

# OpcStateMachineNode Class

**Namespace:** Opc.UaFx

**Assemblies:** Opc.UaFx.Advanced.dll

Defines the base class for all state machine nodes. It uses a single variable which represents the current state of the machine.

**C#**

```
public class OpcStateMachineNode : OpcObjectNode, IOpcNode, IOpcNodeInfo
```

**Inheritance** [Object](#) > [OpcNode](#) > [OpcInstanceNode](#) > [OpcObjectNode](#) > [OpcStateMachineNode](#)

**Derived**

- [OpcFiniteStateMachineNode](#)

**Implements** [IOpcNode](#), [IOpcNodeInfo](#)

## Remarks

An instance of this object should generate an event whenever a significant state change occurs. The server decides which state changes are significant. Servers should use the [GeneratesEvent](#) reference type to indicate which event(s) could be produced by the state machine.

Subtypes may add methods which affect the state of the machine. The [Executable](#) attribute is used to indicate whether the method is valid given the current state of the machine. A state machine may not be active. In this case, the [CurrentState](#) and [LastTransition](#) vvariables should have a status equal to [BadStateNotActive](#).

Subtypes may add components which are instances of state machines. These components are considered to be sub-states of the state machine. Sub state machines are only active when the parent machine is in an appropriate state.

Events produced by sub state machines may be suppressed by the parent machine. In some cases, the parent machine will produce a single event that reflects changes in multiple sub state machines.

## Constructors

Name	Description
<a href="#">OpcStateMachineNode</a> ( <a href="#">IOpcNode</a> , <a href="#">OpcName</a> )	Initializes a new instance of the <a href="#">OpcStateMachineNode</a> class accessible by the <a href="#">name</a> specified as a child node of the <a href="#">parent</a> node given.
<a href="#">OpcStateMachineNode</a> ( <a href="#">IOpcNode</a> , <a href="#">OpcName</a> , <a href="#">OpcNodeId</a> )	Initializes a new instance of the <a href="#">OpcStateMachineNode</a> class accessible by the <a href="#">name</a> and <a href="#">id</a> specified as a child node of the <a href="#">parent</a> node given.

Name	Description
<code>OpcStateMachineNode(OpcName)</code>	Initializes a new instance of the <code>OpcStateMachineNode</code> class accessible by the <code>name</code> specified.
<code>OpcStateMachineNode(OpcName, OpcNodeId)</code>	Initializes a new instance of the <code>OpcStateMachineNode</code> class accessible by the <code>name</code> and <code>id</code> specified.

## Events

Name	Description
<code>AfterApplyChanges</code>	Occurs after one or more changes on the node has been notified. (Inherited from <code>OpcNode</code> )
<code>BeforeApplyChanges</code>	Occurs before one or more changes on the node are notified. (Inherited from <code>OpcNode</code> )

## Properties

Name	Description
<code>Category</code>	Gets the <code>NodeCategoryOpcAttribute</code> which identifies the kind of node and is therefore used to classify the node regarding its use and purpose. (Inherited from <code>OpcNode</code> )
<code>CurrentState</code>	Gets or sets the current state of the <code>OpcStateMachineNode</code> and provides a human readable name for the current state which may not be suitable for use in application control logic. Applications should use the <code>VariableId</code> property of the <code>CurrentStateNode</code> if they need a unique identifier for the state.
<code>CurrentStateNode</code>	Gets the <code>OpcStateVariableNode</code> of the <code>CurrentState</code> property.
<code>DefaultReferenceTypeId</code>	Gets the default identifier which identifies the type that defines the underlying node reference within this <code>OpcInstanceNode</code> is referenced by its parent node. (Inherited from <code>OpcInstanceNode</code> )
<code>DefaultReferenceTypeId</code>	Gets the default identifier which identifies the type that defines the underlying node reference within this <code>OpcInstanceNode</code> is referenced by its parent node. (Inherited from <code>OpcObjectNode</code> )
<code>DefaultTypeDefinitionId</code>	Gets the default identifier which identifies the node that defines the underlying node type from that this <code>OpcInstanceNode</code> has been created.
<code>DefaultTypeDefinitionId</code>	Gets the default identifier which identifies the node that defines the underlying node type from that this <code>OpcInstanceNode</code> has been created. (Inherited from <code>OpcInstanceNode</code> )
<code>DefaultTypeDefinitionId</code>	Gets the default identifier which identifies the node that defines the underlying node type from that this <code>OpcInstanceNode</code> has been created. (Inherited from <code>OpcObjectNode</code> )
<code>Description</code>	Gets or sets the value of the optional <code>DescriptionOpcAttribute</code> which shall explain the meaning of the node. (Inherited from <code>OpcNode</code> )
<code>Descriptions</code>	Gets the <code>OpcNodeGlobalization</code> instance used to control the localization and other globalization related tasks for the <code>Description</code> attribute of the current node. (Inherited from <code>OpcNode</code> )
<code>DisplayName</code>	Gets or sets the value of the <code>DisplayNameOpcAttribute</code> which defines the localizable name of the node. (Inherited from <code>OpcNode</code> )

Name	Description
DisplayNames	Gets the <a href="#">OpcNodeGlobalization</a> instance used to control the localization and other globalization related tasks for the <a href="#">DisplayName</a> attribute of the current node. (Inherited from <a href="#">OpcNode</a> )
HasPendingChanges	Gets a value indicating whether there exists any pending change on the node. (Inherited from <a href="#">OpcNode</a> )
Id	Gets the value of the <a href="#">NodeIdOpcAttribute</a> which unambiguously identifies the node. (Inherited from <a href="#">OpcNode</a> )
LastTransition	Gets or sets the last transition which occurred in an instance and provides a human readable name for the last transition which may not be suitable for use in application control logic. Applications should use the <a href="#">VariableId</a> property of the <a href="#">LastTransitionNode</a> if they need a unique identifier for the transition.
LastTransitionNode	Gets the <a href="#">OpcTransitionVariableNode</a> of the <a href="#">LastTransition</a> property.
ModellingRuleId	Gets or sets the identifier which defines how the <a href="#">OpcInstanceNode</a> is used for instantiation. (Inherited from <a href="#">OpcInstanceNode</a> )
Name	Gets or sets the value of the <a href="#">BrowseNameOpcAttribute</a> which defines the non-localizable human-readable name used when browsing the address space. (Inherited from <a href="#">OpcNode</a> )
Namespace	(Inherited from <a href="#">OpcNode</a> )
Parent	Gets the parent node of the node. (Inherited from <a href="#">OpcNode</a> )
Parent	Gets the parent node of the node. (Inherited from <a href="#">OpcInstanceNode</a> )
PendingChanges	Gets a value indicating the most recent changes performed on the node since their last notification. (Inherited from <a href="#">OpcNode</a> )
QueryEventsCallback	Gets or sets a callback used to query any event information which belongs to the node. (Inherited from <a href="#">OpcNode</a> )
ReadDescriptionCallback	(Inherited from <a href="#">OpcNode</a> )
ReadDisplayNameCallback	(Inherited from <a href="#">OpcNode</a> )
ReadUserWriteAccessCallback	(Inherited from <a href="#">OpcNode</a> )
ReadWriteAccessCallback	(Inherited from <a href="#">OpcNode</a> )
ReferenceType	Gets a value which defines a pre-defined used <a href="#">ReferenceTypeId</a> as one of the members defined by the <a href="#">OpcReferenceType</a> enumeration to simplify querying standard reference types. (Inherited from <a href="#">OpcInstanceNode</a> )
ReferenceTypeId	Gets or sets the identifier which identifies the node that defines the semantic of the reference between a source and a target node and generally reflects an operation between the two, such as "A contains B". (Inherited from <a href="#">OpcInstanceNode</a> )
SymbolicName	(Inherited from <a href="#">OpcNode</a> )
Tag	Gets or sets the object that contains additional user data about the node. (Inherited from <a href="#">OpcNode</a> )
TypeDefinitionId	Gets or sets the identifier which identifies the node that defines the underlying node type from that this <a href="#">OpcInstanceNode</a> has been created. (Inherited from <a href="#">OpcInstanceNode</a> )

Name	Description
UserWriteAccess	Gets or sets the value of the optional <a href="#">UserWriteAccessOpcAttribute</a> which exposes the possibilities of a client to write the attributes of the node taking user access rights into account. (Inherited from <a href="#">OpcNode</a> )
WriteAccess	Gets or sets the value of the optional <a href="#">WriteAccessOpcAttribute</a> which exposes the possibilities of a client to write the attributes of the node. (Inherited from <a href="#">OpcNode</a> )
WriteDescriptionCallback	(Inherited from <a href="#">OpcNode</a> )
WriteDisplayNameCallback	(Inherited from <a href="#">OpcNode</a> )
WriteUserWriteAccessCallback	(Inherited from <a href="#">OpcNode</a> )
WriteWriteAccessCallback	(Inherited from <a href="#">OpcNode</a> )

## Methods

Name	Description
AddChild( <a href="#">OpcContext</a> , <a href="#">OpcInstanceNode</a> )	(Inherited from <a href="#">OpcInstanceNode</a> )
AddNotifier( <a href="#">OpcContext</a> , <a href="#">IOpcNode</a> )	(Inherited from <a href="#">OpcNode</a> )
AddNotifier( <a href="#">OpcContext</a> , <a href="#">IOpcNode</a> )	(Inherited from <a href="#">OpcObjectNode</a> )
ApplyChanges( <a href="#">OpcContext</a> )	Notifies about changes performed on the node since the last notification and resets the pending changes to <a href="#">None</a> . (Inherited from <a href="#">OpcNode</a> )
ApplyChanges( <a href="#">OpcContext</a> , <a href="#">Boolean</a> )	Notifies about changes performed on the node (and optionally on its children) since the last notification and resets the pending changes to <a href="#">None</a> . (Inherited from <a href="#">OpcNode</a> )
AttributeValue( <a href="#">OpcAttribute</a> )	Retrieves the value of the <a href="#">attribute</a> specified. (Inherited from <a href="#">OpcNode</a> )
AttributeValue`1( <a href="#">OpcAttribute</a> )	Retrieves the value of the <a href="#">attribute</a> specified. (Inherited from <a href="#">OpcNode</a> )
Child( <a href="#">OpcContext</a> , <a href="#">OpcName</a> )	Retrieves the child node its <a href="#">Name</a> property matches exactly the <a href="#">name</a> specified. (Inherited from <a href="#">OpcNode</a> )
Children( <a href="#">OpcContext</a> )	Retrieves a sequence of all nodes organized as children of this node. (Inherited from <a href="#">OpcNode</a> )
InitializeDefaults	Initializes the default values used by the node implementation represented / required. (Inherited from <a href="#">OpcNode</a> )
InitializeDefaults	Initializes the default values used by the <a href="#">OpcInstanceNode</a> . (Inherited from <a href="#">OpcInstanceNode</a> )
IsChangePending( <a href="#">OpcNodeChanges</a> )	(Inherited from <a href="#">OpcNode</a> )

Name	Description
OnAfterApplyChanges(OpcNodeChangesEventArgs)	Raises the <a href="#">AfterApplyChanges</a> event using the event data specified. (Inherited from <a href="#">OpcNode</a> )
OnBeforeApplyChanges(OpcNodeChangesEventArgs)	Raises the <a href="#">BeforeApplyChanges</a> event using the event data specified. (Inherited from <a href="#">OpcNode</a> )
QueryEventsCore(OpcNodeContext, OpcEventCollection)	(Inherited from <a href="#">OpcNode</a> )
ReadAttributeValueCore`1(OpcReadAttributeValueContext, OpcAttributeValue)	(Inherited from <a href="#">OpcNode</a> )
RemoveChild(OpcContext, OpcInstanceNode)	(Inherited from <a href="#">OpcInstanceNode</a> )
RemoveNotifier(OpcContext, IOpcNode)	(Inherited from <a href="#">OpcNode</a> )
RemoveNotifier(OpcContext, IOpcNode)	(Inherited from <a href="#">OpcInstanceNode</a> )
RemoveNotifier(OpcContext, IOpcNode)	(Inherited from <a href="#">OpcObjectNode</a> )
ReportEvent(OpcContext, OpcEvent)	(Inherited from <a href="#">OpcNode</a> )
UpdateChanges(OpcContext, OpcNodeChanges)	Notifies about the <a href="#">changes</a> on behalf of the node and removes pending changes which intersect with the <a href="#">changes</a> specified. (Inherited from <a href="#">OpcNode</a> )
UpdateChanges(OpcContext, OpcNodeChanges, Boolean)	Notifies about the <a href="#">changes</a> on behalf of the node (and optionally on its children) and removes pending changes which intersect with the <a href="#">changes</a> specified. (Inherited from <a href="#">OpcNode</a> )
WriteAttributeValueCore`1(OpcWriteAttributeValueContext, OpcAttributeValue)	(Inherited from <a href="#">OpcNode</a> )



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