# **ACTS Tool Usage Study**

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# Installation Guide

#### 1. Install Firefox ver 3

To automatically capture links between online resources and the architecture, set the Firefox browser as the default browser. Select the Tools Menu / Options / Advanced. Under the System Defaults, click on the "Check Now" button

Options							×
Main	Tabs			<b>Privacy</b>	Security	Advanced	
General	Network U	pdate Encry	ption		,		
Acce	essibility — Always use t	:he <u>c</u> ursor ke	ys to navigate	within page	s		ון
	Search for te Warn me wh	e <u>x</u> t when I s en we <u>b</u> sites	tart typing ; try to redirect	or reload th	ne page		
Brov	vsing	allina					ר
	Use smooth	scrolling elling as I tv	De				
Syst	em Defaults						
Always check to see if Firefox is the default browser on Check Now							
				ок	Cancel	<u>H</u> elp	

2. Install Eclipse Classic ver 3.4 from

http://www.eclipse.org/downloads/download.php?file=/eclipse/downloads/drops/R-3.4.2-200902111700/eclipse-SDK-3.4.2-win32.zip

3. Install ArchStudio 4.

Within Eclipse, select the Help/Software Updates menu. Select the Available Software tab:

🖨 Software Upda	tes and Add-ons	
Installed Software	A <u>v</u> ailable Software	
Name	Version	Up <u>d</u> ate
Eclipse SDK	3.4.2.M20090211-1700	 Uninstall
		Properties
		Revert Configuration
Open the <u>'Automatic U</u>	<u>Ipdates'</u> preference page to set up an automatic update schedule.	
?		

Select Add Site and enter the following location:

http://acts.ics.uci.edu/updatesite\_3.4/backgroundRules/ .

ype filter text		To shall
Name		Install
INGILIE	Version	
Canymede Update S     Ganymede Update S     Official Antipactic Sector Sec	te pdates	Properties
	Add Site	Manage Sites
	Interview     Interview       Interview	Refresh
Show only the latest versions	of available software	
unugue items that have alread	y Deer Hitstalled	
pen the <u>'Automatic Updates'</u> pre	erence page to set up an automatic update schedule.	

Select ArchStudio 4 within the ArchStudio 4 Core and Uncategorized features and select the Install button:

Software Updates and Add-ons		
Installed Software Available Software		
type filter text	▼	Install
Name	Version	
🗉 🔲 📢 Ganymede Update Site		Properties
E V W ArchStudio 4 (Core)	esite_3.4/backgrounoRules/	
Optional)     ArchStudio 4 (Optional)		Add Site
Image: Image	modeling/m2t/updates/	Manage Sites
🗉 🔲 📢 The Eclipse Project Updates		
		Refresh
Show only the latest versions of availa	ble software	
Include items that have already been i	nstalled	
Open the <u>'Automatic Updates'</u> preference p	page to set up an automatic update schedule.	
0		

The Uncategorized feature contains the required packages of ArchStudio. Follow the rest of the on-screen installation instructions.

### Restart Eclipse.

Select a workspace

🖶 Workspace Launcher	
Select a workspace	
Eclipse SDK stores your projects in a folder called a workspace. Choose a workspace folder to use for this session.	
Workspace: C:\MyProject	▼ Browse
Use this as the default and do not ask again	OK Cancel

## To check whether the installation is successful

1. Open the ArchStudio perspective. From the Windows menu, select Open Perspective / Other. Select ArchStudio 4 from the list:

🖨 Open Perspective	
ArchStudio 4 CVS Repository Exploring CVS Repository Exploring Debug Java (default) Java Browsing Java Type Hierarchy Plug-in Development Resource Team Synchronizing	
C	OK Cancel

Here's the ArchStudio perspective within Eclipse. Select the Tracelink View Tab on the right side of the screen:



In case the Tracelink View or the ArchStudio 4 Launcher View does not appear in Eclipse, open these views from the Windows Menu / Show View / Other. Expand ArchStudio 4

🖨 Show View	
type filter text	
General     General     Archight Issues     Archlight Issues     Archlight Notices     ArchStudio 4     Archlight Notices     ArchStudio 4 Launcher     A File Manager View     A File Tracker View     A File Tracker View     Variability     Variability     CVS     Debug     Help	
<ul> <li>Java</li> <li>Java Browsing</li> <li>→ → PDE</li> <li>Use F2 to display the description for a selection</li> </ul>	✓
ОК	Cancel



2. Open a xADL file with links

Save the following sample xADL file locally:

http://tps.ics.uci.edu/svn/projects/archstudio4/trunk/edu.uci.isr.archstudio4.comp.tracelin k/res/TraceFiles/archstudio4\_wSampleLinks.xml

3. Import the xADL file to Eclipse.

Within Eclipse, create a new project. Right-click on the Navigator View, select New / Project. Then select General / Project (see below)

🖨 ArchStudio 4 - Eclipse SDK		
Eile Edit Navigate Se <u>a</u> rch <u>P</u> roject <u>R</u> un y	<u>v</u> indow <u>H</u> elp	
📬 • 🔚 🖆   💁 •   🛷 •   •		🖺 🖪 ArchStudio 4 🐉 🔌
🗄 Outline 🛛 🗌 🗖		Tracelink View 🛛 🗖 🗖
An outline is not available.	🖶 New Project	ew Tracelink
	Select a wizard Create a new project resource	Start Recording         Recover         Manual           racelink Details
	Wizards:         type filter text	Import Links Export Links racelink Options  Trace Analysis Trace Preferences
रिद्ध Navigator 🛛 🖓 🖓 🖓 🖓 🤤 🤤 🤹	?       < Back	ISR A
: <b>D</b> \$		i 🕿 🔮 🔶

Enter a project name and click Finish:

🖨 ArchStudio 4 - Eclipse SDK		
<u>Eile E</u> dit <u>N</u> avigate Se <u>a</u> rch <u>P</u> roject <u>R</u> un <u>W</u> indo	w <u>H</u> elp	
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🗄 Outline 🛛 🗖 🗖	New Project	elink View 🛛 🗖 🗖
An outline is not available.	Project Create a new project resource.	racelink 🔹
	Project name: SampleTraceFiles	ink Details 🔹
	Use default location Location: C:\MyProject\SampleTraceFiles Browse	
	Working sets	Topovit Linke Evenet Linke
	Working sets: Select	Import Links Export Links
		ink Options 🔹
		ce Analysis Trace Preferences
🔁 Navigator 🛛 🗖 🗖		
	Image: Cancel         Image: Cancel	
	AIM Launcher ArchEdit Archipelago Archlight Change Sets Viewer Selector Type Wrangler	
: <b>D</b> *		i 🕿 🍳 🗠

The Navigator View now shows the new project:

Right-click on the project and select Import. Select General / File System from the following screen:

🖨 Import	
Select Import resources from the local file system into an existing project.	Ľ
Select an import source:	
type filter text	
General Archive File Existing Projects into Workspace File System Preferences CVS Plug-in Development Run/Debug Team	
?       < Back	Cancel

Locate the sample xADL file that was previously saved and select Finish.

🖨 Import			
File system Import resources	from the local file system.		
From directory:	C:\Documents and Settings\Hazel\I	Desktop 💌	Browse
E Desk	top	Barch_compositeWLinks.xml	
Filter Types	Select All Deselect All		
Into folder: Sa	mpleTraceFiles	][	Browse
© Qverwrite e> ○ <u>C</u> reate comp ⓒ Create sglec	visting resources without warning lete folder structure ted folders only		
0	< <u>B</u> ack	Next > Einish	Cancel

The xADL file should now be displayed in the Navigator View:

🔁 Navigator 🛛	- 0
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🖃 🗁 SampleTraceFiles	
archstudio4 wSampleLinks.xml	>
Sample PaceFiles	

Drag the xADL file to the Archipelago icon in the ArchStudio launcher:



The xADL file is now opened in Archipelago.



Double-click on the ArchStudio 4.0 Architecture in the Outline View. In this sample xADL file, the architecture of the ArchStudio 4 is depicted.

The xADL file should now be rendered graphically in Archipelago (see center section of the screen). The magnification can also be adjusted to fit the entire architecture within the view:



The Archipelago View can also be expanded to fit the entire screen. Double-clicking on the tab toggles the view between full screen size to default screen size:



Switch back to the default screen size and select any of the bottom components (e.g. Archipelago, ArchEdit).

4. Check if you can view the trace links associated with the components in the architecture. Click on any of the components, represented by a blue box. You should see the link table populated with links:



Try double-clicking on a link on the table. The resource should be displayed within the Firefox browser:



Notes:

- It takes a bit of time for Eclipse to open a web resource for the first time.
- If the Eclipse browser can't find the resource, the problem lies with the Web Server of the resource, and not in the ACTS tool.
- Traversing links to other components within the same architecture is currently not implemented.

### Setup

Select the Trace Preferences button to specify the following paths in the Trace Preferences window.

Preferences		×
Specify attributes to vie	w	
<ul> <li>location</li> <li>relationship</li> <li>captureMode</li> <li>timeStamp</li> <li>author</li> <li>description</li> <li>status</li> </ul>		
Report Path		
Rules Path		
Browser User Path	C:\Documents and Settings\Hazel\Application Data\Mozilla\Fire	]
	Save and Close	

To enable the tool to record the visited paths in the Firefox browser, please specify the path to the Mozilla User path. *Note:* This is different from the Mozilla installation path.

Here's the path for Win 2003 Server & Win XP



Here's the path for Win Vista:

Select browser user directory	x
Desktop	
▲ 🖳 Hazel	
> 🔐 .archstudio4	
AppData	
	=
> 2K Sports	
Adobe	
D VoterLink	
Doogle	
De la Identities	
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🌗 Media Center Programs	
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🔺 鷆 Mozilla	
Extensions	
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Crash Reports	
A Profiles	
✓ Up 2yplt3hx.default	
bookmarkbackups	
extensions	
minidumps	
- mindunps	-
Eolder: 2yp1t3hx.default	
Make New Folder OK Canc	el

Also, make sure that the browsing history for the private data is not cleared every time Firefox is closed. (If it is, links between the architecture and resources navigated in Firefox will not be captured.) Within Firefox, go to the Tools/Options and click on Settings within the Private Data section.

Options						-	×
		页		6		÷	
Main	Tabs	Content	Applications	Privacy	Security	Advanced	
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Cooki	es	es from sites				<u>Exception</u>	5
	Accept th	ird-party coo	kies				
K	eep until:	they expire	•			Show Cookies	5
Private	e Data —— <u>w</u> ays clear	my private da	ta when I close l	Firefox		Se <u>t</u> tings.	
<u>A</u> :	sk me befor	e clearing pri	vate data			Clear <u>iv</u> o	w
				ОК	Cancel	<u>H</u> elp	þ

Uncheck "Browsing History" in the dialog box.

Clear Private Data
When Lask Eirefox to clear my private data, it should erase:
Browsing History
Download History
Saved Eorm and Search History
✓ C <u>a</u> che
Cookies
Offline Website Data
Saved Passwords
Authenticated Sessions
OK Cancel <u>H</u> elp

# **Using ArchStudio**

### **Recording traceability links**

This section assumes that you already have an architecture rendered in Archipelago, such as the provided archstudio4 xADL file. The task outlined below simulates an Architect searching for information about the Archipelago and Change Set Viewer components. While the Architect performs this task, the ACTS tool captures links automatically in the background.

1. Click on the "Start Recording" button.



2. Double-click on a component such as Archipelago. Note that the current implementation requires the component to be double-clicked even if it is already selected in Archipelago.



3. Open the Firefox browser and use the Google search engine to search for "ArchStudio Archipelago"



4. Select the search result "Archipelago and Relative Hints"



5. Go back to ArchStudio and double-click the "Change Set Viewer" component.



6. Go back to the Firefox browser and use Google to search for "Change Set Viewer"



7. Visit the first search result.



8. Close the Firefox browser. Click on Stop Recording









#### 9. Once the processing is completed, the following dialog appears:

10. Select the Archipelago component. The links to the newly recorded links now appear in the table:

🖨 ArchStudio 4 - SampleTrac	ceFiles/archstudio4_wSampleLinks.xml - Eclipse SDK		
<u>Eile E</u> dit <u>N</u> avigate Se <u>a</u> rch <u>P</u> roj	ect <u>R</u> un <u>W</u> indow <u>H</u> elp		
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- 🗁 Activity Diagrams	$\mathbb{N}$ $\mathbb{N}$ $\mathbb{N}$ $\mathbb{N}$ $\mathbb{N}$ $\mathbb{N}$	New Tracelink	* ^
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		location relationship	captureMode unescamp
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Archipelago		BNA4 implementation	auto_record Mon Apr 27 14:
Archlight Is:		XADI Mapping Implementation	auto_record Non-typ 97 14
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11. Similarly, selecting the "Change Set Component" shows the captured Google links.



Notes:

- The rules, which assign the trace link relationship (e.g. rationalization), are applied automatically in the background. Custom rules may also be used and another version of the tool allows users to plug-in their custom rules.
- While recording, it is important to select the component first (e.g. double-click on a component) prior to visiting a resource in order to automatically link the resources to the selected component. If a component is not selected, the links will not be captured.
- The tool may also be used to capture links to Word Documents, Excel Spreadsheets, Powerpoint files, and Adobe Acrobat files. Please see the contact info at the end of this file for more information.



• To delete a link, right-click on the link and select Delete

To refresh the list of links, select another component and then select the Change Set Viewer component.

🖨 ArchStudio 4 - SampleTrac	ceFiles/archstudio4_wSampleLinks.xml - Eclipse SDK			
<u>Eile E</u> dit <u>N</u> avigate Se <u>a</u> rch <u>P</u> roj	ect <u>R</u> un <u>W</u> indow <u>H</u> elp			
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😑 💼 file:/C:/MyProject/Samp 📥	/ / / / / / X V / 20% V	Recording OFF		
- 🗁 Activity Diagrams	$\square \square $	New Tracelink		۲
Statecharts     Structures		Start Recording	Recover Manual	
ArchStudio 4.0		Tracelink Details		
Types     Definition				
AIMLaunche			~	
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🔟 ArchEdit Ty		003391.html rationalization	auto_record Sat Aug 01 14:	Haz
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### **Recovering and Recording traceability links**

One of the prevalent approaches to automatically generating links is to use information retrieval (IR) techniques. In this task, we will use the integrated Google search engine to recover links within a given domain. After recovering the links, we will turn the record mode on and visit the recovered links. Once we finish recording, only the links that were actually visited are captured as traceability links.

1. Select the Archipelago component:



2. Click the recover button. The Recover Links dialog box appears at the top left corner. Click the OK button

Recover Links	ceFiles/archstudio4_wSampleLinks.xml - Eclipse SDK		🛛
Select Recover Tool Google 👽 り	ject Run Window Help		
OK Cancel	2 • 1 2 - 2 - 4 - 4 - 4		🖹 🛕 ArchStudio 4 🐉 »
📑 Outline 🛛 👘 🗖	🖍 *archstudio4_wSampleLinks.xml - Archipelago 🛛 🗖 🗖	A Tracelink View 🗙	- 8)
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3. Enter the following domain to search for Archipelago-related documentation:



4. Select the Archipelago component again and a recovered "Google links" is now listed in the table



5. Click on the "Start Recording" button, double-click on the Archipelago component, and double-click on the "Google links" to render this resource in the Firefox browser. The following screen is displayed:



6. Select the link to "General – What is ArchStudio?"



7. Then select a link to the Archipelago image in the right side of the screen. This brings us to the following screen:



- 8. Close the Firefox browser
- 9. Click on the "Stop Recording" button





10. After the links have been processed, we now see that the links to both ArchStudio webpage and the Archipelago graphic file have been captured:



This task has demonstrated how recording traceability links can be combined with existing trace recovery techniques. While we only used a simplistic text matching technique with Google search, more sophisticated information retrieval tools can also be integrated with the ACTS tool.

### **Final remarks**

Congratulations! You have now completed the tasks for the ACTS Tool Usage Study. Thank you for trying out the tool. Please now proceed to fill out the online surveys.

Questions or comments? Please contact Hazel Asuncio@ics.uci.edu .