox> (required)
- <LookAt>
- <name>
- <visibility>

<h>

This tag is deprecated in KML 2.1.

<heading>

Specifies a rotation about the *z* axis. A positive rotation is counterclockwise around the *z* axis and specified in degrees.

When used as a child of <LookAt>, <heading> describes the angular distance along the horizon to the viewpoint. This is measured from north. The following example shows a heading due west.

```
<LookAt>
  <longitude>-90.86879895668633</longitude>
  <latitude>48.25329704862119</latitude>
  <range>436.2</range>
  <tilt>8.3</tilt>
  <heading>-90</heading>
</LookAt>
```

When <heading> is used as a child of <IconStyle> with a value of 0, it will fix the orientation of the icon so that it always points north, regardless of the heading of the view. Ordinarily, the icon has a fixed orientation relative to the camera position, so as the viewer is rotated, the icon always points to the top of the screen. Using the <heading> tag, you can fix the position of the icon using a value in degrees from north. To give an example, this is how you would rotate the specified icon to point to a heading of 270 (note that the orientation of the icon is now absolute and will rotate with the camera view):

```
<IconStyle>
  <heading>270</heading>
  <Icon>
    <href>icon.jpg</href>
  </Icon>
</IconStyle>
```

When <heading> is used as a child of <Orientation>, it describes the rotation of the model around the *z* axis. The *z* axis is a vector perpendicular to the earth's surface (when <tilt> and <roll> are 0).

```
<Orientation>
  <heading>45.0</heading>
  <tilt>10.0</tilt>
  <roll>0.0</roll>
</Orientation>
```

Values
User defined, set in degrees of rotation (0 to 360). Can be negative.

Parents

- <IconStyle>
- <LookAt>
- <Orientation>

<href>

An HTTP address or a local file specification used to load (1) a file, such as a KML file for a network link, (2) a 3D model for a <Model> tag, or (3) an image to be used for an overlay.

```
<Model id="khModel543">
   <altitudeMode>relativeToGround</altitudeMode>
   <Location>
      <latitude>-118.9813220168456</latitude>
      <longitude>39.55375305703105</longitude>
      <altitude>1223</altitude>
   </Location>
   <Orientation>
      <heading>45.0</heading>
      <tilt>10.0</tilt>
      <roll>0.0</roll>
   </Orientation>
   <Scale> <x>1.0</x> <y>1.0</y> <z>1.0</z> </Scale>
   <Link>
      <href>house.dae</href>
      <refreshMode>once</refreshMode>
   </Link>
</Model>
```

Values
An HTTP address or a local file:

```
C:/GoogleEarth/example.jpg
```

This is an example of the HTTP address of an image on a web server:

```
http://www.example.com/images/maps/weatherFrance.png
```

Parents

- <Icon>
- <Link>

<Icon>

Defines an image associated with an Icon style or overlay. The required <href> child element defines the location of the image to be used as the overlay or as the icon for the placemark. This location can either be on a local file system or a remote web server.

```
<Icon>
   <href>icon.jpg</href>
</Icon>
```

When using your own imagery for icons, keep in mind the following suggestions:

- Pixel width and height of an icon should be a power of 2 for best performance.
- Those pixels that have 0% opacity should also have their RGB values set to black. Because of the way some graphics chips filter the icons as they are drawn, this will avoid having the color from the transparent pixels bleed into the visible ones.
- Icons with straight horizontal or vertical lines tend to flicker when the user zooms in or out.

Parents

- <GroundOverlay>
- <ScreenOverlay>
- <Style>

Children

- <href>
- <refreshInterval>
- <refreshMode>
- <viewBoundScale>
- <viewFormat>
- <viewRefreshMode>
- <viewRefreshTime>
- <x>
- <y>

<IconStyle>

<IconStyle> specifies the following style properties for icons when drawing them in the 3D viewer:

- Color - White and 100% opaque are the default values for color (<color>ffffffff</color>).
- Color mode - Normal is the assumed default mode.
- Scale - The default scale is 1.0.

The following code snippet illustrates an icon style with a color of purple, a scale of 1.4, and a slight opacity.

```
<IconStyle>
      <color>ed7f0055</color>
      <colorMode>normal</colorMode>
      <scale>1.4</scale>
      <Icon>
        <href>icon.jpg</href>
      </Icon>
</IconStyle>
```

Parents

- <Style>

Children

- <color>
- <colorMode>
- <heading>
- <Icon> (required)
- <scale>

<innerBoundaryIs>

Defines the inner boundary of a polygon. For example, this can be used to define a lake within a polygon describing a parcel area, or it can be used when modeling 3D geometry.

```
<Polygon>
   <innerBoundaryIs>
      <LinearRing>
        <coordinates>-88.306534,30.227852,0.000000...-88.306534,30.227852,0.000000
        </coordinates>
      </LinearRing>
   </innerBoundaryIs>
</Polygon>
```

Parents

- <Polygon>

Children

- <LinearRing> (required)

<key>

Indicates either a normal or highlighted state for a style. See Style Maps for more details.

```
<StyleMap id="example_style">
   <Pair>
      <key>normal</key>
      <styleUrl>#example_style_off</styleUrl>
   </Pair>
   <Pair>
      <key>highlight</key>
      <styleUrl>#example_style_on</styleUrl>
   </Pair>
</StyleMap>
```

Values
Use either normal to indicate the style URL to be used as the default style for the feature, or highlight to indicate the style URL to be used when the feature is selected.

Parents

- <Pair>

<labelColor>

Deprecated. Use <LabelStyle> instead.

<LabelStyle>

<LabelStyle> specifies the following style properties for labels when drawing them in the 3D viewer. The label is the text drawn by the placemark on the 3D viewer:

- Color - White and 100% opaque is default value for color (<color>ffffffff</color>).
- Color mode - Normal is the assumed default mode.
- Scale - The default scale is 1.0.

The following code snippet illustrates an label style with a color of purple, a scale of 1.4, and an opacity of 93%.

```
<LabelStyle>
  <color>ed7f0055</color>
  <colorMode>normal</colorMode>
  <scale>1.4</scale>
</LabelStyle>
```

Parents

- <Style>

Children

- <color>
- <colorMode>
- <scale>

<latitude>

This element defines the distance on the Earth (measured in degrees) north or south of the equator.

```
<LookAt>
  <longitude>-90.86879847669974</longitude>
  <latitude>48.25330383601299</latitude>
  <range>440.8</range>
  <tilt>8.3</tilt>
  <heading>2.7</heading>
</LookAt>
```

Values
Determined by the observation coordinates of the particular view. Its units can be expressed in decimal degrees.

Parents

- <Location>

- <LookAt>

<LatLonAltBox>

A bounding box that describes an area of interest defined by geographic coordinates and altitudes.

See the KML 2.1 Tutorial for more detail.

Parents

- <Region>

Children

- <altitudeMode> (defaults to relativeToGround when used in a Region)
- <maxAltitude> (defaults to diagonal of LatLonAltBox)
- <minAltitude> (defaults to 0)
- <east> (required)
- <west> (required)
- <north> (required)
- <south> (required)

<LatLonBox>

Specifies a bounding box for the ground overlay.

See <GroundOverlay> for more detail.

```
<LatLonBox>
    <north>48.25475939255556</north>
    <south>48.25207367852141</south>
    <east>-90.86591508839973</east>
    <west>-90.8714285289695</west>
    <rotation>39.37878630116985</rotation>
</LatLonBox>
```

Parents

- <GroundOverlay>

Children

- <east> (required)
- <west> (required)
- <north> (required)
- <south> (required)
- <rotation> (default is 0 [north])

<LinearRing>

Defines the structure of a polygon, which must have an outer boundary, and can optionally have one or more inner boundaries to define a hole in the polygon. Uses the <coordinates> tag to express the values of the coordinate line strings. The last coordinate must be the same as the first coordinate.

Note: If the PolyStyle outline is enabled, repeat the first coordinate after the last coordinate to make the outline to follow the last edge.

```
<Polygon>
   <outerBoundaryIs>
      <LinearRing>
        <coordinates>
           -88.306534,30.227852,0.000000
            88.306534,30.227852,0.000000
        </coordinates>
      </LinearRing>
    </outerBoundaryIs>
</Polygon>
```

Parents

- <innerBoundaryIs>
- <outerBoundaryIs>

Children

- <altitudeMode>
- <coordinates> (required)
- <extrude>

<LineString>

Defines a connected set of line segments. Uses the <coordinates> tag to express the points. For more information on line drawing properties, see <LineStyle>. An extruded LineString looks like a fence.

Note: <LineString> uses multiple triples in coordinates. See <LineStyle> to learn about altering default line drawing properties.

```
<LineString>
   <coordinates>
      -88.306534,30.227852,0.000000
       88.306534,30.227852,0.000000
  </coordinates>
</LineString>
```

Parents

- <Placemark>
- <MultiGeometry>

Children

- <altitudeMode>
- <coordinates>
- <extrude>
- <tessellate>

<LineStyle>

Specifies these line drawing properties with defaults as indicated:

- Color - White and 100% opaque is default value for color (<color>ffffffff</color>).
- Color mode - Normal is the assumed default mode.
- Width - The default width is 1.0 pixel.

The following code snippet illustrates a 50 percent opaque red line with a width of 4 pixels. The id attribute allows you to define instances of <LineStyle>.

```
<LineStyle id="khLineStyle989">
      <color>7f0000ff</color>
      <width>4</width>
</LineStyle>
```

Parents

- <Style>

Children

- <color>
- <colorMode>
- <width>

<Link>

The <Link> element is new in KML 2.1. It replaces the <Url> element contained in earlier KML releases and adds functionality for the <Region> element (also introduced in KML 2.1). In Google Earth releases 3.0 and earlier, the <Link> element is ignored.

The file is loaded and conditionally refreshed, depending on the refresh parameters supplied here. Two different kinds of refresh parameters can be specified: one set is based on *time* (<refreshMode> and <refreshInterval>) and one is based on the current "camera" *view* (<viewRefreshMode> and <viewRefreshtime>). In addition, Link specifies whether to scale the bounding box parameters that are sent to the server (<viewBoundScale> and provides a set optional viewing parameters that can be sent to the server (<viewFormat>).

```
<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns="http://earth.google.com/kml/2.1">
<NetworkLink>
  <name>Query Current View</name>
  <Link>
    <href>http://myserver.com/viewbasedrefresh.py</href>
    <viewRefreshMode>onStop</viewRefreshMode>
    <viewRefreshTime>2</viewRefreshTime>
  </Link>
</NetworkLink>
</kml>
```

Parents
Contained by:

- <Model>
- <NetworkLink>

Children

- <href> (required)
- <refreshInterval>
- <refreshMode>
- <viewBoundScale>
- <viewFormat>
- <viewRefreshMode>
- <viewRefreshtime>

<linkDescription>

This tag allows the server to control the appearance of the Network Link's description and will override the string that appears in the Network Link's <description> field. You can use this to override description edits made by the end user.

```
<linkDescription><![CDATA[KML now has new features available!]]></linkDescription>
```

Values
A user-specified string. See the information for <description> for details on text formatting.

Parents

- <NetworkLinkControl>

<linkName>

Allows the server to control the appearance of the Network Link's name in the *Places* view. It will override the string that appears in the Network Link's <name> field. You can use this to override edits made by the end user.

```
<linkName>New KML features</linkName>
```

Values
A user-specified string. See the information for <name> for details on text formatting.

Parents

- <NetworkLinkControl>

<listItemType>

Defines a presentation style in the Places panel of Google Earth.

Values

- **checkHideChildren** - The Folder is displayed, but its children are hidden in the Places panel. A checkbox allows the user to toggle visibility of the child objects in the viewer.
- **radioFolder** - Children in this folder are displayed with radio-style buttons; only one child can be active at a time.

```
<Style>
   <ListStyle>
      <listItemType>radioFolder</listItemType>
   </ListStyle>
</Style>
```

Parents

- <ListStyle>

<ListStyle>

Applies a common style to all items contained in a folder.

```
<Style>
   <ListStyle>
      <listItemType>radio</listItemType>
   </ListStyle>
</Style>
```

Parents

- <Style>

Children

- <color>
- <colorMode>
- <listItemType>

<Location>

Defines a spot in 3D space. When used in <Model>, specifies the exact coordinates of the origin of a 3D model in latitude, longitude, and altitude. Latitude and longitude measurements are standard lat-lon projection with WGS84 datum. Google Earth uses simple cylindrical projection (or Plate Carrée), which is a simple map projection where the meridians and parallels are equidistant parallel lines, with the two sets crossing at right angles.

```
 <Location>
   <latitude>-118.9813220168456</latitude>
   <longitude>39.55375305703105</longitude>
   <altitude>1223</altitude>
</Location>
```

Parents

- <Model>

Children

- <altitude>
- <latitude>
- <longitude>

<Lod>

<Lod> is an abbreviation for Level of Detail. When used with Region, <Lod> describes the size of the projected region on the screen that is required in order for the region to be considered "active." Also specifies the size of the pixel ramp used for fading in (from transparent to opaque) and fading out (from opaque to transparent). See the KML 2.1 Tutorial.

```
<Lod>
   <maxLodPixels>1024</maxLodPixels>
   <maxFadeExtent>128</maxFadeExtent>
   <minLodPixels>128</minLodPixels>
   <minFadeExtent>128</minFadeExtent>
</Lod>
```

Parents

- <Region>

Children

- <maxFadeExtent>

- <maxLodPixels>
- <minFadeExtent>
- <minLodPixels>

<longitude>

This element defines the distance on the Earth (measured in degrees) east (positive values above 0 to 180 degrees) or west (negative values below 0 to 180 degrees) of the Greenwich Meridian.

```
<LookAt>
    <longitude>-90.86879847669974</longitude>
    <latitude>48.25330383601299</latitude>
    <range>440.8490922646644</range>
    <tilt>8.39474026454335</tilt>
    <heading>2.701112047774894</heading>
</LookAt>
```

Values
Determined by the observation coordinates of the particular view. Its units can be expressed in decimal degrees.

Parents

- <Location>
- <LookAt>

<LookAt>

Defines the observation coordinates or eye point of the parent placemark, folder, or ground overlay.

```
<LookAt>
    <longitude>-90.868798</longitude>
    <latitude>48.253297</latitude>
    <range>738.608</range>
    <tilt>8.394</tilt>
    <heading>2.701</heading>
</LookAt>
```

Parents

- <Folder>

- <Document>
- <Placemark>
- <GroundOverlay>

Children

- <altitude>
- <heading>
- <latitude> (required)
- <longitude> (required)
- <range>
- <tilt>

<maxAltitude>

Specifies the upper altitude limit of the geographic area of interest for a Region. A Region is considered "active" only when the LatLonAltBox is within view (and when the projected imagery falls within the specified range of LOD pixels). See the KML 2.1 Tutorial for more detail.

Values
An integer representing meters. Defaults to a measurement equal to the diagonal of the LatLonAltBox.

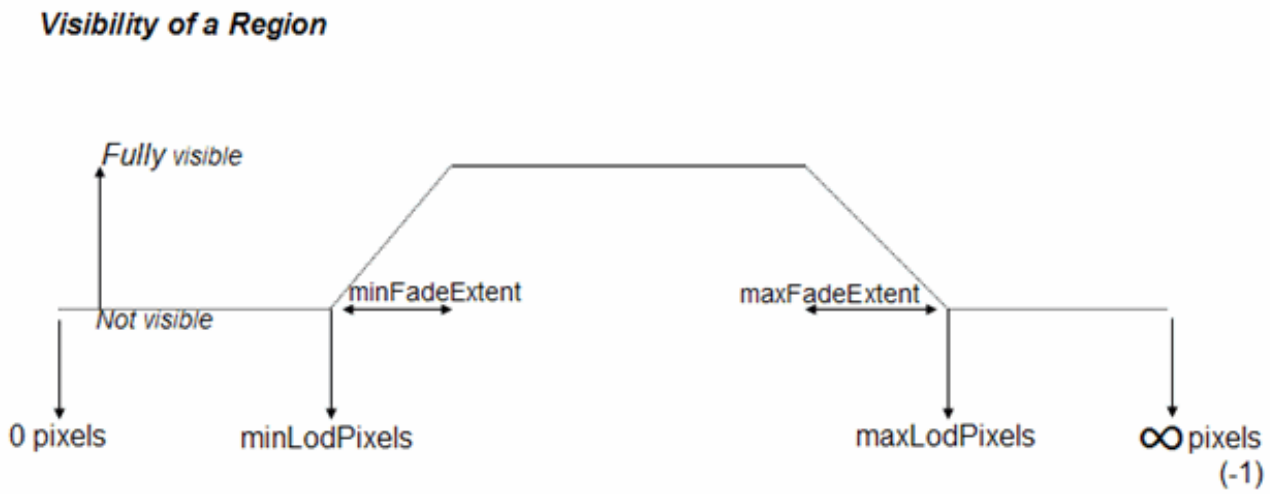
```
<maxAltitude>15000</maxAltitude>
```

Parents

- <LatLonAltBox>

<maxFadeExtent>

Distance over which the geometry fades, from fully transparent to fully opaque. This ramp value, expressed in pixels, is applied at the maximum end of the LOD (visibility) range. See the KML 2.1 Tutorial for more detail.



Values
A positive integer representing screen pixels. Default value is 0.

```
<maxFadeExtent>25</maxFadeExtent>
```

Parents

- <Lod>

<maxLodPixels>

Measurement in screen pixels that represents the maximum limit in order for a given Region to be considered "active." Google Earth calculates the size of the Region when projected onto screen space. Then it computes the square root of the Region's area (if, for example, the Region is square and the viewpoint is directly above the Region, and the Region is not tilted, this measurement is equal to the width of the projected Region). If this measurement falls within the limits defined by <minLodPixels> and <maxLodPixels> (and if the <LatLonAltBox> is in view), the Region is active. If this limit is exceeded, any geometry related to the Region is considered to be too far away from the user's viewpoint to be drawn, and the Region itself is considered to be inactive. See the KML 2.1 Tutorial for more detail.

Values
A positive integer representing screen pixels. A value of -1 means "visible/active to infinite size."

```
<maxLodPixels>1024</maxLodPixels>
```

Parents

- <Lod>

<message>

When specified, the string within this tag will be displayed in a pop-up message box in Google Earth when the file is first fetched. It will be displayed again only if the message text has changed, or if the file is completely reloaded into the client.

```
<message>This is a pop-up message. You will see this only once</message>
```

Values
A user-specified string.

Parents

- <NetworkLinkControl>

<minAltitude>

Specifies the lower altitude limit of the geographic area of interest for a Region. When a Region is defined, associated geometry is visible only when the LatLonAltBox is within the user's view (and when the projected imagery falls within the specified range of LOD pixels). If these conditions are not met, the Region is considered to be inactive. See the KML 2.1 Tutorial for more detail.

```
<minAltitude>2500</minAltitude>
```

Values
An integer representing meters. Default value is 0.

Parents

- <LatLonAltBox>

<minFadeExtent>

Distance over which the geometry fades, from fully opaque to fully transparent. This ramp value, expressed in screen pixels, is applied at the minimum end of the LOD (visibility) limits. See the KML 2.1 Tutorial for more detail.

```
<minFadeExtent>25</minFadeExtent>
```

Values
Positive integer representing screen pixels. Default value is 0.

Parents

- <Lod>

<minLodPixels>

Measurement in screen pixels that represents the minimum limit of the visibility range for a given Region. Google Earth calculates the size of the Region when projected onto screen space. Then it computes the square root of the Region's area (if, for example, the Region is square and the viewpoint is directly above the Region, and the Region is not tilted, this measurement is equal to the width of the projected Region). If this measurement falls within the limits defined by <minLodPixels> and <maxLodPixels> (and if the <LatLonAltBox> is in view), the Region is active. If this limit is not reached, the associated geometry is considered to be too near the user's viewpoint to be drawn. See the KML 2.1 Tutorial for more detail.

```
<minLodPixels>256</minLodPixels>
```

Values
Positive integer representing screen pixels.

Parents
Contained by:

- <Lod>

<minRefreshPeriod>

Specified in seconds, this is the minimum allowed time between fetches of the file. If, for example, you have a file that is changing only once every hour, you can throttle fetches of that file to a minimum of once every hour.

```
<minRefreshPeriod>3600</minRefreshPeriod>
```

Values
Number specified in seconds.

Parents

- <NetworkLinkControl>

<Model>

A 3D object described in a Collada file (referenced in the <Link> tag). Collada files have a *.dae* file extension. Models are created in their own coordinate space and then located, positioned, and scaled in Google Earth. See the KML 2.1 Tutorial for more detail.

```
<Model id="khModel543">
   <altitudeMode>relativeToGround</altitudeMode>
   <Location>
      <latitude>-118.9813220168456</latitude>
      <longitude>39.55375305703105</longitude>
      <altitude>1223</altitude>
   </Location>
   <Orientation>
      <heading>45.0</heading>
      <tilt>10.0</tilt>
      <roll>0.0</roll>
   </Orientation>
   <Scale>
      <x>1.0</x>
      <y>1.0</y>
      <z>1.0</z>
   </Scale>
   <Link>
      <href>house.dae</href>
      <refreshMode>once</refreshMode>
   </Link>
</Model>
```

KML 2.1 supports the Collada common profile, with the following exceptions:

- KML supports only triangles and lines as primitive types
- KML does not support animation or skinning.

Parents

- <MultiGeometry>
- <Placemark>

Children

- <altitudemode>
- <extrude>
- <Link>
- <Location>
- <Orientation>
- <Scale>

<MultiGeometry>

A tag used to group more than one geometry element, such as multiple polygons used to define a single feature (such as a 3D building) for display in the Google Earth 3D viewer.

```
<MultiGeometry>
   <Polygon>
      <outerBoundaryIs>
         <LinearRing>
            <coordinates>.....
            </coordinates>
         </LinearRing>
      </outerBoundaryIs>
    </Polygon>
    <Polygon>
      <outerBoundaryIs>
         <LinearRing>
            <coordinates>.....
            </coordinates>
         </LinearRing>
      </outerBoundaryIs>
    </Polygon>
</MultiGeometry>
```

Parents

- <Placemark>

Children

- <LineString>
- <Model>
- <MultiGeometry>

- <Point>
- <Polygon>

<name>

This tag is used in Google Earth as the label for a placemark, folder, or network link, for example. It can also be used by the <Schema> element as an identifier.

```
<Folder>
   <name>Favorite Places</name>
. . .
</Folder>
```

Values
User-defined text. HTML markup is not supported. All entered characters are displayed in the 3D viewer as the label.

Parents

- <Folder>
- <Document>
- <GroundOverlay>
- <Placemark>
- <ScreenOverlay>
- <Schema>

<NetworkLink>

Defines a referenced KML file on a local or remote network. You can set the location of the link to the KML file using the <Link> tag. Within that tag, you can define the refresh options in order to update information based on time and camera change. You can also use the <viewFormat> tag to return a variable to the server that contains a string containing client viewing information, such as what the current bounding box of the client is, or the current heading. Network links can be used in combination with regions to handle very large datasets efficiently.

See also <NetworkLinkControl>, <Region> and <Update>.

```
<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns="http://earth.google.com/kml/2.1">
<Document>
   <visibility>1</visibility>
   <NetworkLink>
```

```
    <name>NE US Radar</name>
    <flyToView>1</flyToView>
    <Link>
      <href>http://www.example.com/geotiff/NE/MergedReflectivityQComposite.kml</href>
      <refreshMode>onInterval</refreshMode>
      <refreshInterval>30</refreshInterval>
      <viewRefreshMode>onStop</viewRefreshMode>
      <viewRefreshTime>7</viewRefreshTime>
      <viewFormat>BBOX=[bboxWest],[bboxSouth],[bboxEast],[bboxNorth],
          [lookatLon],[lookatLat],[lookatRange],[lookatTilt],[lookatHeading]</viewFormat>
    </Link>
    <refreshVisibility>1</refreshVisibility>
  </NetworkLink>
</Document>
</kml>
```

Parents

- <Folder>
- <Document>

Children

- <open>
- <flyToView>
- <Link> (required)
- <name>
- <refreshVisibility>
- <Region>
- <visibility>

<NetworkLinkControl>

Controls the behavior of files fetched via <NetworkLink>. Using this feature, you have access to a number of features via its children. Specifically, these include:

- **Minimum refresh period** - You can use the <minRefreshPeriod> element as a server throttle to limit the number of fetches to your server to a specified minimum period. For example, if a user sets a link refresh to 5 seconds, you can set your minimum refresh period to 3600 to limit refresh updates to every hour.
- **Pop-up message** - You can deliver a pop-up message, such as usages guidelines for your network link. The message appears only once each time the network link is loaded into the client, or if the message text is updated on the server.
- **Cookie** - Use the <cookie> element to append the text to the URL query on the next refresh of the network link. You can use this in your script to provide more intelligent handling on the server side, including version querying and conditional file delivery.

- **Name and description** - You can control the name and the description of the network link from the server, so that changes made to the name and description on the server side are over-ridden by the server.
- **Expiration** - You can specify a date/time at which the link should be refreshed. See <expires>.
- **Update** - With <update>, you can specify any number of Change, Create, and Delete tags for a *.kml* or *.kmz* file that has previously been loaded via a network link.

```
<NetworkLinkControl>
   <message>This is a pop-up message. You will only see this once</message>
   <cookie>someCookieText</cookie>
   <linkName>New KML features</linkName>
   <linkDescription><![CDATA[KML now has new features available!]]></linkDescription>
</NetworkLinkControl>
```

Parents

- <Document>

Children

- <cookie>
- <expires>
- <linkDescription>
- <linkName>
- <message>
- <minRefreshPeriod>
- <Update>

<north>

Defines the latitude of the north edge of the overlay image.

```
<LatLonBox>
  <north>48.25475939255556</north>
  <south>48.25207367852141</south>
  <east>-90.86591508839973</east>
  <west>-90.8714285289695</west>
  <rotation>39.3</rotation>
 </LatLonBox>
```

Values
Dependent on the actual position required for the overlay image. Latitude value can be specified as decimal degrees.

Parents

- <LatLonBox>

<ObjArrayField>

Defines a schema field for an array of (pointers to) schema objects. Uses the <type> element for the type name of the objects in the array.

Parents

- <Schema>

Children

- <name> (required)
- <type> (required)

<ObjField>

Used to define a type of field (pointer to) for a schema object. Uses the <type> element for the type name of the object.

Parents

- <Schema>

Children

- <name> (required)
- <type> (required)

<open>

This element defines whether the folder appears open or closed when Google Earth first loads the folder.

```
<Folder>
   <name>Name of Folder</name>
   <open>0</open>
   <description>Descriptive text</description>
```

```
      <Folder>
        <name>SubFolder #1 Name</name>
        <description>Descriptive text</description>
        <Placemark>
          [placemark data here ...]
        </Placemark>
      </Folder>
      <Folder>
         <name>SubFolder #2 Name<name>
         <description>Descriptive text</description>
         <Placemark>
            [placemark data here ...]
         </Placemark>
      </Folder>
</Folder>
```

Values
On load, a value of 1 will cause the folder to appear in its expanded state. A value of 0 will load the folder in its collapsed state. Set the folder to load in the collapsed state for folders containing a large number of features. This will ensure faster load time in Google Earth.

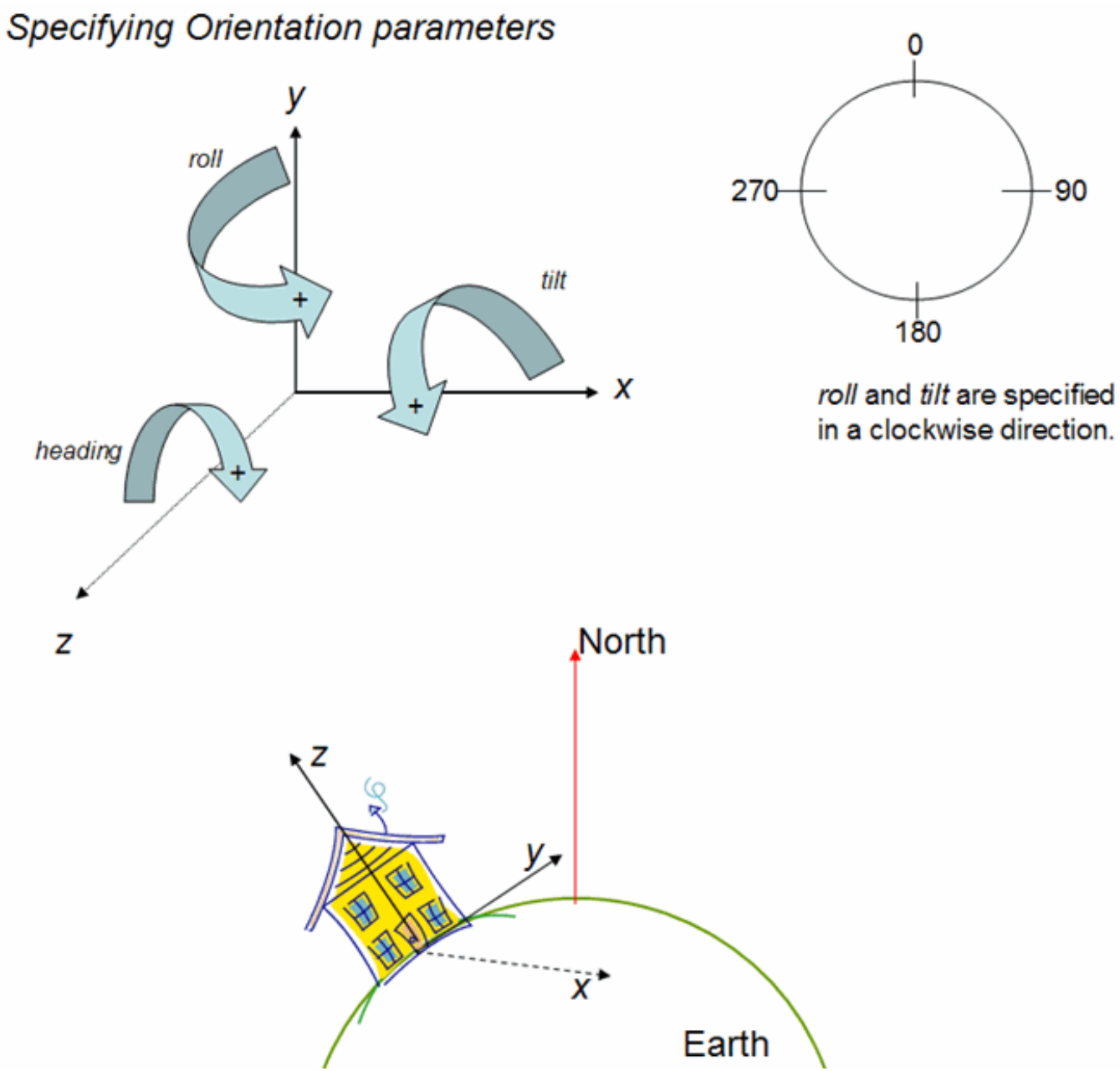
Parents

- <Folder>

<Orientation>

When used in <Model>, describes rotation of a 3D model's coordinate system to position the object in Google Earth.

```
<Orientation>
   <heading>45.0</heading>
   <tilt>10.0</tilt>
   <roll>0.0</roll>
</Orientation>
```



Parents

- <Model>

Children

- <heading>
- <roll>
- <tilt>

<outerBoundaryIs>

Defines the outer boundary of a polygon. Required.

```
<Polygon>
   <outerBoundaryIs>
      <LinearRing>
        <coordinates>-88.306534,30.227852,0.000000...-88.306534,30.227852,0.000000
        </coordinates>
      </LinearRing>
   </outerBoundaryIs>
</Polygon>
```

Parents

- <Polygon>

Children

- <LinearRing> (required)

<outline>

A simple tag representing whether or not a polygon is to be rendered with an outline. If set to true, the outline color and opacity are derived from the <color> tag for the <LineStyle>. If neither <fill> nor <outline> are specified for the polygon, the polygon is drawn with *both* fill and outline. To set only outline for a polygon, you can simply set <fill> to 0.

Values
A Boolean value. The default is TRUE.

Parents

- <PolyStyle>

<overlayXY>

Defines the coordinate point on the overlay image itself that will be used to map to the screen coordinate. It requires X and Y values, and the units for those values (either pixels or fraction). For example, <overlayXY x="1" y="1" xunits="fraction" yunits="fraction"/> affects the upper right corner of the image. Used with <screenXY of x="-50" y="0.9" xunits="pixels" yunits="fraction"/>, this measurement places the upper right corner of the image 50 pixels inset from the right edge of the screen and 10 percent below the top edge of the screen.

Values
The x and y components can be specified in one of the following ways:

Center the image:

```
<ScreenOverlay>
  <overlayXY x="0.5" y="0.5" xunits="fraction" yunits="fraction"/>
  <screenXY x="0.5" y="0.5" xunits="fraction" yunits="fraction"/>
</ScreenOverlay>
```

Place the image on the top left:

```
<ScreenOverlay>
  <overlayXY x="0" y="1" xunits="fraction" yunits="fraction"/>
  <screenXY x="0" y="1" xunits="fraction" yunits="fraction"/>
</ScreenOverlay>
```

Placing the image at the right of the screen:

```
<ScreenOverlay>
  <overlayXY x="1" y="1" xunits="fraction" yunits="fraction"/>
  <screenXY x="1" y="1" xunits="fraction" yunits="fraction"/>
</ScreenOverlay>
```

Parents

- <ScreenOverlay>

<Pair>

Defines a key/value pair to provide multiple style references for such things as modes. See Style Maps for more information.

```
<StyleMap id="example_style">
   <Pair>
```

```
      <key>normal</key>
      <styleUrl>#example_style_off</styleUrl>
   </Pair>
   <Pair>
      <key>highlight</key>
      <styleUrl>#example_style_on</styleUrl>
   </Pair>
</StyleMap>
```

Parents

- <StyleMap>

Children

- <key> (required)
- <styleUrl> (required)

<parent>

Defines the base type to which further schema fields are added. See Schemas for more details.

```
<Schema>
   <name>High School</name>
   <parent>Placemark</parent>
   <SimpleField>
      <name>Address</name>
      <type>wstring</type>
   </SimpleField>
   <SimpleField>
      <name>Average SAT score</name>
      <type>int</type>
   </SimpleField>
</Schema>
```

Values
Defined as one of the existing KML base types.

Parents

- <Schema>

<Placemark>

Use a placemark to describe a point (Icon), line, path, or polygon on the planet surface. You can define a number of other elements for placemark entries, including <LookAt> coordinates, name, and description. See Placemarks for more details.

```
<Placemark>
    <name>Google Earth - New Placemark</name>
    <description>Some Descriptive text.</description>
    <LookAt>
      <longitude>-90.86879847669974</longitude>
      <latitude>48.25330383601299</latitude>
      <range>440.8</range>
      <tilt>8.3</tilt>
      <heading>2.7</heading>
    </LookAt>
    <Point>
      <coordinates>-90.86948943473118,48.25450093195546,0</coordinates>
    </Point>
</Placemark>
```

Parents

- <Folder>
- <Document>

Children

- <description>
- <LookAt>
- <LineString>
- <Model>
- <Multigeometry>
- <name>
- <Point>
- <styleUrl>
- <Style>
- <visibility>

<Point>

Defines the geographic location of a point coordinate in the 3D viewer. Uses the <coordinates> tag to express the values of the point location. Note that when this tag is when used within a <MultiGeometry>, the coordinates tag can contain longitude,

latitude, and altitude only.

```
<Placemark>
    . . .
    <Point>
      <coordinates>-90.86948943473118,48.25450093195546,0</coordinates>
    </Point>
</Placemark>
```

Parents

- <MultiGeometry>
- <Placemark>

Children

- <altitudeMode>
- <coordinates>
- <extrude>

<Polygon>

Defines a polygon. Uses <outerBoundaryIs> by default to define an outer boundary.

```
<Polygon>
   <outerBoundaryIs>
      <LinearRing>
        <coordinates>-88.306534,30.227852,0.000000...
          -88.306534,30.227852,0.000000</coordinates>
      </LinearRing>
   </outerBoundaryIs>
</Polygon>
```

Additionally, you can also use <innerBoundaryIs> to define holes within the polygon.

Parents

- <MultiGeometry>
- <Placemark>

Children

- <altitudeMode>
- <extrude>
- <innerBoundaryIs>
- <outerBoundaryIs> (required)

<PolyStyle>

The <PolyStyle> element indicates the following style properties for polygons when drawing them in the 3D viewer:

- Color
- Color mode
- Fill
- Outline

By default, both fill and outline are assumed to be true if neither are specified. The following code snippet illustrates a polygon style with color, color mode, and outline but no fill.

```
<PolyStyle>
      <color>ff0000ff</color>
      <colorMode>random</colorMode>
      <fill>0</fill>
      <outline>1</outline>
</PolyStyle>
```

Parents

- <Style>

Children

- <color>
- <colorMode>
- <fill>
- <outline>

<range>

The <range> tag determines the altitude of the eye point.

```
<LookAt>
    <longitude>-90.86879895745898</longitude>
    <latitude>48.25329705085941</latitude>
    <range>738.6083569292965</range>
    <tilt>8.394733471860304</tilt>
    <heading>2.701081133141738</heading>
</LookAt>
```

Values
Determined by the observation coordinates of the particular view. Its units can be expressed in meters.

Parents

- <LookAt>

<refreshInterval>

Indicates the time to refresh a network link url or overlay image in seconds.

```
<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns="http://earth.google.com/kml/2.1">
<GroundOverlay>
  <name>MergedReflectivityQComposite_20051006-012008.tif</name>
  <Icon>
    <href>icon.jpg</href>
    <viewRefreshMode>onRequest</viewRefreshMode>
  </Icon>
  <LatLonBox>
    <north>0</north>
    <south>0</south>
    <east>0</east>
    <west>0</west>
  </LatLonBox>
  <refreshInterval>60</refreshInterval>
</GroundOverlay>
</kml>
```

Values
Indicated in seconds. If the value is greater than 0, the image or URL is refreshed every n seconds. If the value is less then 0, the image will never be loaded, and if the value is equal to 0, the image is loaded once.

Parents

- <GroundOverlay>
- <Link>
- <ScreenOverlay>

<refreshMode>

Sets the type of refresh that is done to a network link or ground overlay:

- Refreshing only once upon loading in Google Earth (default)
- Refreshing on a designated interval
- Refreshing when a specified expiration date/time is reached

```
<Link>
  <href>http://www.example.com/geotiff/NE/MergedReflectivityQComposite.kml</href>
  <refreshMode>onInterval</refreshMode>
  <refreshInterval>30</refreshInterval>
  <viewRefreshMode>onStop</viewRefreshMode>
  <viewRefreshTime>7</viewRefreshTime>
  <viewFormat>BBOX=[bboxWest],[bboxSouth],[bboxEast],[bboxNorth],
    [lookatLon],[lookatLat],[lookatRange],[lookatTilt],[lookatHeading]</viewFormat>
</Link>
    . . .
<Icon>
  <href>icon.jpg</href>
  <refreshMode>onInterval</refreshMode>
  <viewRefreshMode>onRequest</viewRefreshMode>
</Icon>
```

Values

- *onInterval* indicates a time-based refresh of the KML or the ground overlay
- *onExpire* indicates to refresh the link when the <expires> time has been reached.

Parents

- <Icon>
- <Link>

<refreshVisibility>

Maintains the default visibility of features within the KML document to which the network link points. When enabled, overrides visibility set by the Google Earth user when the link is refreshed.

```
<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns="http://earth.google.com/kml/2.1">
<Document>
<visiblity>1</visbility>
<NetworkLink>
  <name>NE US Radar</name>
  <flyToView>1</flyToView>
  <Link>
   . . .
  </Link>
  <refreshVisibility>1</refreshVisibility>
</NetworkLink>
</Document>
</kml>
```

Values

The default value is 0, leaving the visibility within the control of Google Earth. Set the value to 1 to reset the default visibility of features each time the network link is refreshed. For example, suppose a placemark within the linked KML file has <visibility> set to 1 and <refreshVisibility> set to 1. When the file is first loaded into Google Earth, the user can clear the check box next to the item to turn off display in the 3D viewer. However, when the network link is refreshed, the item will be made visible again, since its default visibility state was true.

Parents

- <NetworkLink>

<Region>

A region contains a *bounding box* (<LatLonAltBox>) that describes an area of interest defined by geographic coordinates and altitudes. In addition, a region contains an *LOD (level of detail) range* (<Lod>), which defines a validity range of the associated Region in terms of projected screen size. Objects associated with a region are drawn only when the bounding box is within the user's view *and* the LOD requirements are met. A Network Link with a Region that uses *onRegion* for the viewRefreshMode loads the Region only when the bounding box is within view and the LOD requirements are met. See the KML 2.1 Tutorial for more details.

```
<NetworkLink>
  <name>root_203100</name>
  <Region>
    <LatLonAltBox>
      <north>50.625</north>
      <south>45</south>
      <east>28.125</east>
      <west>22.5</west>
```

```
      <minAltitude>10</minAltitude>
      <maxAltitude>50</maxAltitude>
    </LatLonAltBox>
    <Lod>
      <minLodPixels>128</minLodPixels>
      <maxLodPixels>1024</maxLodPixels>
      <minFadeRange>128</minFadeRange>
      <maxFadeRange>128</maxFadeRange>
    </Lod>
  </Region>
  <Link>
    <href>path=root_203100.kml</href>
    <viewRefreshMode>onRegion</viewRefreshMode>
  </Link>
```

Parents

- <Document>
- <Folder>
- <GroundOverlay>
- <NetworkLink>
- <Placemark>
- <ScreenOverlay>

Children

- <LatLonAtlBox> (required)
- <Lod>

<request>

Indicates the type of query that was made. Currently, this value is "geocode."

```
<Status>
    <request>geocode<request>
    <code>200</code>
</Status>
```

Values
The current value for this element is *geocode*.

Parents

- <Status>

<Response>

<Response>, <Status>, and the <AddressDetails> addition to Placemark, have been added to KML 2.1 to facilitate Google Map's geocoding service which returns KML in response to a geocoding query. For a given query, the geocoder returns a KML file whose root is <Response>. <Response> contains a single <Status> and <Placemark> element, the former indicating the success of the request while the latter provides the latitude and longitude of the geocode result in the <coordinates> element of the Placemark's <Point> element. A "structured" address, one which decomposes an address into its consituent parts, is provided by the Placemark's <AddressDetails> element. <AddressDetails> uses the extensible Address Language, version 2.0 (xAL) . The geocode address is also provided in an unstructured format (as a simple string) in the Placemark's <address> tag. Google Earth 4.0 currently ignores all <Response>, <Status>, and <AddressDetails> elements.

```
<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns="http://earth.google.com/kml/2.1">
  <Response>
    <name>95008</name>
    <Status>
      <code>200</code>
      <request>geocode</request>
    </Status>
    <Placemark>
      <address>Campbell, CA 95008, USA</address>
      <AddressDetails>
        <Country>
          <CountryNameCode>US</CountryNameCode>
          <AdministrativeArea>
            <AdministrativeAreaName>CA</AdministrativeAreaName>
            <Locality>
              <LocalityName>Campbell</LocalityName>
              <PostalCode>
                <PostalCodeNumber>95008</PostalCodeNumber>
              </PostalCode>
            </Locality>
          </AdministrativeArea>
        </Country>
      </AddressDetails>
      <Point>
        <coordinates>-121.955390,37.280007,0</coordinates>
      </Point>
    </Placemark>
  </Response>
</kml>
```

Parents

- <kml>

Children

- <Placemark>
- <Status>

<roll>

When <roll> is used as a child of <Orientation>, it describes the rotation of the model around the *y* axis. The *y* axis is parallel to longitude lines. (When <heading> and <roll> are 0, the *x* axis points east. When <heading> and <tilt> are 0, the *y* axis points north. When <tilt> and <roll> are 0, the *z* axis point straight up into the sky.) A positive rotation is clockwise around the *y* axis and specified in degrees from 0 to 360.

```
<Orientation>
   <heading>45.0</heading>
   <tilt>10.0</tilt>
   <roll>0.0</roll>
</Orientation>
```

Values
Degrees of rotation, from 0 to 360 (can be negative).

Parents

- <Orientation>

<rotation>

Indicates the angle of rotation of the parent object. The default is 0 (north). The value is an angle in degrees counterclockwise starting from north.

```
<LatLonBox>
   <north>48.25475939255556</north>
   <south>48.25207367852141</south>
   <east>-90.86591508839973</east>
   <west>-90.8714285289695</west>
   <rotation>39.3</rotation>
```

```
 </LatLonBox>
```

Values
Use + or - 180 to indicate the rotation of the parent object from 0, which is the default orientation of the image. Note that 0 means no rotation.

Parents

- <LatLonBox>
- <ScreenOverlay>

<Scale>

Scales a model along the *x*, *y*, and *z* axes.

```
<Scale>
   <x>2.5</x>
   <y>2.5</y>
   <z>3.5</z>
</Scale>
```

Parents

- <Model>

Children

- <x>
- <y>
- <z>

<scale>

Scales the dimensions of an element along both x and y axes. You can use this attribute to scale icons and labels to alter their size in the Google Earth 3D viewer.

```
<IconStyle id="khIconStyle1027">
      <color>7fff0000</color>
      <scale>1.799999952316284</scale>
      <Icon>
```

```
        <href>icon.jpg</href>
      </Icon>
</IconStyle>
```

Values
Values are indicated as a floating point unit. For example, a <scale> value of 0.5 would decrease the overall dimensions of the icon or label by half. Similarly, a <scale> value of 2.0 would double the overall dimension of the icon or label.

Parents

- <IconStyle>
- <LabelStyle>

<Schema>

Defines a custom schema to enable KML to properly interpret elements in your KML not native to the default KML schema. Using this tag and its children, you can define your own schema as a set of named and typed XML elements. See Schemas.

Parents
None

Children

- <name> (required)
- <parent> (required)
- <ObjField>
- <ObjArrayField>
- <SimpleField>
- <SimpleArrayField>

<ScreenOverlay>

This element contains tags for defining and placing an image on the screen. See Image Overlays for details. The KML code for placing an image (with original width, height and aspect ratio) at the exact center of the screen looks as follows:

```
<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns="http://earth.google.com/kml/2.1">
  <ScreenOverlay id="khScreenOverlay756">
     <description>This screen overlay uses fractional positioning
        to put the image in the exact center of the screen</description>
     <name>Simple crosshairs</name>
```

```
    <visibility>0</visibility>
    <Icon>
       <href>http://myserver/myimage.jpg</href>
    </Icon>
    <overlayXY x="0.5" y="0.5" xunits="fraction" yunits="fraction"/>
    <screenXY x="0.5" y="0.5" xunits="fraction" yunits="fraction"/>
    <rotation>39.37878630116985</rotation>
    <size x="0" y="0" xunits="pixels" yunits="pixels"/>
  </ScreenOverlay>
</kml>
```

Parents

- <Folder>
- <Document>

Children

- <drawOrder>
- <Icon> (required)
- <rotation>
- <screenXY>
- <name>
- <visibility>

<screenXY>

Defines the coordinate points on the screen itself that the overlay image will be mapped to. For example, a screenXY of (-50, 0.9) with an overlayXY of (1,1) places the upper right corner of the image 50 pixels inset from the right edge of the screen and 10% below the top edge of the screen. The "x" and "y" XML attributes are used. The coordinate system is relative to the lower left side. Default units are pixels but you can use "xunits" and "yunits" attributes to specify fractions of the screen (see examples below).

x and y can be specified in one of the following ways:

Center the image:

```
<ScreenOverlay>
  <overlayXY x="0.5" y="0.5" xunits="fraction" yunits="fraction"/>
  <screenXY x="0.5" y="0.5" xunits="fraction" yunits="fraction"/>
</ScreenOverlay>
```

Place the image on the top left:

```
<ScreenOverlay>
  <overlayXY x="0" y="1" xunits="fraction" yunits="fraction"/>
  <screenXY x="0" y="1" xunits="fraction" yunits="fraction"/>
</ScreenOverlay>
```

Placing the image at the right of the screen:

```
<ScreenOverlay>
  <overlayXY x="1" y="1" xunits="fraction" yunits="fraction"/>
  <screenXY x="1" y="1" xunits="fraction" yunits="fraction"/>
</ScreenOverlay>
```

Parents

- <ScreenOverlay>

<SimpleArrayField>

Defines an array of simple field types like ints, floats, or strings. See Schemas for more details.

Parents

- <Schema>

Children

- <name> (required)
- <type> (required)

<SimpleField>

Defines simple field types like ints, floats, or strings. See Schemas for more details.

```
<SimpleField>
   <name>height</name>
   <type>int</type>
</SimpleField>
```

Parents

- <Schema>

Children

- <name> (required)
- <type> (required)

<size>

Specifies the size of the image of the screen overlay.

Values
Use of the size tag is best illustrated by example.

To force the image to maintain its native height, width, and aspect ratio, set the values to zero:

```
<size x="0" y="0" xunits="fraction" yunits="fraction"/>
```

To force the image to retain its horizontal dimension, but to take up 20% of the vertical screen space:

```
<size x="0" y="0.2" xunits="fraction" yunits="fraction"/>
```

To force the image to resize to 100px by 500px:

```
<size x="100" y="500" xunits="pixels" yunits="pixels"/>
```

Parents

- <ScreenOverlay>

<Snippet>

Causes a short description to be displayed in the *Places* panel beneath the placemark. By default, the <description> tag is used beneath the placemark, but you can use this tag to customize a short description instead. If a placemark contains both

a description and a snippet, the snippet appears beneath the placemark in the *Places* panel, and a description appears in the description balloon.

```
<Placemark>
  <name>Google Earth - New Placemark</name>
  <description>Some Descriptive text.</description>
  <Snippet>Here is some snippet in bold</snippet>
  <LookAt id="khLookAt780">
    <longitude>-90.86879847669974</longitude>
    <latitude>48.25330383601299</latitude>
    <range>440.8</range>
    <tilt>8.3</tilt>
    <heading>2.7</heading>
  </LookAt>
  <styleUrl>#khStyle721</styleUrl>
  <Point id="khPoint781">
    <coordinates>-90.86948943473118,48.25450093195546,0</coordinates>
  </Point>
</Placemark>
```

Values
User defined text. HTML markup is not supported.

Parents

- <Placemark>

<south>

Defines the latitude of the south edge of the overlay image.

```
<LatLonBox>
   <north>48.25475939255556</north>
   <south>48.25207367852141</south>
   <east>-90.86591508839973</east>
   <west>-90.8714285289695</west>
   <rotation>39.37878630116985</rotation>
 </LatLonBox>
```

Values
Dependent on the actual position required for the overlay image. Latitude value can be specified as decimal degrees.

Parents

- <LatLonBox>

<Status>

Contains the type of request (*geocode*) and the status code. See also <code> and <Response>.

```
<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns="http://earth.google.com/kml/2.1">
  <Response>
    <name>95008</name>
    <Status>
      <code>200</code>
      <request>geocode</request>
    </Status>
    <Placemark>
      <address>Campbell, CA 95008, USA</address>
      <AddressDetails>
        <Country>
          <CountryNameCode>US</CountryNameCode>
          <AdministrativeArea>
            <AdministrativeAreaName>CA</AdministrativeAreaName>
            <Locality>
              <LocalityName>Campbell</LocalityName>
              <PostalCode>
                <PostalCodeNumber>95008</PostalCodeNumber>
              </PostalCode>
            </Locality>
          </AdministrativeArea>
        </Country>
      </AddressDetails>
      <Point>
        <coordinates>-121.955390,37.280007,0</coordinates>
      </Point>
    </Placemark>
  </Response>
</kml>
```

Children

- <code>
- <request>

Parents

- <Response>

<Style>

Indicates drawing style such as for custom icons, geometry scale and color, and label scale. Styles are referenced by ID placemarks or geometry, so you can share a style among many geometry or placemark elements. See Styles for more information.

Note: A style must have an ID in order to be referenced. Use this attribute if you wish to use the same style elsewhere. For more information, see the KML Overview.

```
<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns="http://earth.google.com/kml/2.1">
<Document>
  <!-- Begin Style Definitions -->
  <Style id="myDefaultStyles">
    <IconStyle id="khIconStyle791">
      <color>a1ff00ff</color>
      <scale>1.399999976158142</scale>
        <Icon>
          <href>http://icon.jpg</href>
        </Icon>
    </IconStyle>
    <LabelStyle id="defaultLabelStyle">
      <color>7fffaaff</color>
      <scale>1.5</scale>
    </LabelStyle>
    <LineStyle id="defaultLineStyle">
      <color>ff0000ff</color>
      <width>15</width>
    </LineStyle>
      <PolyStyle id="defaultPolyStyle">
        <color>7f7faaaa</color>
        <colorMode>random</colorMode>
      </PolyStyle>
  </Style>
  <!-- End Style Definitions -->
  <!-- Placemark #1 -->
  <Placemark>
    <name>Google Earth - New Polygon</name>
    <description>Here is some descriptive text</description>
    <styleUrl>#myDefaultStyles</styleUrl>
    . . .
  </Placemark>
  <!-- Placemark #2 -->
```

```
  <Placemark>
    <name>Google Earth - New Path</name>
    <styleUrl>#myDefaultStyles</styleUrl>
      . . . .
  </Placemark>
</Document>
</kml>
```

In KML Release 2.1, the use of a local <Style> within a <Placemark> is deprecated.

Values
Style has one attribute, ID, which can have any arbitrary value. The ID is used by elements that reference the style.

Parents

- <Document>
- <Folder>
- <Placemark>

Children

- <BalloonStyle>
- <IconStyle>
- <LabelStyle>
- <LineStyle>
- <ListStyle>
- <PolyStyle>

<StyleMap>

Use a <StyleMap> element to provide a normal and highlighted icon for a placemark, so that the highlight version appears when the user mouses over the icon in Google Earth. See Style Maps for more information and examples.

Values
The ID of the style is the attribute for this element.

Parents

- <Document>

Children

- <Pair>

<styleUrl>

References a <Style> or <StyleMap> by a URL. For referenced style elements that are local to the KML document, a simple # referencing is used; otherwise use a full URL along with # referencing when styles are contained in external files. Examples are:

```
<styleUrl>#myIconStyleID</styleUrl>
<styleUrl>http://someserver.com/somestylefile.xml#restaurant</styleUrl>
```

Values
The ID or URL of the style to be referenced.

Parents

- <Pair>
- <Placemark>

<targetHref>

Specifies the *.kml* or *.kmz* file whose data (within Google Earth) is to be modified by an <Update> element. This KML file must already have been loaded via a <NetworkLink>.

```
<NetworkLinkControl>
  <Update>
    <targetHref>Point.kml</targetHref>
    <Change>
      <Point targetId="point123">
        <coordinates>-95.48,40.43,0</coordinates>
      </Point>
    </Change>
  </Update>
</NetworkLinkControl>
```

Values
A *.kml* or *.kmz* file specification.

Parents

- <Update>

<tessellate>

Use tessellation to allow lines and paths to follow the terrain.

```
<tessellate>1</tessellate>
```

Values
If undefined, tessellation is off. Use 1 to turn on tessellation.

Parents

- <LineString>

<text>

This tag determines the text that appears inside balloons (see <BalloonStyle>). Removes "Directions: To here - From here" information.

```
<text><![CDATA[<b>Notice how this name is different</b><br /><br/>$[description]]]></text>
```

Values
Replaceable variables: $[name], $[description]

Parents

- <BalloonStyle>

Children

- <textColor>

<textColor>

This tag determines the color of text that appears inside balloons (see <BalloonStyle>).

```
<BalloonStyle id="khBalloonStyle707">
   <color>ff00</color>
   <text>All of the text is violet (this part is BalloonStyle/text/CDATA).
   &lt;br/&gt;
   $[description]</text>
   <textColor>ff00ff</textColor>
</BalloonStyle>
```

Values
The standard range from `00000000` to `ffffffff`.

Parents

- <BalloonStyle>
- <text>

<tilt>

When used in <LookAt>, this tag indicates the angle of the eyepoint to the designated point. When used in <Orientation>, this tag indicates the angle of rotation around the model's *x* axis.

```
<LookAt>
    <longitude>-90.86879895745898</longitude>
    <latitude>48.25329705085941</latitude>
    <range>738.6</range>
    <tilt>8.3</tilt>
    <heading>2.7</heading>
</LookAt>
```

Values
When <tilt> is used as a child of <LookAt>, a value of 0 indicates no tilt and the perspective in Google Earth viewer of looking straight down on the object. A value of 90 indicates full tilt and the perspective of a horizon view in Google Earth. The range of values is from 0 to 90 (representing degrees of tilt).

When <tilt> is used as a child of <Orientation>, it describes the rotation of the model around the *x* axis. The *x* axis is parallel to latitude lines. A positive rotation is clockwise around the *x* axis and specified in degrees from 0 to 360 (can be negative).

Parents

- <LookAt>
- <Orientation>

<type>

Defines the type of field declared in the schema.

```
<SimpleField>
  <name>Population<name>
  <type>int<type>
</SimpleField>
```

Values
The possible range of values for fields are:

uint

short

ushort

float

double

bool

string

wstring (This is wide string, which is UCS2 unicode)

sharedstring

sharedwstring

Vec2f (A two-dimensional vector float)

Vec3d (A three-dimensional vector double)

icon

Parents

<ObjArrayField>

<ObjField>

<SimpleArrayField>

<SimpleField>

<Update>

Specifies an addition, change, or deletion to KML data that has already been loaded using the specified URL. The <targetHref> specifies the *.kml* or *.kmz* file whose data (within Google Earth) is to be modified.

```
<NetworkLinkControl>
   <Update>
      <targetHref>Point.kml</targetHref>
      <Change>
         <Point targetId="point123">
            <coordinates>-95.48,40.43,0</coordinates>
         </Point>
      </Change>
   </Update>
</NetworkLinkControl>
```

Parents

<NetworkLinkControl>

Children
Can contain any number of <Change>, <Create>, and <Delete> tags, which will be processed in order. Can contain:

- <Change>
- <Create>
- <Delete>
- <targetHref> (required)

<Url>

NOTE: This element is deprecated in KML Release 2.1 and has been replaced by <Link>, which provides the additional functionality of Regions. The <Url> tag will still work in Release 2.1, but use of the newer <Link> tag is encouraged.

Use this element to set the location of the link to the KML file, to define the refresh options for the server and viewer changes, and to populate a variable to return useful client information to the server.

```
<Url>
    <href>http://www.example.com/geotiff/NE/MergedReflectivityQComposite.kml</href>
    <refreshMode>onInterval</refreshMode>
    <refreshInterval>30</refreshInterval>
    <viewRefreshMode>onStop</viewRefreshMode>
    <viewRefreshTime>7</viewRefreshTime>
    <viewFormat>BBOX=[bboxWest],[bboxSouth],[bboxEast],[bboxNorth],
        [lookatLon],[lookatLat],[lookatRange],[lookatTilt],[lookatHeading]</viewFormat>
</Url>
```

Parents

<NetworkLink>

Children

<href> (required)

<refreshInterval>

<refreshMode>

<viewFormat>

<viewRefreshMode>

<viewRefreshTime>

<viewBoundScale>

Used for overlays—in either network links or placemark overlays—to indicate the percentage of screen space to fill with data. If you are creating a ground overlay to deliver dynamic data via a network link, you can set the view-bound scale to 1.0 so that the dynamic date entirely fills the screen. This would be a typical setting to use when the user will not need to adjust the size of the overlay.

Values
View bound scale is set to 1.0 as default for network links and 0.75 for overlays if not specified. Otherwise, you can set the value to a fractional portion of the screen size, including values greater than 1.0.

Keep in mind that when using this tag for ground overlays where the user might want to modify the position, you should keep the value to a smaller fraction of the screen size to provide for easier editing. Otherwise, set the bound to reflect the area of

data relative to the viewing boundaries of the client screen that you want to display.

Parents

<Icon>

<viewFormat>

This element selects what information Google Earth sends to the server in a query and allows you to specify how Google Earth formats the query.

<viewFormat> is a child of the Network Link's <Link> element that allows more complete control over the view information returned to the server. Without specifying this tag, the information returned is the WMS-style east, south, west, north bounding-box coordinates, but you can now return any of these parameters in whichever order you like, and also a number of parameters in the <LookAt> element. The following example returns all possible information in a comma-delimited string:

```
<NetworkLink>
  <name>NE US Radar</name>
  <flyToView>1</flyToView>
  <Link>
    <href>http://www.example.com/geotiff/NE/MergedReflectivityQComposite.kml</href>
    <refreshMode>onInterval</refreshMode>
    <refreshInterval>30</refreshInterval>
    <viewRefreshMode>onStop</viewRefreshMode>
    <viewRefreshTime>7</viewRefreshTime>
    <viewFormat>BBOX=[bboxWest],[bboxSouth],[bboxEast],[bboxNorth],
       [lookatLon],[lookatLat],[lookatRange],[lookatTilt],[lookatHeading]</viewFormat>
  </Link>
</NetworkLink>
```

Values
A user defined variable. Available parameters are as follows:

[bboxWest]

[bboxSouth]

[bboxEast]

[bboxNorth]

[lookatLon]

[lookatLat]

[lookatRange]

[lookatTilt]

[lookatHeading]

Parents

<Link>

<viewRefreshMode>

A child of the <Link> element for network links and the <Icon> element when used for ground overlays. Indicates the type of view-based refresh to use, it specifies how the client should return the view coordinates to the server specified in the <href> tag.

```
<NetworkLink>
  <name>NE US Radar</name>
  <flyToView>1</flyToView>
  <Link>
    <href>http://www.example.com/geotiff/NE/MergedReflectivityQComposite.kml</href>
    <refreshMode>onInterval</refreshMode>
    <refreshInterval>30</refreshInterval>
    <viewRefreshMode>onStop</viewRefreshMode>
    <viewRefreshTime>7</viewRefreshTime>
    <viewFormat>BBOX=[bboxWest],[bboxSouth],[bboxEast],[bboxNorth],
      [lookatLon],[lookatLat],[lookatRange],[lookatTilt],[lookatHeading]</viewFormat>
  </Link>
</NetworkLink>
```

Values

- **never** - Default mode. If <viewRefreshMode> is undefined, data is not refreshed when the camera view changes in Google Earth.
- **onStop** - Returns the coordinates n seconds after movement in the viewing window has stopped, where *n* is defined in <viewRefreshTime>
- **onRequest** - Returns the coordinates only when the user chooses to refresh the overlay or network link.
- **onRegion** - Returns the coordinates only when the region is active.

Parents

<Icon>

<Link>

<viewRefreshTime>

A simple tag and a child of the <Link> element for network links and the <Icon> element when used for ground overlays. Specifies the frequency with which to return the view coordinates to the server.

```
<NetworkLink>
  <name>NE US Radar</name>
  <flyToView>1</flyToView>
  <Link>
    <href>http://www.example.com/geotiff/NE/MergedReflectivityQComposite.kml</href>
    <refreshMode>onInterval</refreshMode>
    <refreshInterval>30</refreshInterval>
    <viewRefreshMode>onStop</viewRefreshMode>
    <viewRefreshTime>7</viewRefreshTime>
    <viewFormat>BBOX=[bboxWest],[bboxSouth],[bboxEast],[bboxNorth],
       [lookatLon],[lookatLat],[lookatRange],[lookatTilt],[lookatHeading]</viewFormat>
  </Link>
</NetworkLink>
```

Values
An integer representing seconds.

Parents

<Icon>

<Link>

<visibility>

Defines the default visibility of a folder, a placemark, or an overlay. If visibility is set to off, the element is loaded into Google Earth but does not appear in the 3D viewer until the user turns it on. The default (undefined) visibility state is on.

```
<Placemark>
   <name>My House</name>
   <visibility>0</visibility>
   . . . .
```

```
</Placemark>
```

Note: This tag does not affect the visibility of folders (see <Folder>).

Values
0 sets default visibility off

1 sets default visibility on

Parents

<Folder>

<Document>

<GroundOverlay>

<Placemark>

<ScreenOverlay>

<w>

This tag is deprecated in KML 2.1.

<west>

This tag defines the longitude of the west edge of the overlay image.

```
<LatLonBox>
  <north>48.25475939255556</north>
  <south>48.25207367852141</south>
  <east>-90.86591508839973</east>
  <west>-90.8714285289695</west>
  <rotation>39.3</rotation>
 </LatLonBox>
```

Values
Dependent on the actual position required for the overlay image. Longitude value can be specified as decimal degrees.

Parents

<LatLonBox>

<width>

Indicates the width of lines in paths or polygons in pixels. The following example shows a <LineStyle> with a width of 4 pixels.

```
<LineStyle id="khLineStyle989">
  <color>7f0000ff</color>
  <width>4</width>
</LineStyle>
```

Values
Single integers indicating the width of the line in pixels. Fractional values are supported as well as values greater than the recommended range of 0 - 4 pixels. Although Google Earth will accept line widths larger than 4 pixels, you should not exceed this recommended range because some computers cannot draw lines that wide.

Parents

<LineStyle>

<x>

A distance along the *x* (horizontal) axis, or a scale factor for the *x* dimension of a piece of geometry (see parent tag).

Values
An integer representing the distance along the horizontal (x) axis, or a floating point value representing a scale factor (in <scale> and <Scale>).

Parents

- <overlayXY>
- <scale>
- <Scale>
- <screenXY>

<y>

A distance along the Y (vertical) axis, or a scale factor for the *y* dimension of a piece of geometry (see parent tag).

Values
An integer representing the distance along the vertical (y) axis, or a floating point value representing a scale factor (in <scale> and <Scale>).

Parents

- <overlayXY>
- <scale>
- <Scale>
- <screenXY>

<z>

A scale factor for the *z* dimension of a piece of geometry (see parent tag).

```
<Scale>
   <x>.33</x>
   <y>.33</y>
   <z>.66</z>
</Scale>
```

Values
A floating point value representing a scale factor in the z dimension.

Parents

<Scale>

Summary of Changes to Beta Document:
6/23/06:fixed example for <Link> element; added information and new example to <AddressDetails> element; revised examples for <Status> and <Response>.

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