# SOURCE

# Tutorial

# Domain Diagram Type

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Tutorial	Actifsource Tutorial – Domain Diagram Type					
Required Time	30 Minutes					
Prerequisites	<ul> <li>Actifsource Tutorial – Installing Actifsource</li> <li>Actifsource Tutorial – Simple Service</li> <li>Actifsource Tutorial – Statemachine</li> </ul>					
Goal	Create a user defined diagram type to display and edit domain specific diagrams					
Topics covered	<ul> <li>Create a user defined diagram type to display and edit domain specific diagrams</li> <li>Create a domain diagram based on the diagram type to edit the underlying root resource</li> <li>Define a highlight path from node to node over any edge</li> <li>Define a tooltip for elements on the domain diagram</li> </ul>					
Notation	🏷 To do					
	Information					
	Bold: Terms from actifsource or other technologies and tools					
	Bold underlined: actifsource Resources					
	<u>Underlined</u> : User Resources					
	• <u>Underlineditalics</u> : Resource Functions					
	Monospaced: User input					
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Compatibility	Created with actifsource Version 5.9.0					

### Overview

- Create a user defined diagram type to display and edit domain specific diagrams
- Create a domain diagram based on the diagram type to edit the underlying root resource
- Define a highlight path from node to node over any edge
- Define a tooltip for elements on the domain diagram

# Part I:

### Preparation



- 🤄 Prepare a new actifsource Project as seen in the Actifsource Tutorial Statemachine
- 🄄 Create a generic Domain Model as shown above
- State.transition → Decorating Relation with Decorator State.-state.event
- ♥ Transition.targetState → Use Relation with RangeRestriction Transistion.-transition.-state.state

# Part II: Create a Diagram Type

• Create a user defined diagram type to display and edit domain specific diagrams

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① Create a new **<u>DiagramType</u>** named <u>Statemachine</u> in the **Package** generic

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₽ <sup>0</sup> i c	om.actifsource.dia	gramtype.generic.Statemachine:DiagramType	
	typeOf	ch.actifsource.ui.diagram.diagramtype.DiagramType	
	name	Statemachine	
	rootClass	com.actifsource.diagramtype.generic.Statemachine	
	allowedClass		

• The **Root Class** defines the **Resource** which contains the elements that shall be managed on your domain diagram

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✤ Select <u>Statemachine</u> as **Root Class** 



- The Allowed Class defines all the Resources which shall be managed on your domain diagram
- Select State as Allowed Class since we want to design a state machine

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typeOf name rootClass	ch.actifsource.ui.diagram.diagramtype.DiagramType Statemachine	
allowedClass	typeOf ch.actifsource.ui.diagram.diagramtype.AllowedClass class com.actifsource.diagramtype.generic.State	
	paletteEntry typeOf ShowPaletteEntry	
	style allowedRelation highlightPath	
	tooltip	

- Allowed Classes might be created using the domain diagram editor via a Palette Tool
  - o HidePaletteEntry: No Palette Entry to create this Allowed Class
  - o ShowPaletteEntry: Palette Entry named as the Allowed Class
  - o ShowRenamedPaletteEntry: Palette Entry named as defined
- Select the **<u>PaletteEntry</u>** ShowPaletteEntry or <u>ShowRenamedPaletteEntry</u>

typeOf name rootClass allowedClass	ch.actifsource.ui.di Statemachine com.actifsource.dia typeOf class	agram.diagramtype.D gramtype.generic.Stat ch.actifsource.ui.a com.actifsource.di	liagramType emachine diagram.diagramtype.AllowedClass iagramtype.generic.State
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	allowedRelation	typeOf selector createAllowed inverse style visible openEditor	ch.actifsource.ui.diagram.diagramtype.AllowedIndirectRelation State.transition.targetState true false
	highlightPath tooltip		

- Allowed Relations are relations that shall be displayed on the domain diagram
  - o AllowedDependencyRelation: Dotted Line that shows dependencies between components
  - o AllowedDirectRelation: Direct relation between resources A and B
  - $\circ$  AllowedIndirectRelation: Indirect relation between resources A and B via X
- We like to see a transition from state to state just as a simple arrow
- Note that the resource Transition is displayed as an arrow
- Befine the Selector State.transition.targetState for the Indirect Relation
- Define <u>openEditor</u> as false if you do not want to open the **Resource Editor** automatically after creating the transition via domain diagram editor.

• Create a domain diagram based on the diagram type to edit the underlying root resource

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	e.					

(i) Create a new <u>Statemachine</u> named <u>Statemachine1</u> in the **Package** *specific* 

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	typeOf	com.actifsource.diagramtype.generic.Statemachine		
	name	Statemachine1		
8	event			-
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- ① We could now define Event, State and Transition using the Resource Editor
- ① Let's now try the Domain Diagram Editor

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- Create a new Domain Diagram named <u>Statemachine1</u> for the <u>Statemachine Statemachine1</u> in the Package specific
- ① Use the context menu directly on the <u>Statemachine Statemachine1</u>

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) New Domain		
Domain Diagr Create a new d	' <b>am</b> omain diagram.	
<u>R</u> esource Path:	/com.actifsource.domaindiagramtype/asrc	Browse
<u>N</u> ame:	Statemachine1	
<u>D</u> iagramType:	com.actifsource.diagramtype.generic.Statemachine	Browse
SingleRoot:	com.actirsource.diagramtype.specific.Statemachine1	Browse
?	<u> </u>	Cancel

- ① The domain diagram shall be named Statemachine1
- (i) **<u>DiagramType</u>** is detected automatically based on the **Root Resource**
- () Single Root is filled in automatically based on the context of new Domain Diagram

🛃 Statemachine1	🚰 Statemachine1: Statemachine1 🛛	3	
	<b>Open</b>		Palette     ▷       Select     □
ening []			
	Close		

- (i) Create new <u>States</u> named <u>Open</u>, <u>Close</u>, <u>Opening</u> and <u>Closing</u> using the **State Tool** from the **Palette**
- ① Note that the palette entry is influenced by *DiagramType.allowedClass.paletteEntry*

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	typeOf	com.actifsource.diagramtype.generic.Statemachine	
	name	Statemachine1	
8	event		-
E	state[1]	Open : State	
E	state[2]	Close : State	
E	state[3]	Opening : State	
E	state[4]	Closing : State	

① Note that the dependent <u>Statemachine Statemachine1</u> is modified accordingly



③ Start adding <u>Transitions</u> using the **Relation Tool** from the **Palette** 

New Resource	e Wizard	
Actifsource Re & Enter a valid	resource name for event or press Ctrl+Space to create!	
Resource Path:	/com.actifsource.domaindiagramtype/asrc	Browse
Namespace:	com.actifsource.diagramtype.specific.Statemachine1.Open	Browse
OwnRelation:	com.actifsource.diagramtype.generic.State.transition	Browse
Туре:	com.actifsource.diagramtype.generic.Transition	Browse
Event:	Command_Close	Browse
Modifiers:	Abstract File new com.actifsource.diagramtype.gener	ic Event
SuperClass:	ch.actifsource.core.NamedResource	Browse
?	Finish	Cancel

- (i) Note that <u>Transitions</u> are based on <u>Events</u> by using the **Decorating Relation**
- ① Therefore you are asked for an Event when creating a new Transition
- ♥ Create a new Event called Command Close using Content Assist (or choose an existing Event)

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	Comi	mand_Close	
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name	Statemachine1		
	Command_Close : Event		
state[1]	typeOf	com.actifsource.diagra	mtype.generic.State
	name	Open	
	transition[Command_Close]	Command_Close : Tra	nsition
-1-1-101	Class - State		
state[2]			
	Opening : State		
state[3]			

- ① The Event Command\_Close has been created
- ① The Transition based on the Event Command\_Close with targetState Closing has been created



Add some more Transitions based on the new Events Command\_Open, Sensor\_Closed, Sensor\_Opened



- Solution was a command open the existing Events Command Close and Command Open
- ① Use **Context Assist** to choose the existing <u>Events</u>

# Part IV: Define a Highlight Path

① Define a highlight path from node to node over any edge

### Defining a Highlight Path

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	allowedClass	typeOf	ch.actifsource.ui.diagram.diagramtype.AllowedClass
		class	com.actifsource.diagramtype.generic.State
		paletteEntry	State : ShowPaletteEntry
		style	
		allowedRelation	: AllowedIndirectRelation
		highlightPath	typeOf ch.actifsource.ui.diagram.diagramtype.HighlightPath
			path State.transition.targetState
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			lineColor Blue
		tooltin	
		roomp	

- ① Let's see where transitions are leading to from source to target state
- ♥ Define a **HighlightPath** for the **Allowed Class** <u>State</u> as shown in the example above

### Defining a Highlight Path



Boover your cursor on any <u>State</u> to activate the **HighlightPath** from <u>State</u> via <u>Transition</u> to TargetState

# Part V: Define a Tooltip

① Define a tooltip for elements on the domain diagram

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(i) Create a new <u>FunctionSpace</u> named <u>Tooltip</u> in the **Package** generic

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{ <b>}</b>	om.actifsource.dia	gramtype.gener	ic.Tooltip:FunctionSpace 🕨 🚺 State:ResourceInfo	
	typeOf name <i>metaModel</i>	ch.actifsour Tooltip	rce.core.selector.type.FunctionSpace	
E	resourceInfo	typeOf typeRef <i>typeId</i>	ch.actifsource.core.selector.type.ResourceInfo com.actifsource.diagramtype.generic.State	
		function	typeOf <b>TemplateFunction</b> name <b>tooltip</b> comment param	
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- ⅍ Create a new <u>ResourceInfo</u> with <u>typeRef</u> State
- ♦ Create a new <u>TemplateFunction</u> named tooltip



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Selector	State.transition				Break			
	•							
	State.name				*			
2	: Transition.eve	nt.name -> Transit	tion.targetSta	te.name				
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- ♥ Print the State.name
- rightarrow For every Transition in State: Print Transition.event.name
- ✤ For every Transition in State: Print Transition.targetState.name

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allowedClass	typeOf class paletteEntry	ch.actifsource.ui.diagram.diagramtype.AllowedClass com.actifsource.diagramtype.generic.State State : ShowPaletteEntry	
	style allowedRelation bighlightPath	: AllowedIndirectRelation : HighlightPath	
	tooltip	typeOf ch.actifsource.ui.diagram.diagramtype.SelectorToolTip selector State.tooltip@Tooltip	
<u> </u>			

♥ Use the <u>TemplateFunction</u> tooltip@Tooltip by using a <u>SelectorTooltip</u> in the Diagram Type



Hoover your cursor on any <u>State</u> to activate the **Tooltip** 



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