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## Revision Summary

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<thead>
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<th>Date</th>
<th>Revision History</th>
<th>Revision Class</th>
<th>Comments</th>
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<tr>
<td>3/17/2010</td>
<td>0.1</td>
<td>New</td>
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<tr>
<td>3/26/2010</td>
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<td>Major</td>
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<td>No changes to the meaning, language, or formatting of the technical content.</td>
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1 Introduction

This document describes the level of support provided by Microsoft web browsers for the Document Object Model (DOM) Level 3 Core Specification Version 1.0 [DOM Level 3 - Core], published 7 April 2004.

The [DOM Level 3 - Core] specification may contain guidance for authors of webpages and browser users, in addition to user agents (browser applications). Statements found in this document apply only to normative requirements in the specification targeted to user agents, not those targeted to authors.

1.1 Glossary

MAY, SHOULD, MUST, SHOULD NOT, MUST NOT: These terms (in all caps) are used as defined in [RFC2119]. All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

1.2 References

Links to a document in the Microsoft Open Specifications library point to the correct section in the most recently published version of the referenced document. However, because individual documents in the library are not updated at the same time, the section numbers in the documents may not match. You can confirm the correct section numbering by checking the Errata.

1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact dochelp@microsoft.com. We will assist you in finding the relevant information.


1.2.2 Informative References

None.

1.3 Microsoft Implementations

The following Microsoft web browser versions implement some portion of [DOM Level 3 - Core]:

- Windows Internet Explorer 7
- Windows Internet Explorer 8
- Windows Internet Explorer 9
Each browser version may implement multiple document rendering modes. The modes vary from one another in support of the standard. The following table lists the document modes supported by each browser version.

<table>
<thead>
<tr>
<th>Browser Version</th>
<th>Document Modes Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Explorer 7</td>
<td>Quirks Mode</td>
</tr>
<tr>
<td></td>
<td>Standards Mode</td>
</tr>
<tr>
<td>Internet Explorer 8</td>
<td>Quirks Mode</td>
</tr>
<tr>
<td></td>
<td>IE7 Mode</td>
</tr>
<tr>
<td></td>
<td>IE8 Mode</td>
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<td>Internet Explorer 9</td>
<td>Quirks Mode</td>
</tr>
<tr>
<td></td>
<td>IE7 Mode</td>
</tr>
<tr>
<td></td>
<td>IE8 Mode</td>
</tr>
<tr>
<td></td>
<td>IE9 Mode</td>
</tr>
<tr>
<td>Internet Explorer 10</td>
<td>Quirks Mode</td>
</tr>
<tr>
<td></td>
<td>IE7 Mode</td>
</tr>
<tr>
<td></td>
<td>IE8 Mode</td>
</tr>
<tr>
<td></td>
<td>IE9 Mode</td>
</tr>
<tr>
<td></td>
<td>IE10 Mode</td>
</tr>
<tr>
<td>Internet Explorer 11</td>
<td>Quirks Mode</td>
</tr>
<tr>
<td></td>
<td>IE7 Mode</td>
</tr>
<tr>
<td></td>
<td>IE8 Mode</td>
</tr>
<tr>
<td></td>
<td>IE9 Mode</td>
</tr>
<tr>
<td></td>
<td>IE10 Mode</td>
</tr>
<tr>
<td>Internet Explorer 11 for Windows 10</td>
<td>Quirks Mode</td>
</tr>
<tr>
<td></td>
<td>IE7 Mode</td>
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<tr>
<td></td>
<td>IE8 Mode</td>
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<td></td>
<td>IE9 Mode</td>
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<tr>
<td></td>
<td>IE10 Mode</td>
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<tr>
<td></td>
<td>IE11 Mode</td>
</tr>
<tr>
<td>Microsoft Edge</td>
<td>EdgeHTML Mode</td>
</tr>
</tbody>
</table>

For each variation presented in this document there is a list of the document modes and browser versions that exhibit the behavior described by the variation. All combinations of modes and versions that are not listed conform to the specification. For example, the following list for a variation indicates that the variation exists in three document modes in all browser versions that support these modes:

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*
Note: "Standards Mode" in Internet Explorer 7 and "IE7 Mode" in Internet Explorer 8 refer to the same document mode. "IE7 Mode" is the preferred way of referring to this document mode across all versions of the browser.

1.4 Standards Support Requirements

To conform to [DOM Level 3 - Core] a user agent must implement all required portions of the specification. Any optional portions that have been implemented must also be implemented as described by the specification. Normative language is usually used to define both required and optional portions. (For more information, see [RFC2119].)

The following table lists the sections of [DOM Level 3 - Core] and whether they are considered normative or informative.

<table>
<thead>
<tr>
<th>Sections</th>
<th>Normative/Informative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Normative</td>
</tr>
<tr>
<td>Appendix A-F</td>
<td>Informative</td>
</tr>
</tbody>
</table>

1.5 Notation

The following notations are used in this document to differentiate between notes of clarification, variation from the specification, and extension points.

<table>
<thead>
<tr>
<th>Notation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>C####</td>
<td>Identifies a clarification of ambiguity in the target specification. This includes imprecise statements, omitted information, discrepancies, and errata. This does not include data formatting clarifications.</td>
</tr>
<tr>
<td>V####</td>
<td>Identifies an intended point of variability in the target specification such as the use of MAY, SHOULD, or RECOMMENDED. (See [RFC2119].) This does not include extensibility points.</td>
</tr>
<tr>
<td>E####</td>
<td>Identifies extensibility points (such as optional implementation-specific data) in the target specification, which can impair interoperability.</td>
</tr>
</tbody>
</table>

For document mode and browser version notation, see section 1.3.
2 Standards Support Statements

This section contains all variations and clarifications for the Microsoft implementation of [DOM Level 3 - Core].

- Section 2.1 describes normative variations from the MUST requirements of the specification.
- Section 2.2 describes clarifications of the MAY and SHOULD requirements.
- Section 2.3 considers error handling aspects of the implementation.
- Section 2.4 considers security aspects of the implementation.

2.1 Normative Variations

The following subsections describe normative variations from the MUST requirements of [DOM Level 3 - Core].

2.1.1 [DOM Level 3 - Core] Section 1.3.1, String Comparisons in the DOM

V0001:

The specification states:

The character normalization, i.e. transforming into their fully normalized form as defined in [XML 1.1], is assumed to happen at serialization time. The DOM Level 3 Load and Save module [DOM Level 3 - LS] provides a serialization mechanism (see the DOMSerializer interface, section 2.3.1) and uses the DOMConfiguration parameters "normalize-characters" and "check-character-normalization" to assure that text is fully normalized [XML 1.1]. Other serialization mechanisms built on top of the DOM Level 3 Core also have to assure that text is fully normalized.

Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)

The DOM Level 3 Load and Save module [DOM Level 3 - LS] is not supported; therefore, this type of character normalization is not supported.

2.1.2 [DOM Level 3 - Core] Section 1.3.3, XML Namespaces

V0002:

The specification states:

As far as the DOM is concerned, special attributes used for declaring XML namespaces are still exposed and can be manipulated just like any other attribute. However, nodes are permanently bound to namespace URIs as they get created. Consequently, moving a node within a document, using the DOM, in no case results in a change of its namespace prefix or namespace URI. Similarly, creating a node with a namespace prefix and namespace URI, or changing the namespace prefix of a node, does not result in any addition, removal, or modification of any special attributes for declaring the appropriate XML namespaces. Namespace validation is not enforced; the DOM application is responsible. In particular, since the mapping between prefixes and namespace URIs is not enforced, in general, the resulting document cannot be serialized naively. For example, applications may have to declare every namespace in use when serializing a document.

Quirks Mode, IE7 Mode, IE8 Mode, and IE9 Mode (All Versions)
Special attributes for declaring namespaces that begin with "xmlns:" on the root <html> element are not supported. These attributes do not affect the namespace URI of created elements.

### 2.1.3 [DOM Level 3 - Core] Section 1.4, Fundamental Interfaces: Core Module

#### V0003:

The specification defines the DOMException.

**Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)**

The DOMException exception is not supported. JavaScript error objects are created when exceptions occur.

#### V0004:

The specification defines the ExceptionCode exception of the DOMException.

**Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)**

The ExceptionCode exception is not supported.

#### V0005:

The specification defines the DOMStringList interface.

**Quirks Mode, IE7 Mode, IE8 Mode, and IE9 Mode (All Versions)**

The DOMStringList interface is not supported.

#### V0006:

The specification defines the NameList interface.

**All Document Modes (All Versions)**

The NameList interface is not supported.

#### V0007:

The specification defines the DOMImplementationList interface.

**All Document Modes (All Versions)**

The DOMImplementationList interface is not supported.

#### V0008:

The specification defines the DOMImplementationSource interface.

**All Document Modes (All Versions)**

The DOMImplementationSource interface is not supported.

#### V0009:

The specification states:

```
interface DOMImplementation

The DOMImplementation interface provides a number of methods for performing
```
operations that are independent of any particular instance of the document object model.

**Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)**

The following methods of the `DOMImplementation` interface are not supported and return a DOMException of `NOT_SUPPORTED_ERR`:

- `createDocumentType`
- `createDocument`

**All Document Modes (All Versions)**

The `getFeature` method of the `DOMImplementation` interface is not supported and returns a DOMException of `NOT_SUPPORTED_ERR`.

**V0057:**

The specification defines the `getFeature` method of the `Document` object.

**All Document Modes (All Versions)**

The `getFeature` method of the `DOMImplementation` interface is not supported and returns a DOMException of `NOT_SUPPORTED_ERR`.

**V0010:**

The specification states:

**Interface DocumentFragment**

`DocumentFragment` is a "lightweight" or "minimal" `Document` object. It is very common to want to be able to extract a portion of a document's tree or to create a new fragment of a document.

Furthermore, various operations -- such as inserting nodes as children of another `Node` -- may take `DocumentFragment` objects as arguments; this results in all the child nodes of the `DocumentFragment` being moved to the child list of this node. The children of a `DocumentFragment` node are zero or more nodes representing the tops of any sub-trees defining the structure of the document. `DocumentFragment` nodes do not need to be well-formed XML documents (although they do need to follow the rules imposed upon well-formed XML parsed entities, which can have multiple top nodes).

When a `DocumentFragment` is inserted into a `Document` (or indeed any other `Node` that may take children) the children of the `DocumentFragment` and not the `DocumentFragment` itself are inserted into the `Node`. This makes the `DocumentFragment` very useful when the user wishes to create nodes that are siblings; the `DocumentFragment` acts as the parent of these nodes so that the user can use the standard methods from the `Node` interface, such as `Node.insertBefore` and `Node.appendChild`.

**Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)**

The `DocumentFragment` interface inherits from the `Document` interface and has all of the methods and properties it defines.

**V0011:**

The specification defines the `Document` interface.
The following attributes of the **Document** interface are not supported:

- `inputEncoding`
- `xmlEncoding`
- `xmlStandalone`
- `xmlVersion`

The following methods of the **Document** interface are not supported:

- `adoptNode`
- `createAttributeNS`
- `createCDATASection`
- `createElementNS`
- `createProcessingInstruction`
- `getElementsByTagNameNS`
- `importNode`

*All Document Modes (All Versions)*

The following attributes of the **Document** interface are not supported:

- `documentURI`
- `domConfig`
- `strictErrorChecking`

The following methods of the **Document** interface are not supported:

- `createEntityReference`
- `normalizeDocument`
- `renameNode`

V0012:

The specification states:

```
Interface DOMImplementation
The DOMImplementation interface provides a number of methods for performing
operations that are independent of any particular instance of the document object
model.
```

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **doctype** attribute of the **Document** interface is always NULL because the **DocumentType** interface is not supported.

V0013:

The specification defines the **DocumentURI** interface.
All Document Modes (All Versions)

The **DocumentURI** interface is not supported.

V0014:

The specification states:

```javascript
getElementById introduced in DOM Level 2

>Returns the Element that has an ID attribute with the given value. If no such
>element exists, this returns null. If more than one element has an ID attribute
>with that value, what is returned is undefined. The DOM implementation is expected
>to use the attribute Attr.isId to determine if an attribute is of type ID.
>Note: Attributes with the name "ID" or "id" are not of type ID unless so defined.

Parameters

elementId of type DOMString
>The unique id value for an element.

Return Value

>Element The matching element or null if there is none.

No Exceptions
```

Quirks Mode and IE7 Mode (All Versions)

The **getElementById** method of the **Document** interface performs a case-insensitive compare
against the IDs of elements and searches "name" attributes in addition to "id" attributes.

V0072:

The specification states:

```javascript
createAttribute

>Creates an Attr of the given name. Note that the Attr instance can then be set on an Element
>using the setAttributeNode method.

To create an attribute with a qualified name and namespace URI, use the createAttributeNS
method.

Parameters

>name of type DOMString
>The name of the attribute.

Return Value

>Attr A new Attr object with the nodeName attribute set to name, and localName, prefix, and
>namespaceURI set to null. The value of the attribute is the empty string.

Exceptions

DOMException INVALID_CHARACTER_ERR: Raised if the specified name is not an XML name
according to the XML version in use specified in the Document.xmlVersion attribute.
```

Quirks Mode, IE7 Mode, and IE8 Mode (Internet Explorer 7, Internet Explorer 8)

The created Attr instance has a **nodeValue** value of "undefined" instead of an empty string.

V0015:

The specification states:
createDocumentFragment
Creates an empty DocumentFragment object.

Return Value
DocumentFragment  A new DocumentFragment

No Parameters
No Exceptions

**Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)**

A full document-derived object is returned when the `createDocumentFragment` method is called. The `createDocumentFragment` method returns a node-derived interface and inherits all the methods of the Document interface in addition to those on the `Node` interface. The `nodeType` and `nodeValue` attributes are correct on the returned object.

**V0016:**

The specification states:

createElement

Creates an element of the type specified. Note that the instance returned implements the Element interface, so attributes can be specified directly on the returned object. In addition, if there are known attributes with default values, Attr nodes representing them are automatically created and attached to the element. To create an element with a qualified name and namespace URI, use the createElementNS method.

Parameters
tagName of type DOMString
The name of the element type to instantiate. For XML, this is case-sensitive, otherwise it depends on the case-sensitivity of the markup language in use. In that case, the name is mapped to the canonical form of that markup by the DOM implementation.

Return Value
Element
A new Element object with the `nodeName` attribute set to `tagName`, and `localName`, `prefix`, and `namespaceURI` set to null.

Exceptions
DOMException
INVALID_CHARACTER_ERR: Raised if the specified name is not an XML name according to the XML version in use specified in the Document.xmlVersion attribute.

**Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)**

The `createElement` method is overloaded with one that takes no parameters. When no parameters are given, this method returns an element with a `tagName` of null.

The `createElement` method accepts full element declaration strings that contain otherwise invalid characters for the `tagName` parameter. A parameter string such as `<div id='div1'>` would return a `div` element with an `id` of `div1`. An INVALID_CHARACTER_ERR exception is not raised in this case.

**Quirks Mode, IE7 Mode, IE8 Mode, and IE9 Mode (All Versions)**

When an element that contains an XMLNS declaration, such as `<html xmlns="http://www.contoso.com">`, is specified for the `tagName` parameter, the value of the `tagUrn` property for the new element is set to the specified URI.
V0017:

The specification defines the **Node** interface.

**Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)**

The following definition groups of the **Node** interface are not supported:

- DocumentPosition
- NodeType

With **NodeType** definition group values, the actual document types in markup are created as instances of the **Comment** interface, causing the values of the instance to match those of the **Comment** entry.

The following attributes of the **Node** interface are not supported:

- baseURI
- localName
- namespaceURI
- prefix
- textContent

The following methods of the **Node** interface are not supported:

- compareDocumentPosition
- getFeature
- getUserData
- isDefaultNamespace
- isEqualNode
- isSameNode
- isSupported
- lookupNamespaceURI
- lookupPrefix
- setUserData

**Quirks Mode, IE7 Mode, IE8 Mode, IE9 Mode, IE10 Mode, and IE11 Mode (All Versions)**

The **baseURI** attribute of the **Node** interface is not supported.

**All Document Modes (All Versions)**

The following methods of the **Node** interface are not supported:

- getFeature
- getUserData
- setUserData
V0018:
The specification states:

- **childNodes** of type NodeList, readonly
  A NodeList that contains all children of this node. If there are no children, this is a NodeList containing no nodes.

**Internet Explorer 8 (All Modes)**

Splitting multiple text nodes under an element using the `splitText` method can cause the `childNodes` collection to not be immediately updated. Other tree modifications cause the `childNodes` collection to resynchronize.

V0019:
The specification states:

- **nodeName** of type DOMString, readonly
  The name of this node, depending on its type; see the table above.

**Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)**

The `nodeName` attribute of the `Node` interface returns uppercase values except for elements with names that resemble namespaces (such as `<test:elementName>`) when a proprietary namespace has been declared. In this case, the `nodeName` attribute drops the element prefixes and does not return uppercase values.

V0020:
The specification states:

- **parentNode** of type Node, readonly
  The parent of this node. All nodes, except Attr, Document, DocumentFragment, Entity, and Notation may have a parent. However, if a node has just been created and not yet added to the tree, or if it has been removed from the tree, this is null.

**Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)**

With the `parentNode` attribute of the `Node` interface, when a parentless element has child nodes, a document fragment is created and set as the parent of that element.

V0021:
The specification states:

- **appendChild** modified in DOM Level 3
  Adds the node `newChild` to the end of the list of children of this node. If the `newChild` is already in the tree, it is first removed.
Parameters

newChild of type Node The node to add. If it is a DocumentFragment object, the entire contents of the document fragment are moved into the child list of this node.

Return Value

Node The node added.

Exceptions

DOMException

HIERARCHY_REQUEST_ERR: Raised if this node is of a type that does not allow children of the type of the newChild node, or if the node to append is one of this node's ancestors or this node itself, or if this node is of type Document and the DOM application attempts to append a second DocumentType or Element node.

WRONG_DOCUMENT_ERR: Raised if newChild was created from a different document than the one that created this node.

NO_MODIFICATION_ALLOWED_ERR: Raised if this node is readonly or if the previous parent of the node being inserted is readonly.

NOT_SUPPORTED_ERR: if the newChild node is a child of the Document node, this exception might be raised if the DOM implementation doesn't support the removal of the DocumentType child or Element child.

Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)

With the appendChild method of the Node interface, the conditions that trigger the HIERARCHY_REQUEST_ERR and WRONG_DOCUMENT_ERR errors both result in a JScript "Invalid argument" error (HRESULT 0x80070057).

The following elements trigger an exception when trying to dynamically insert or append new nodes:

- APPLET
- AREA
- BASE
- BGSOUND
- BR
- COL
- COMMENT
- EMBED
- FRAME
- HR
- IFRAME
- IMG
- INPUT
- ISINDEX
IE9 Mode, IE10 Mode, and IE11 Mode (All Versions)

With the `appendChild` method of the `Node` interface, the conditions that trigger the `WRONG_DOCUMENT_ERR` error cause the node to automatically be adopted and inserted. No exception is thrown.

V0022:

The specification states:

Method

`cloneNode` Returns a duplicate of this node, i.e., serves as a generic copy constructor for nodes.

Cloning an `Attr` directly, as opposed to be cloned as part of an `Element` cloning operation, returns a specified attribute (specified is true). Cloning an `Attr` always clones its children, since they represent its value, no matter whether this is a deep clone or not. In addition, clones of unspecified `Attr` nodes are specified. And, cloning `Document`, `DocumentType`, `Entity`, and `Notation` nodes is implementation dependent.

Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)

With the `cloneNode` method of the `Node` interface, cloned `Attr` objects do not have the specified attribute set to `true`. Cloned `Attr` objects have their `nodeValue` attributes set to `undefined`.

V0023:

The specification states:

Methods

`insertBefore` modified in DOM Level 3
Inserts the node `newChild` before the existing child node `refChild`. If `refChild` is null, insert `newChild` at the end of the list of children.

If `newChild` is a `DocumentFragment` object, all of its children are inserted, in the same order, before `refChild`. If the `newChild` is already in the tree, it is first removed.
Note: Inserting a node before itself is implementation dependent.

Parameters

newChild of type Node
The node to insert.

refChild of type Node
The reference node, i.e., the node before which the new node must be inserted.

Return Value

Node
The node being inserted.

Exceptions

DOMException

HIERARCHY_REQUEST_ERR: Raised if this node is of a type that does not allow children of the type of the newChild node, or if the node to insert is one of this node's ancestors or this node itself, or if this node is of type Document and the DOM application attempts to insert a second DocumentType or Element node.

WRONG_DOCUMENT_ERR: Raised if newChild was created from a different document than the one that created this node.

NO_MODIFICATION_ALLOWED_ERR: Raised if this node is readonly or if the parent of the node being inserted is readonly.

NOT_FOUND_ERR: Raised if refChild is not a child of this node.

NOT_SUPPORTED_ERR: if this node is of type Document, this exception might be raised if the DOM implementation doesn't support the insertion of a DocumentType or Element node.

Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)

With the insertBefore method of the Node interface, the conditions to trigger the HIERARCHY_REQUEST_ERR and WRONG_DOCUMENT_ERR errors both result in an "Invalid argument" error (HRESULT 0x80070057).

The following elements cause an exception when trying to dynamically insert or append new nodes:

- APPLET
- AREA
- BASE
- BGSOUND
- BR
- COL
- COMMENT
- EMBED
- FRAME
- HR
IE9 Mode, IE10 Mode, and IE11 Mode (All Versions)

With the `insertBefore` method of the `Node` interface, the conditions that trigger the `WRONG_DOCUMENT_ERR` error cause the node to automatically be adopted and inserted. No exception is thrown.

V0024:

The specification states:

- normalize modified in DOM Level 3
- Puts all Text nodes in the full depth of the sub-tree underneath this Node, including attribute nodes, into a "normal" form where only structure (e.g., elements, comments, processing instructions, CDATA sections, and entity references) separates Text nodes, i.e., there are neither adjacent Text nodes nor empty Text nodes. This can be used to ensure that the DOM view of a document is the same as if it were saved and re-loaded, and is useful when operations (such as XPointer [XPointer] lookups) that depend on a particular document tree structure are to be used. If the parameter "normalize-characters" of the DOMConfiguration object attached to the Node.ownerDocument is true, this method will also fully normalize the characters of the Text nodes. Note: In cases where the document contains CDATASections, the normalize operation alone may not be sufficient, since XPointers do not differentiate between Text nodes and CDATASection nodes.
- No Parameters
- No Return Value
- No Exceptions

Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)

The `normalize` method of the `Node` interface does not collapse an empty text node into an adjacent text node. An empty text node is not removed if it is the only child of its parent.

V0025:
The specification states:

Method
removeChild modified in DOM Level 3
Removes the child node indicated by oldChild from the list of children, and returns it.

Parameters
oldChild of type Node The node being removed.

Return Value
Node The node removed.

Exceptions
DOMException
NO_MODIFICATION_ALLOWED_ERR: Raised if this node is readonly.
NOT_FOUND_ERR: Raised if oldChild is not a child of this node.
NOT_SUPPORTED_ERR: if this node is of type Document, this exception might be raised if the DOM implementation doesn't support the removal of the DocumentType child or the Element child.

Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)

With the removeChild method of the Node interface, the conditions that trigger the NOT_FOUND_ERR error result in a JavaScript "Invalid argument" error (HRESULT 0x80070057).

V0026:

The specification states:

Method
replaceChild modified in DOM Level 3
Replaces the child node oldChild with newChild in the list of children, and returns the oldChild node. If newChild is a DocumentFragment object, oldChild is replaced by all of the DocumentFragment children, which are inserted in the same order. If the newChild is already in the tree, it is first removed. Note: Replacing a node with itself is implementation dependent.

Parameters
newChild of type Node The new node to put in the child list.
oldChild of type Node The node being replaced in the list.

Return Value
Node The node replaced.

Exceptions
DOMException
HIERARCHY_REQUEST_ERR: Raised if this node is of a type that does not allow children of the type of the newChild node, or if the node to put in is one of this node's ancestors or this node itself, or if this node is of type Document and the result of the replacement operation would add a second DocumentType or Element on the Document node.
WRONG_DOCUMENT_ERR: Raised if newChild was created from a different document than the one that created this node.
NO_MODIFICATION_ALLOWED_ERR: Raised if this node or the parent of the new node is readonly.
NOT_FOUND_ERR: Raised if oldChild is not a child of this node.
NOT_SUPPORTED_ERR: if this node is of type Document, this exception might be raised if the DOM implementation doesn't support the replacement of the DocumentType child or Element child.

Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)

With the replaceChild method of the Node interface, the conditions that trigger the HIERARCHY_REQUEST_ERR, WRONG_DOCUMENT_ERR, and NOT_FOUND_ERR errors result in JavaScript "Invalid argument" errors (HRESULT 0x80070057).

V0027:
The specification defines the **NamedNodeMap** interface.

**Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)**

The following methods are not supported by the **NamedNodeMap** interface:

- `getNamedItemNS`
- `removeNamedItemNS`
- `setNamedItemNS`

V0028:

The specification states:

```
Method
  item Returns the indexth item in the map. If index is greater than or equal to the
         number of nodes in this map, this returns null.

Parameters
  index of type unsigned longIndex into this map.

Return Value
  Node The node at the indexth position in the map, or null if that is not a valid
         index.

No Exceptions
```

**Quirks Mode and IE7 Mode (All Versions)**

With the `item` method of the **NamedNodeMap** interface, NULL is not returned when the index is greater than the number of nodes in the map, but instead results in an HRESULT 0x80070057, which creates a JavaScript Error message "Invalid argument."

V0029:

The specification states:

```
Method
  removeNamedItem Removes a node specified by name. When this map contains the
                    attributes attached to an element, if the removed attribute is known to have a
                    default value, an attribute immediately appears containing the default value as
                    well as the corresponding namespace URI, local name, and prefix when applicable.

Parameters
  name of type DOMStringThe nodeName of the node to remove.

Return Value
  Node The node removed from this map if a node with such a name exists.

Exceptions
  DOMException  NOT_FOUND_ERR: Raised if there is no node named name in this map.
                  NO_MODIFICATION_ALLOWED_ERR: Raised if this map is readonly.
```

**Quirks Mode and IE7 Mode (All Versions)**

With the `removeNamedItem` method of the **NamedNodeMap** interface, NULL is returned instead of the NOT_FOUND_ERR exception.

V0030:
The specification states:

**Method**

setNamedItem Adds a node using its nodeName attribute. If a node with that name is already present in this map, it is replaced by the new one. Replacing a node by itself has no effect. As the nodeName attribute is used to derive the name which the node must be stored under, multiple nodes of certain types (those that have a "special" string value) cannot be stored as the names would clash. This is seen as preferable to allowing nodes to be aliased.

Parameters

arg of type Node A node to store in this map. The node will later be accessible using the value of its nodeName attribute.

Return Value

Node If the new Node replaces an existing node the replaced Node is returned, otherwise null is returned.

Exceptions

DOMException
WRONG_DOCUMENT_ERR: Raised if arg was created from a different document than the one that created this map.
NO_MODIFICATION_ALLOWED_ERR: Raised if this map is readonly.
INUSE_ATTRIBUTE_ERR: Raised if arg is an Attr that is already an attribute of another Element object. The DOM user must explicitly clone Attr nodes to re-use them in other elements.
HIERARCHY_REQUEST_ERR: Raised if an attempt is made to add a node doesn't belong in this NamedNodeMap. Examples would include trying to insert something other than an Attr node into an Element's map of attributes, or a non-Entity node into the DocumentType's map of Entities.

**Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)**

With the setNamedItem method of the NamedNodeMap interface, an "Invalid Argument" exception is raised instead of INUSE_ATTRIBUTE_ERR. No exception is raised when the argument was created from a different document or when it is not an attribute.

V0031:

The specification states:

**Method**

substringData Extracts a range of data from the node.

Parameters

offset of type unsigned long Start offset of substring to extract.

count of type unsigned long The number of 16-bit units to extract.

Return Value DOMString The specified substring. If the sum of offset and count exceeds the length, then all 16-bit units to the end of the data are returned.

Exceptions

DOMException
INDEX_SIZE_ERR: Raised if the specified offset is negative or greater than the number of 16-bit units in data, or if the specified count is negative.
DOMSTRING_SIZE_ERR: Raised if the specified range of text does not fit into a DOMString.

**Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)**

With the substringData method of the CharacterData interface, an exception is not thrown if the offset is greater than the number of 16-bit units in the data. An "Invalid argument" error is returned instead of a DOMException.
V0032:

The specification states:

```
IDL Definition
interface Attr : Node {
    readonly attribute DOMString       name;
    readonly attribute boolean         specified;
    attribute DOMString       value;
        // raises(DOMException) on setting
    // Introduced in DOM Level 2:
    readonly attribute Element         ownerElement;
    // Introduced in DOM Level 3:
    readonly attribute TypeInfo        schemaTypeInfo;
    // Introduced in DOM Level 3:
    readonly attribute boolean         isId;
};
```

All Document Modes (All Versions)
The following attributes of the Attr interface are not supported:
- `schemaTypeInfo`
- `isId`

V0033:

The specification defines the Element interface.

Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)
The following methods of the Element interface are not supported:
- `getAttributeNodeNS`
- `getAttributeNS`
- `hasAttributeNS`
- `removeAttributeNS`
- `setAttributeNodesNS`
- `setAttributeNS`
- `setIdAttribute`
- `setIdAttributeNode`
- `setIdAttributeNS`

Attribute subtrees of the Attr interface are not supported. Only strings are supported for the Attr object.

IE9 Mode, IE10 Mode, IE11 Mode, and EdgeHTML Mode (All Versions)

For any given attribute, only a single, immutable text node is supported as the subtree.

V0034:
The specification states:

tagName of type DOMString, readonly
The name of the element. If Node.localName is different from null, this attribute is a qualified name. For example, in:
<elementExample id="demo">
...</elementExample>

tagName has the value "elementExample". Note that this is case-preserving in XML, as are all of the operations of the DOM. The HTML DOM returns the tagName of an HTML element in the canonical uppercase form, regardless of the case in the source HTML document.

Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)

The tagName attribute of the Element interface returns uppercase values except for elements with names that resemble namespaces (such as <test:elementName>) when a proprietary namespace has been declared because XML support is provided through MSXML. In this case, the tagName attribute drops the element prefixes and does not return uppercase values.

V0035:

The specification states:

Method
getElementsByTagName  Returns a NodeList of all descendant Elements with a given tag name, in document order.

Parameters
name of type DOMString The name of the tag to match on. The special value "*" matches all tags.

Return Value
NodeList  A list of matching Element nodes.

No Exceptions

Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)

With the getElementsByTagName method of the Document interface, if object1.getElementsByTagName("*") is called, an empty collection is returned. If object1.getElementsByTagName("param") is called, a collection containing all parameters in the document is returned, as if the call were document.getElementsByTagName("param").

V0036:

The specification states:

Method
removeAttribute  Removes an attribute by name. If a default value for the removed attribute is defined in the DTD, a new attribute immediately appears with the default value as well as the corresponding namespace URI, local name, and prefix when applicable. The implementation may handle default values from other schemas similarly but applications should use Document.normalizeDocument() to guarantee this information is up-to-date. If no attribute with this name is found, this method has no effect. To remove an attribute by local name and namespace URI, use the removeAttributeNS method.

Parameters
name of type DOMString  The name of the attribute to remove.
Exceptions
DOMException NO_MODIFICATION_ALLOWED_ERR: Raised if this node is readonly.

No Return Value

Quirks Mode and IE7 Mode (All Versions)

The removeAttribute method supports an additional parameter called iCaseSensitive. The iCaseSensitive parameter specifies whether to use a case-sensitive search to find the attribute. Removal of event handler attributes (such as onClick) or the style attribute does not cause the actual event handler to be removed, or the inline style to be removed.

Default attributes are not re-created after the attribute is removed.

Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)

The removeAttributeNS method is not supported.

Quirks Mode, IE7 Mode, IE8 Mode, IE9 Mode, IE10 Mode, and IE11 Mode (All Versions)

The removeAttribute method of the Element interface exists on CSSStyleDeclaration objects that are used for inline styles, runtime styles, and style rules.

The removeAttribute method returns a Boolean value that indicates whether the operation has succeeded or failed. The removeAttribute method is also available on the following objects: element.currentStyle, element.runtimeStyle, element.style, and stylesheet.style.

V0037:

The specification states:

Method
removeAttributeNode Removes the specified attribute node. If a default value for the removed Attr node is defined in the DTD, a new node immediately appears with the default value as well as the corresponding namespace URI, local name, and prefix when applicable. The implementation may handle default values from other schemas similarly but applications should use Document.normalizeDocument() to guarantee this information is up-to-date.

Parameters
oldAttr of type Attr The Attr node to remove from the attribute list.

Return Value
Attr The Attr node that was removed.

Exceptions
DOMException NO_MODIFICATION_ALLOWED_ERR: Raised if this node is readonly.
NOT_FOUND_ERR: Raised if oldAttr is not an attribute of the element.

Quirks Mode and IE7 Mode (All Versions)

With the removeAttributeNode method of the Element interface, default attributes are not re-created after the attribute is removed. Removal of event handler attributes (such as onClick) or the style attribute does not cause the actual event handler to be removed, or the inline style to be removed.

V0038:

The specification states:
**Method**

`setAttribute` Adds a new attribute. If an attribute with that name is already present in the element, its value is changed to be that of the value parameter. This value is a simple string; it is not parsed as it is being set. So any markup (such as syntax to be recognized as an entity reference) is treated as literal text, and needs to be appropriately escaped by the implementation when it is written out. In order to assign an attribute value that contains entity references, the user must create an Attr node plus any Text and EntityReference nodes, build the appropriate subtree, and use `setAttributeNode` to assign it as the value of an attribute. To set an attribute with a qualified name and namespace URI, use the `setAttributeNS` method.

**Parameters**

- `name` of type `DOMString` The name of the attribute to create or alter.
- `value` of type `DOMStringValue` to set in string form.

**Exceptions**

- `DOMException INVALID_CHARACTER_ERR`: Raised if the specified name is not an XML name according to the XML version in use specified in the `Document.xmlVersion` attribute.
- `NO_MODIFICATION_ALLOWED_ERR`: Raised if this node is readonly.

**No Return Value**

**Quirks Mode and IE7 Mode (All Versions)**

The `setAttribute` method assigns attributes in a case-sensitive manner (expected case-insensitive for HTML).

The second parameter of the `setAttribute` method accepts only strings, not objects. An optional third parameter controls case sensitivity.

Attributes that apply a boolean initial state to the associated DOM properties (for example, `value` and `checked`) are incorrectly associated with their live property rather than their default property. For example, the `setAttribute` method (`'checked', 'checked'`) toggles the DOM `checked` property (the live view of a check box) rather than the `defaultChecked` property (initial value).

The HTML `style` attribute and attributes that are event handlers do not apply their conditions when used with `setAttribute`.

The `setAttribute` method requires DOM property names to apply effects for certain attribute names, such as `className` (instead of 'class'), `htmlFor` (instead of 'for'), and `httpEquiv` (instead of 'http-equiv').

V0039:

The specification defines the `Text` interface.

**Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)**

The following attribute and method of the `Text` interface are not supported:

- `wholeText` attribute
- `replaceWholeText` method

**All Document Modes (All Versions)**

The `isElementContentWhitespace` attribute of the `Text` interface is not supported.

V0040:

The specification states:
splitText
Breaks this node into two nodes at the specified offset, keeping both in the tree as siblings. After being split, this node will contain all the content up to the offset point. A new node of the same type, which contains all the content at and after the offset point, is returned. If the original node had a parent node, the new node is inserted as the next sibling of the original node. When the offset is equal to the length of this node, the new node has no data.

Parameters
offset of type unsigned long
The 16-bit unit offset at which to split, starting from 0.

Return Value
Text
The new node, of the same type as this node.

Exceptions
DOMException
INDEX_SIZE_ERR: Raised if the specified offset is negative or greater than the number of 16-bit units in data.
NO_MODIFICATION_ALLOWED_ERR: Raised if this node is readonly.

Quirks Mode, IE7 Mode, and IE8 Mode (Internet Explorer 8)
With the splitText method of the Text interface, any time there is a modification to the markup, a cache of invalidated childNodes objects is maintained. Because calling the splitText method does not trigger a markup modification, the childNodes collection does not show changes made by splitText until the markup is modified (for example, by changing the text of a DIV element anywhere on the page).

Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)
The splitText method treats the argument as optional; if there is no unsigned long offset provided, then an offset of zero (0) will be used.

V0041:
The specification states:

Interface Comment
This interface inherits from CharacterData and represents the content of a comment, i.e., all the characters between the starting '<!--' and ending '-->'. Note that this is the definition of a comment in XML, and, in practice, HTML, although some HTML tools may implement the full SGML comment structure

Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)
With the Comment interface, comments are derived from ELEMENT rather than from Node.

V0042:
The specification defines the TypeInfo interface.

All Document Modes (All Versions)
The TypeInfo interface is not supported.

V0043:
The specification defines the UserDataHandler interface

All Document Modes (All Versions)
The **UserDataHandler** interface is not supported.

V0044:

The specification defines the **DOMError** interface.

*IE7 Mode, IE8 Mode, IE9 Mode, and IE10 Mode (All Versions)*

The **DOMError** interface is not supported.

V0045:

The specification defines the **DOMErrorHandler** interface.

*All Document Modes (All Versions)*

The **DOMErrorHandler** interface is not supported.

V0046:

The specification defines the **DOMNode** interface.

*All Document Modes (All Versions)*

The **DOMNode** interface is not supported.

V0047:

The specification defines the **DOMConfiguration** interface.

*All Document Modes (All Versions)*

The **DOMConfiguration** interface is not supported.

2.1.4  **[DOM Level 3 - Core] Section 1.5, Extended Interfaces: XML Module**

V0048:

The specification states:

> In order to fully support this module, an implementation must also support the "Core" feature defined in Fundamental Interfaces: Core Module and the feature "XMLVersion" with version "1.0" defined inDocument.xmlVersion.

*All Document Modes (All Versions)*

The **XML Module** extended interface is not supported because Core Module methods such as **getUserData** are not implemented. Additionally, if the **hasFeature** method is run with **XMLVersion** equal to "1.0", a value of **false** is returned.

2.2  **Clarifications**

The following subsections describe clarifications of the MAY and SHOULD requirements of **[DOM Level 3 - Core]**.

2.2.1  **[DOM Level 3 - Core] Section 1.4, Fundamental Interfaces: Core Module**

C0001:
The specification states:

Method

`hasFeature` Test if the DOM implementation implements a specific feature and version, as specified in DOM

Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)

The `hasFeature` method of the `DOMImplementation` interface returns `false` for the Core module and the version strings "1.0", "2.0", and "3.0".

IE9 Mode, IE10 Mode, IE11 Mode, and EdgeHTML Mode (All Versions)

The `hasFeature` method of the `DOMImplementation` interface returns `false` for the Core module and the version string "3.0" because not all DOM L3 Core methods are supported.

C0002:

The specification states:

`createTextNode`  
Creates a Text node given the specified string.  
Parameters  
data of type DOMString  
The data for the node.  

Return Value  
Text  
The new Text object.

Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)

The `data` parameter of the `createTextNode` method of the `Document` interface is optional. A text node is created even when no parameter is provided.

C0003:

The specification states:

`createComment`  
Creates a Comment node given the specified string.

Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)

With the `createComment` method of the `Document` interface, the `data` parameter is treated as optional and creates a Comment node even when no parameter is provided.

C0004:

The specification states:

`getAttribute` Retrieves an attribute value by name.  
Parameters  
name of type DOMString  
The name of the attribute to retrieve.  

Return Value DOMString  
The Attr value as a string, or the empty string if that attribute does not have a specified or default value.  
No Exceptions

Quirks Mode and IE7 Mode (All Versions)
The `getAttribute` method of the `Element` interface supports an additional parameter that controls case-sensitivity and object extrapolation (such as for the `style` object).

C0005:

The specification states:

Method
`getAttributeNode` Retrieves an attribute node by name. To retrieve an attribute node by qualified name and namespace URI, use the `getAttributeNodeNS` method.

Parameters
name of type DOMString The name (nodeName) of the attribute to retrieve.

Return Value
Attr The Attr node with the specified name (nodeName) or null if there is no such attribute.

No Exceptions

Quirks Mode and IE7 Mode (All Versions)

The `getAttributeNode` method of the `Element` interface returns attribute nodes that have not been specified by the author or have default values other than `NULL`

2.3 Error Handling

There are no additional error handling considerations.

2.4 Security

There are no additional security considerations.
3 Change Tracking

No table of changes is available. The document is either new or has had no changes since its last release.
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