| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/Reference.html) | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [**PREV CLASS**](http://docs.google.com/javax/xml/crypto/dsig/Manifest.html)   [**NEXT CLASS**](http://docs.google.com/javax/xml/crypto/dsig/SignatureMethod.html) | [**FRAMES**](http://docs.google.com/index.html?javax/xml/crypto/dsig/Reference.html)    [**NO FRAMES**](http://docs.google.com/Reference.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | FIELD | CONSTR | [METHOD](#3znysh7) | DETAIL: FIELD | CONSTR | [METHOD](#3dy6vkm) |

## **javax.xml.crypto.dsig**

Interface Reference

**All Superinterfaces:** [URIReference](http://docs.google.com/javax/xml/crypto/URIReference.html), [XMLStructure](http://docs.google.com/javax/xml/crypto/XMLStructure.html)

public interface **Reference**extends [URIReference](http://docs.google.com/javax/xml/crypto/URIReference.html), [XMLStructure](http://docs.google.com/javax/xml/crypto/XMLStructure.html)

A representation of the Reference element as defined in the  [W3C Recommendation for XML-Signature Syntax and Processing](http://www.w3.org/TR/xmldsig-core/). The XML schema is defined as:

<element name="Reference" type="ds:ReferenceType"/>  
 <complexType name="ReferenceType">  
 <sequence>  
 <element ref="ds:Transforms" minOccurs="0"/>  
 <element ref="ds:DigestMethod"/>  
 <element ref="ds:DigestValue"/>  
 </sequence>  
 <attribute name="Id" type="ID" use="optional"/>  
 <attribute name="URI" type="anyURI" use="optional"/>  
 <attribute name="Type" type="anyURI" use="optional"/>  
 </complexType>  
  
 <element name="DigestValue" type="ds:DigestValueType"/>  
 <simpleType name="DigestValueType">  
 <restriction base="base64Binary"/>  
 </simpleType>

A Reference instance may be created by invoking one of the [newReference](http://docs.google.com/javax/xml/crypto/dsig/XMLSignatureFactory.html#newReference(java.lang.String,%20javax.xml.crypto.dsig.DigestMethod)) methods of the [XMLSignatureFactory](http://docs.google.com/javax/xml/crypto/dsig/XMLSignatureFactory.html) class; for example:

XMLSignatureFactory factory = XMLSignatureFactory.getInstance("DOM");  
 Reference ref = factory.newReference  
 ("http://www.ietf.org/rfc/rfc3275.txt",   
 factory.newDigestMethod(DigestMethod.SHA1, null));

**Since:** 1.6 **See Also:**[XMLSignatureFactory.newReference(String, DigestMethod)](http://docs.google.com/javax/xml/crypto/dsig/XMLSignatureFactory.html#newReference(java.lang.String,%20javax.xml.crypto.dsig.DigestMethod)), [XMLSignatureFactory.newReference(String, DigestMethod, List, String, String)](http://docs.google.com/javax/xml/crypto/dsig/XMLSignatureFactory.html#newReference(java.lang.String,%20javax.xml.crypto.dsig.DigestMethod,%20java.util.List,%20java.lang.String,%20java.lang.String))

| **Method Summary** | |
| --- | --- |
| byte[] | [**getCalculatedDigestValue**](http://docs.google.com/javax/xml/crypto/dsig/Reference.html#getCalculatedDigestValue())()            Returns the calculated digest value of this Reference after a validation operation. |
| [Data](http://docs.google.com/javax/xml/crypto/Data.html) | [**getDereferencedData**](http://docs.google.com/javax/xml/crypto/dsig/Reference.html#getDereferencedData())()            Returns the dereferenced data, if [reference caching](http://docs.google.com/XMLSignContext.html#Supported%20Properties) is enabled. |
| [InputStream](http://docs.google.com/java/io/InputStream.html) | [**getDigestInputStream**](http://docs.google.com/javax/xml/crypto/dsig/Reference.html#getDigestInputStream())()            Returns the pre-digested input stream, if [reference caching](http://docs.google.com/XMLSignContext.html#Supported%20Properties) is enabled. |
| [DigestMethod](http://docs.google.com/javax/xml/crypto/dsig/DigestMethod.html) | [**getDigestMethod**](http://docs.google.com/javax/xml/crypto/dsig/Reference.html#getDigestMethod())()            Returns the digest method of this Reference. |
| byte[] | [**getDigestValue**](http://docs.google.com/javax/xml/crypto/dsig/Reference.html#getDigestValue())()            Returns the digest value of this Reference. |
| [String](http://docs.google.com/java/lang/String.html) | [**getId**](http://docs.google.com/javax/xml/crypto/dsig/Reference.html#getId())()            Returns the optional Id attribute of this Reference, which permits this reference to be referenced from elsewhere. |
| [List](http://docs.google.com/java/util/List.html) | [**getTransforms**](http://docs.google.com/javax/xml/crypto/dsig/Reference.html#getTransforms())()            Returns an [unmodifiable list](http://docs.google.com/java/util/Collections.html#unmodifiableList(java.util.List)) of [Transform](http://docs.google.com/javax/xml/crypto/dsig/Transform.html)s that are contained in this Reference. |
| boolean | [**validate**](http://docs.google.com/javax/xml/crypto/dsig/Reference.html#validate(javax.xml.crypto.dsig.XMLValidateContext))([XMLValidateContext](http://docs.google.com/javax/xml/crypto/dsig/XMLValidateContext.html) validateContext)            Validates this reference. |

| **Methods inherited from interface javax.xml.crypto.**[**URIReference**](http://docs.google.com/javax/xml/crypto/URIReference.html) |
| --- |
| [getType](http://docs.google.com/javax/xml/crypto/URIReference.html#getType()), [getURI](http://docs.google.com/javax/xml/crypto/URIReference.html#getURI()) |

| **Methods inherited from interface javax.xml.crypto.**[**XMLStructure**](http://docs.google.com/javax/xml/crypto/XMLStructure.html) |
| --- |
| [isFeatureSupported](http://docs.google.com/javax/xml/crypto/XMLStructure.html#isFeatureSupported(java.lang.String)) |

| **Method Detail** |
| --- |

### getTransforms

[List](http://docs.google.com/java/util/List.html) **getTransforms**()

Returns an [unmodifiable list](http://docs.google.com/java/util/Collections.html#unmodifiableList(java.util.List)) of [Transform](http://docs.google.com/javax/xml/crypto/dsig/Transform.html)s that are contained in this Reference.

**Returns:**an unmodifiable list of Transforms (may be empty but never null)

### getDigestMethod

[DigestMethod](http://docs.google.com/javax/xml/crypto/dsig/DigestMethod.html) **getDigestMethod**()

Returns the digest method of this Reference.

**Returns:**the digest method

### getId

[String](http://docs.google.com/java/lang/String.html) **getId**()

Returns the optional Id attribute of this Reference, which permits this reference to be referenced from elsewhere.

**Returns:**the Id attribute (may be null if not specified)

### getDigestValue

byte[] **getDigestValue**()

Returns the digest value of this Reference.

**Returns:**the raw digest value, or null if this reference has not been digested yet. Each invocation of this method returns a new clone to protect against subsequent modification.

### getCalculatedDigestValue

byte[] **getCalculatedDigestValue**()

Returns the calculated digest value of this Reference after a validation operation. This method is useful for debugging if the reference fails to validate.

**Returns:**the calculated digest value, or null if this reference has not been validated yet. Each invocation of this method returns a new clone to protect against subsequent modification.

### validate

boolean **validate**([XMLValidateContext](http://docs.google.com/javax/xml/crypto/dsig/XMLValidateContext.html) validateContext)  
 throws [XMLSignatureException](http://docs.google.com/javax/xml/crypto/dsig/XMLSignatureException.html)

Validates this reference. This method verifies the digest of this reference.

This method only validates the reference the first time it is invoked. On subsequent invocations, it returns a cached result.

**Parameters:**validateContext - the validating context **Returns:**true if this reference was validated successfully; false otherwise **Throws:** [NullPointerException](http://docs.google.com/java/lang/NullPointerException.html) - if validateContext is null [XMLSignatureException](http://docs.google.com/javax/xml/crypto/dsig/XMLSignatureException.html) - if an unexpected exception occurs while validating the reference

### getDereferencedData

[Data](http://docs.google.com/javax/xml/crypto/Data.html) **getDereferencedData**()

Returns the dereferenced data, if [reference caching](http://docs.google.com/XMLSignContext.html#Supported%20Properties) is enabled. This is the result of dereferencing the URI of this reference during a validation or generation operation.

**Returns:**the dereferenced data, or null if reference caching is not enabled or this reference has not been generated or validated

### getDigestInputStream

[InputStream](http://docs.google.com/java/io/InputStream.html) **getDigestInputStream**()

Returns the pre-digested input stream, if [reference caching](http://docs.google.com/XMLSignContext.html#Supported%20Properties) is enabled. This is the input to the digest operation during a validation or signing operation.

**Returns:**an input stream containing the pre-digested input, or null if reference caching is not enabled or this reference has not been generated or validated

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/Reference.html) | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [**PREV CLASS**](http://docs.google.com/javax/xml/crypto/dsig/Manifest.html)   [**NEXT CLASS**](http://docs.google.com/javax/xml/crypto/dsig/SignatureMethod.html) | [**FRAMES**](http://docs.google.com/index.html?javax/xml/crypto/dsig/Reference.html)    [**NO FRAMES**](http://docs.google.com/Reference.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | FIELD | CONSTR | [METHOD](#3znysh7) | DETAIL: FIELD | CONSTR | [METHOD](#3dy6vkm) |

[Submit a bug or feature](http://bugs.sun.com/services/bugreport/index.jsp)

For further API reference and developer documentation, see [Java SE Developer Documentation](http://docs.google.com/webnotes/devdocs-vs-specs.html). That documentation contains more detailed, developer-targeted descriptions, with conceptual overviews, definitions of terms, workarounds, and working code examples.

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