

D-Case Weaver Specification

< appendices >

D-Case Weaver Installation Guide / D-Case Weaver User's Manual

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DEOS Project

JST-CREST

Research Area

“Dependable Operating Systems for Embedded Systems Aiming at Practical Applications”



Japan Science and Technology Agency

Revision History

Date	Version	Change description
2013/05/01	1.0	Initial release
2014/03/01	1.1	<p>The sub menus of “Module” menu were modified as below.</p> <ul style="list-style-type: none">- “Create Module” to “Modularize”- “Restore Module” to “Un-modularize” <p>Added the function to edit expiration date and responsibility of a node.</p> <p>Added the “Parameter” function.</p> <p>Modified the function to edit a link.</p> <p>Modified the function to change the order of sibling nodes.</p> <p>Added the function to compare two D-Case documents.</p> <p>Added the function to search D-Case documents.</p> <p>Added the function to approve a D-Case document.</p>

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Introduction

The D-Case Weaver is a web version of D-Case Editor and has the basic functions of D-Case Editor.

A .dcase file which D-Case Weaver generates is upward compatible with the file which D-Case Editor generates.

But the extended function in D-Case Weaver is not implemented in D-Case Editor.

Extended Function: Editing D-Script configuration parameters.

(Please refer to Section 8 “D-Script Parameters”)

For D-Case Editor, please refer to this web site.

<http://www.dependable-os.net/tech/D-CaseEditor/index-e.html>

For installation of D-Case Weaver, please refer to “A1. D-Case Weaver Installation Guide”.

For a quick start of the D-Case Weaver, please refer to “A2. D-Case Weaver User’s Manual”.

1 User Interface

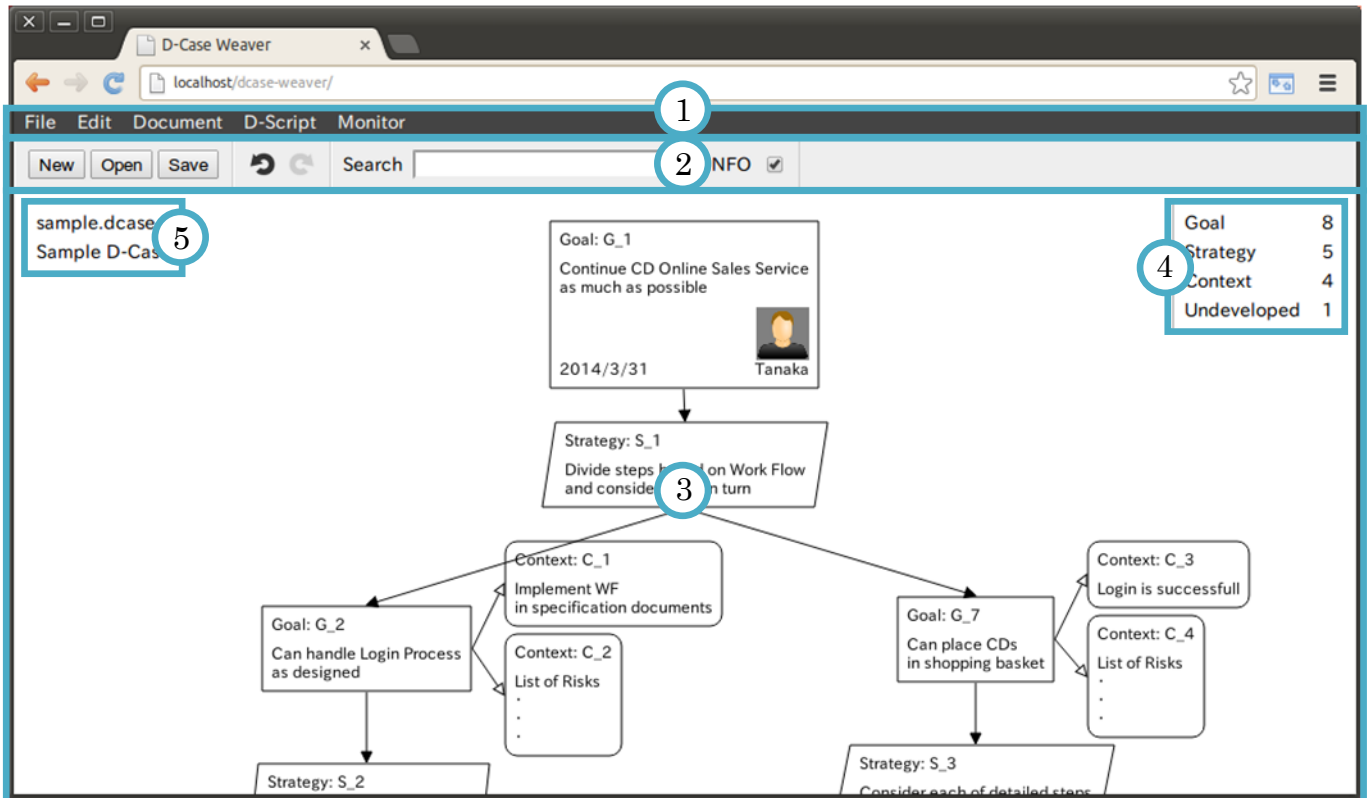


Figure 1-1 User Interface

1. Menu bar
2. Tool bar
3. Drawing area for D-Case diagram
4. Statistics information
5. File information

2 Creating and Saving a D-Case

2.1 Creating a New D-Case

To create a new D-Case, follow the procedure below.

No.	Procedure	Result	Note
1	From the menu bar, select “File” > “New”.	Empty D-Case diagram will be drawn in the drawing area.	You can do the same by clicking the “New” button on the tool bar.

2.2 Opening an Existing D-Case

To open an existing D-Case, follow the procedures below.

No.	Procedure	Result	Note
1	From the menu bar, select “File” > “Open”.	The Open D-Case dialog will be displayed.	You can do the same by clicking the “Open” button on the tool bar.
2	Select a file from the File List on the dialog.		
3.1	Click the “OK” button.	The D-Case diagram will be drawn in the drawing area and the dialog will close.	
3.2	Click the “Cancel” button	The dialog will close.	

Open D-Case dialog

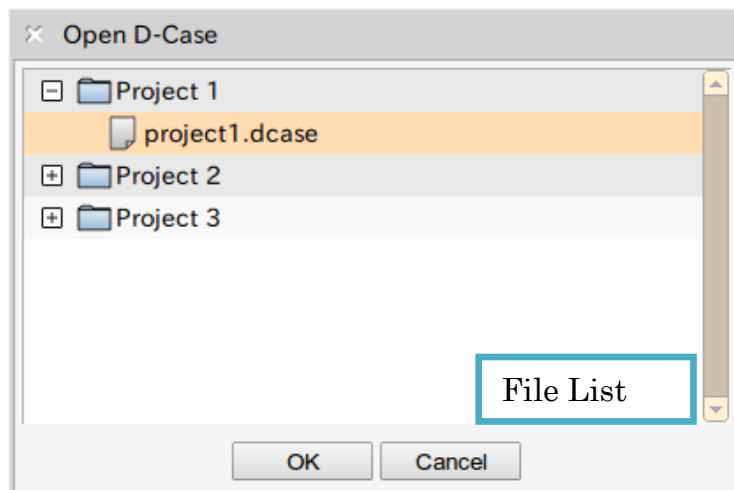


Figure 2-1 Open D-Case dialog

2.3 Saving a D-Case

To save a D-Case, follow the procedure below.

Saving a D-Case

No.	Procedure	Result	Note
1	From the menu bar, select “File” > “Save”.	If the file has been saved, the D-Case will be saved. Otherwise, go to the following “Saving as a New D-Case” Procedure 2.	You can do the same by clicking the “Save” button on the tool bar.

Saving as a New D-Case

No.	Procedure	Result	Note
1	From the menu bar, select “File” > “Save As”.	The Save D-Case dialog will be displayed.	
2	From the File List on the dialog, select a directory in which to save the D-Case.	The directory name will be displayed in the Directory field.	
3	Enter file name in the File Name field.		
4.1	Click the “OK” button.	The D-Case will be saved and the dialog will close.	
4.2	Click the “Cancel” button.	The dialog will close.	

Save D-Case dialog

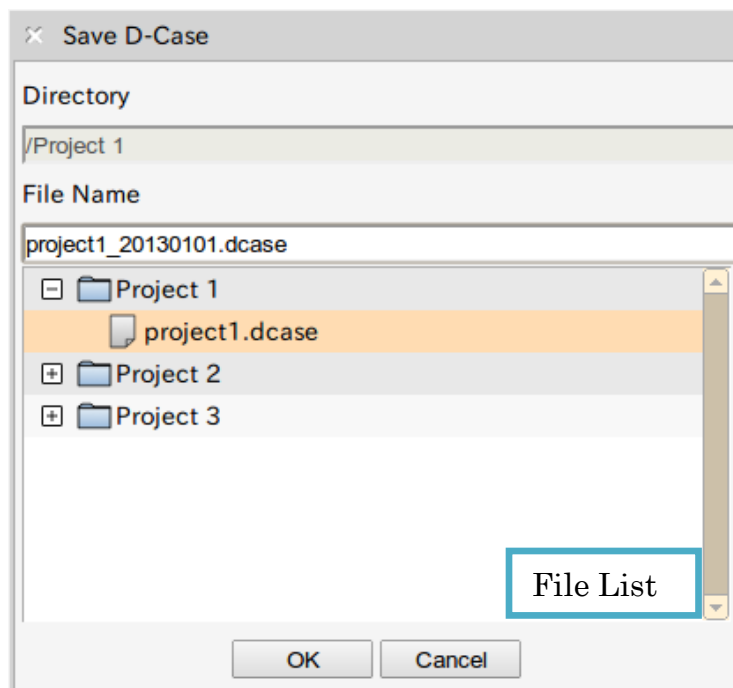


Figure 2-2 Save D-Case dialog

2.4 Saving as an Image File

To save a D-Case diagram in the PNG image format, follow the procedures below.

Saving entire D-Case diagram

No.	Procedure	Result	Note
1	From the menu bar, select “File” > “Save As Image File”.	The Save As Image File dialog will be displayed.	
2	Optionally, enter a scale factor in the Scale field.		If you want to save in half scale, enter “0.5” in the field.
3.1	Click the “OK” button.	The image file will be downloaded.	
3.2	Click the “Cancel” button.	The dialog will close.	

Saving a sub-tree rooted at a selected node

No.	Procedure	Result	Note
1	Right-click a node.	The context menu will be displayed.	
2	Select “Save As Image File”.	The Save As Image File dialog will be displayed.	
3	Go to “Saving entire D-Case diagram” procedure 2 above.		

Limitation

When the image width or height is over 8192 pixels, the image is split and the split images are archived as tgz and the archive is downloaded.

Save As Image File dialog

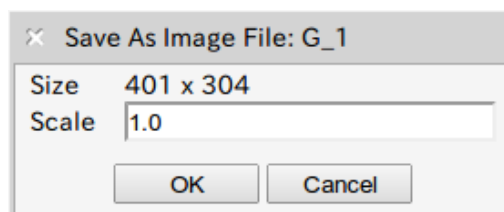


Figure 2-3 Save As Image File dialog

3 Editing Functions

3.1 Adding a Child Node

To add a child node, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click a node.	The context menu will be displayed.	
2	Select “Add Child”.	Node types will be listed on the context menu.	
3	Select a node type to be added.	A new node will be added.	

3.2 Editing a Node

To edit a node, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click a node.	The context menu will be displayed.	
2	Select “Edit Node”	The Node Editor dialog will be displayed.	
3	Edit the node.		
4.1	Click the “OK” button.	The changes will be applied to the node and the dialog will close.	
4.2	Click the “Cancel” button.	The dialog will close.	

Node Editor dialog

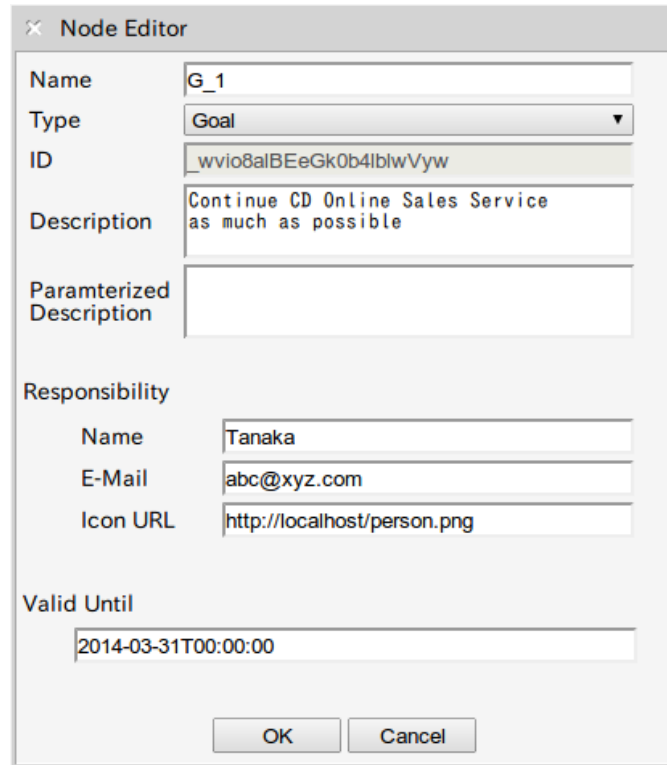


Figure 3-1 Node Editor dialog

Configurations

Name	Description
Name	Node name
Type	Node type
Description	Description
Parameterized Description	<p>Parameters can be inserted into description as format below.</p> <p><i>{Parameter Name}</i></p> <p>In the node, the part of <i>{Parameter Name}</i> is replaced by the value that is set to the parameter.</p> <p>For the setting procedure, refer to “0 Parameters”.</p> <p>For Example)</p> <p>The number of users logged in at any one time is {LoginUserCount}.</p> <p>If both the Description and the Parameterized Description are set, the Parameterized Description is displayed preferentially.</p>
Responsibility	<p>Name: Name of the responsible person</p> <p>E-Mail: E-Mail address of the responsible person</p> <p>Icon URL: Icon URL of the responsible person</p>
Valid Until	Expiration date of the node

The configurations are displayed on the node as below.

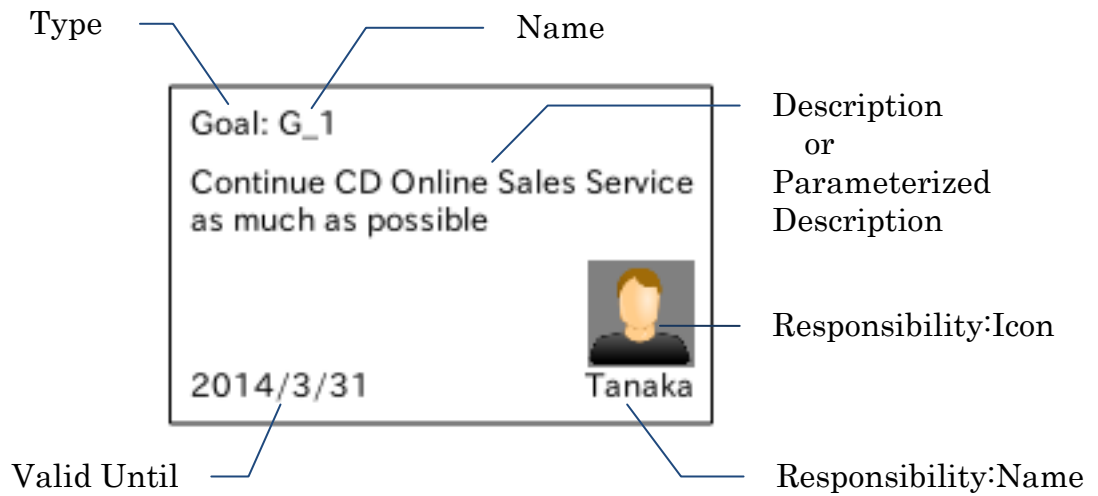


Figure 3-2 Description of Node

3.3 Deleting a Node

To delete a node, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click a node.	The context menu will be displayed.	
2	Select "Delete Node".	The node will be deleted.	

3.4 Changing an order of sibling nodes

To change an order of sibling nodes, follow the procedures below.

No.	Procedure	Result	Node
1	Right-click a node.	The context menu will be displayed.	
2	Select "Sibling Order".	Sibling Order dialog will be displayed.	
3	Change the order of sibling nodes by dragging and dropping the node		
4.1	Click the "OK" button.	The changes will be applied and the dialog will close.	
4.2	Click the "Cancel" button.	The dialog will close.	

Sibling Order Dialog

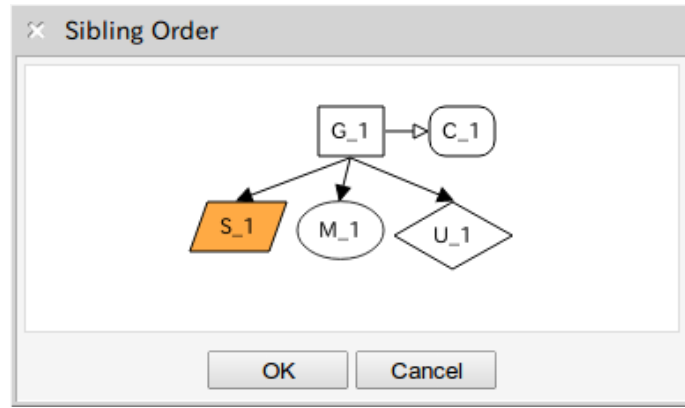


Figure 3-4 Sibling Order Dialog

You can change the order of sibling nodes by dragging and dropping the node.

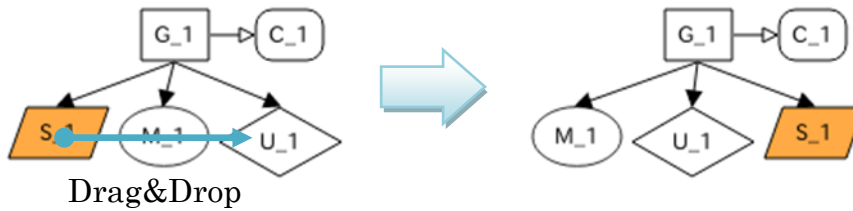


Figure 3-5 Changing the Order of Sibling Nodes

3.5 Adding a Link

To add a link, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click a node.	The context menu will be displayed.	
2	Select "Add Link".	"Parent" and "Child" will be displayed on the context menu.	
3	Select "Parent" or "Child"	The link, a red arrow for editing, will be displayed.	When "Parent" is selected, the link is displayed on parent side on the node. When "Child" is selected, the link is displayed on child side.
4	Drag the starting or ending point of the link and drop it on a node to link.		
5	Click places other than the starting and ending point of the link.	The changes will be applied and the link will be hidden.	

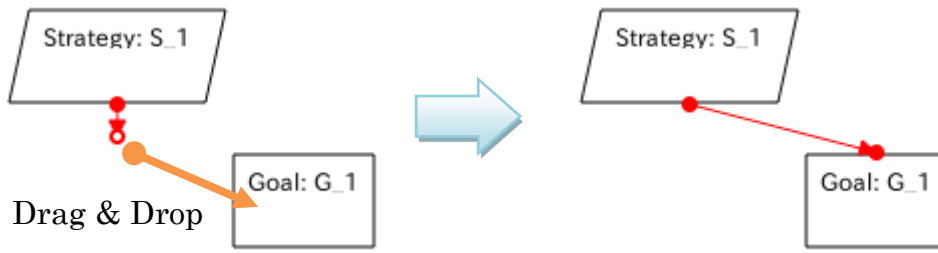


Figure 3-6 Editing a Link

3.6 Editing a link

To edit a link, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click a link.	The context menu will be displayed.	
2	Select “Edit Link”.	Edit Link dialog will be displayed.	
3	Edit the link.		
4.1	Click the “OK” button.	The changes will be applied to the link and the dialog will close.	
4.2	Click the “Cancel” button.	The dialog will close.	

Edit Link dialog

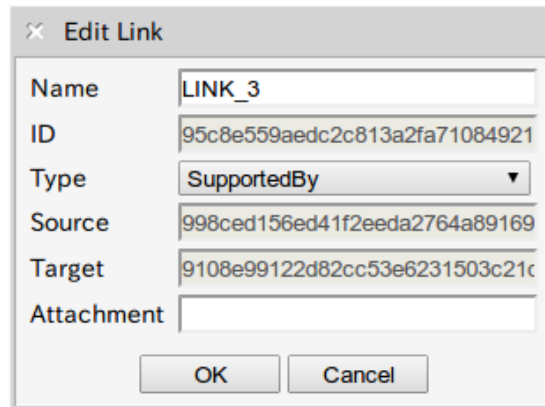


Figure 3-1 Edit Link dialog

Configurations

Name	Description
Name	Link name
Type	Link type
Attachment	Attachment

3.7 Editing a connection of a link

To edit a connection of a link, follow the procedures below.

No.	Procedure	Result	Note
1	Click a link.	The link, a red arrow for editing, will be displayed.	
2	Go to “Adding a Link” procedure 4 above.		

3.8 Deleting a Link

To delete a link, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click a link.	The context menu will be displayed.	
2	Select “Delete Link”.	The link will be deleted.	

3.9 Editing Properties

You can display file information and edit description.

The file information is displayed in the upper left portion of the drawing area. It has a file name at upper part and a description at lower part.

The “Edit” button is displayed when the mouse cursor hover over the file information.



Figure 3-2 File Information

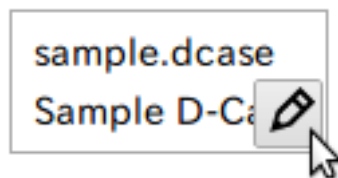


Figure 3-3 Edit Button

To edit the description, follow the procedures below.

No.	Procedure	Result	Note
1	From the menu bar, select “File” > “Properties”.	The Properties dialog will be displayed.	You can do the same by clicking the Edit button.
2	Edit description		
4.1	Click the “OK” button.	The changes will be	

		applied and the dialog will close.	
4.2	Click the “Cancel” button.	The dialog will close.	

Properties dialog

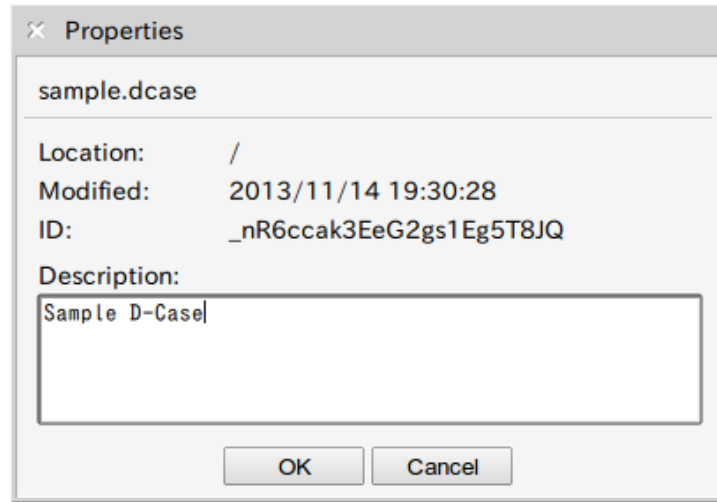


Figure 3-4 Properties dialog

3.10 Undoing and Redoing

To undo, follow the procedure below.

No.	Procedure	Result	Note
1	From the menu bar, select “Edit” > “Undo”.	The previous operation will be removed.	You can do the same by clicking the Undo button on the tool bar.

To redo, follow the procedure below.

No.	Procedure	Result	Note
1	From menu bar, select “Edit” > “Redo”.	The previous undo operation will be removed.	You can do the same by clicking the Redo button on the tool bar.

When undoing and/or redoing cannot be performed, the Undo and/or Redo items on the menu bar and the Undo and/or Redo button on the tool bar are disabled.



Figure 3-7 Undo / Redo button

4 Attachment

4.1 Attaching a URL

To attach a URL, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click a node.	The context menu will be displayed.	
2	Select "Attachment".	The Attachment dialog will be displayed.	
3	Enter a URL in the URL field.		
4.1	Click the "OK" button.	The changes will be applied and a clip icon will be attached to the node and the dialog will close.	
4.2	Click the "Cancel" button.	The dialog will close.	

You can remove the attachment by blanking the URL field.

Attachment dialog

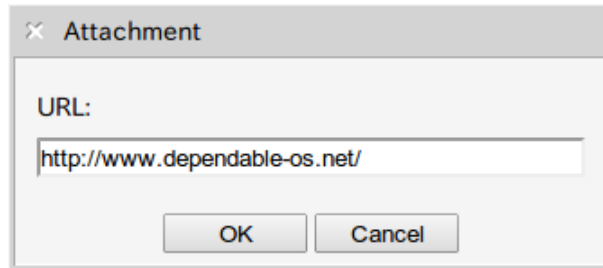


Figure 4-1 Attachment dialog

4.2 Opening an Attachment

To open an attachment, follow the procedure below.

No.	Procedure	Result	Note
1	Click the clip icon in a node.	The attachment will open.	

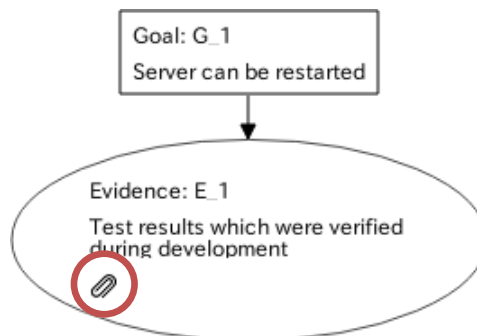


Figure 4-2 Clip icon

5 Searching for a Node

To search for a node, follow the procedures below.

No.	Procedure	Result	Note
1	Enter the name of the node to be searched in the Search field on the tool bar.	The node candidates will be listed every time a character is entered.	
2	From the list of node candidates, select a node.	The diagram will move as the selected node is displayed in center of the screen.	

Search Node Tool

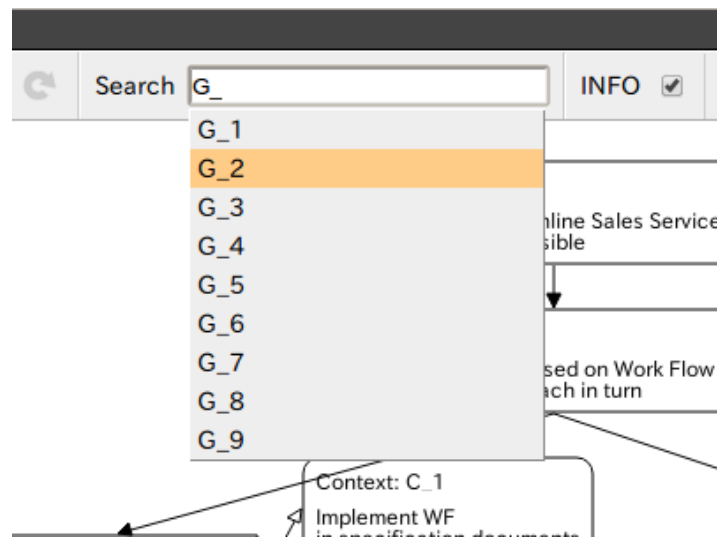


Figure 5-1 Search Node Tool

6 Viewing Statistics Information

You can show or hide statistics information by using the Show/Hide Statistics Information Tool.

Show/Hide Statistics Information Tool

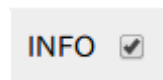


Figure 6-1 Show/Hide Statistics Information Tool

7 Repository Operations

The root directory of a repository as follows:

`/var/lib/dcase-weaver/documents`

You can do the following operations for files and directories under the root directory.

- Opening a file
- Creating a directory
- Deleting a file or a directory
- Uploading a file
- Downloading a file
- Searching for a D-Case document
- Comparing D-Case documents

7.1 Common Operations

To open the Repository Browser, follow the procedure below.

No.	Procedure	Result	Note
1	From the menu bar, select “Document” > “Browse”.	The Repository Browser will be displayed.	

The following operations in Section 7.2 to 7.8 start from this state.

Repository Browser

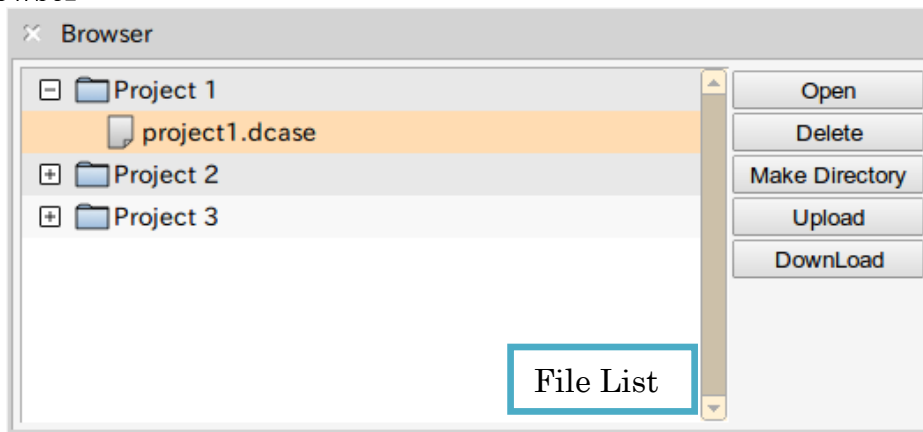


Figure 7-1 Repository Browser

7.2 Opening a File

To open a file, follow the procedures below.

No.	Procedure	Result	Note
1	From the File List, select a file.		
2	Click the “Open” button.	The selected file will open in a new window.	A file may be downloaded depending on the file type.

7.3 Deleting a File or Directory

To delete a file or directory, follow the procedures below.

No.	Procedure	Result	Note
1	From the File List, select a file or directory.		
2	Click the “Delete” button.	The selected file or directory will be deleted.	

7.4 Uploading a File

To upload a file, follow the procedures below.

No.	Procedure	Result	Note
1	From the File List, select a destination directory to upload a file.		
2	Click the “Upload” button.	The Upload dialog will be displayed.	
3	In the dialog, select a file by clicking the “Choose File” button.		The label of the button may differ in browsers other than Chrome.
4	Enter a file name in the File Name field.		
5.1	Click the “OK” button.	The file will be uploaded and the dialog will close.	
5.2	Click the “Cancel” button.	The dialog will close.	

Upload dialog

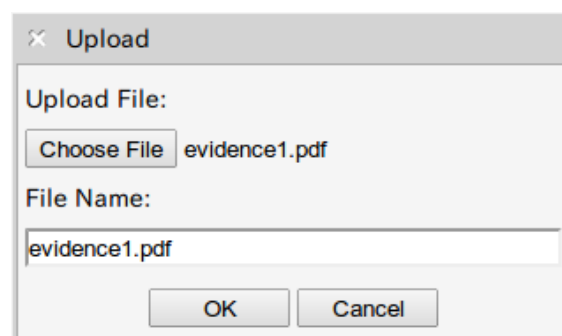


Figure 7-2 Upload dialog

7.5 Downloading a File

To download a file, follow the procedures below.

No.	Procedure	Result	Note
1	From the File List, select a file.		

2	Click the “Download” button.	The selected file will be downloaded.	
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7.6 Creating a Directory

To create a directory, follow the procedures below.

No.	Procedure	Result	Note
1	From the File List, select a directory.		A new directory will be created in the selected directory.
2	Click the “Make Directory” button.	The Make Directory dialog will be displayed.	
3	Enter a directory name.		
4.1	Click the “OK” button.	A new directory will be created and the dialog will close.	
4.2	Click the “Cancel” button.	The dialog will close.	

Make Directory dialog

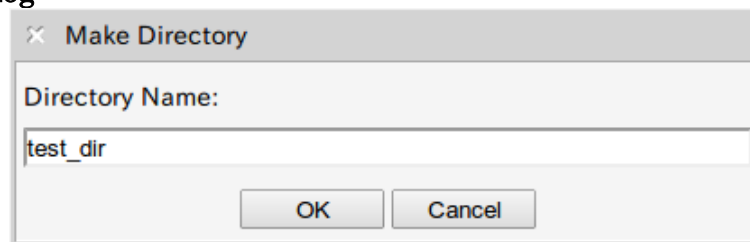


Figure 7-3 Make Directory dialog

7.7 Searching for a D-Case Document

To search for a D-Case document, follow the procedures below.

No.	Procedure	Result	Note
1	From the menu bar, select “Document” > “Search”.	The Search D-Case dialog will be displayed.	
2	Choose a search attribute, enter a key word and choose a comparison operator.		You can choose a search attribute from the following three attributes. <ul style="list-style-type: none"> • Directory path • File name • Modification date
3	Click the “Add” button.		You can add search conditions by repeating the procedure 2 and 3.
4.1	Click the “Search” button.	The dialog will close and the Search Result dialog will be displayed.	

4.2	Click the “Cancel” button.	The dialog will close.	
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Search D-Case dialog

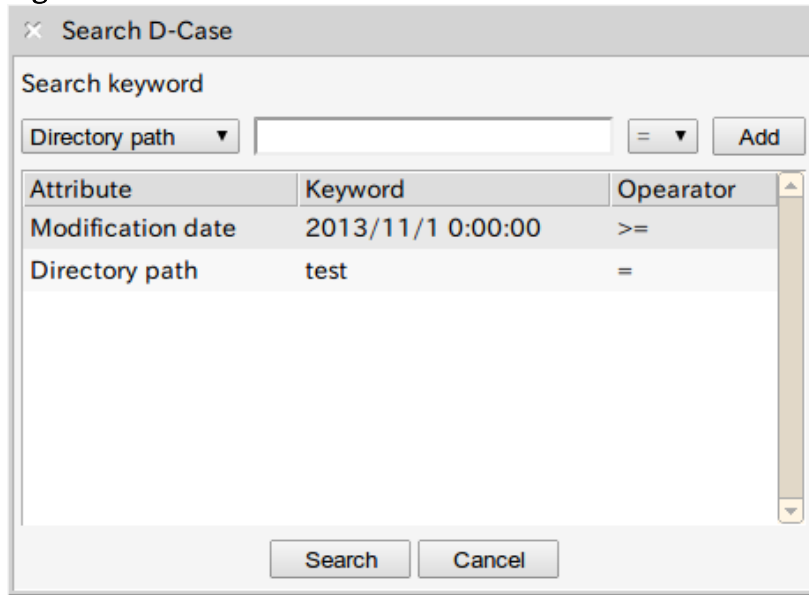


Figure 7-1 Search D-Case dialog

Search Result dialog

To open the selected D-Case document, click the “Open” button.

To compare the currently open D-Case document with the selected D-Case document, click the “Compare” button.

For comparison, please refer to “7.8 Comparing D-Case”.

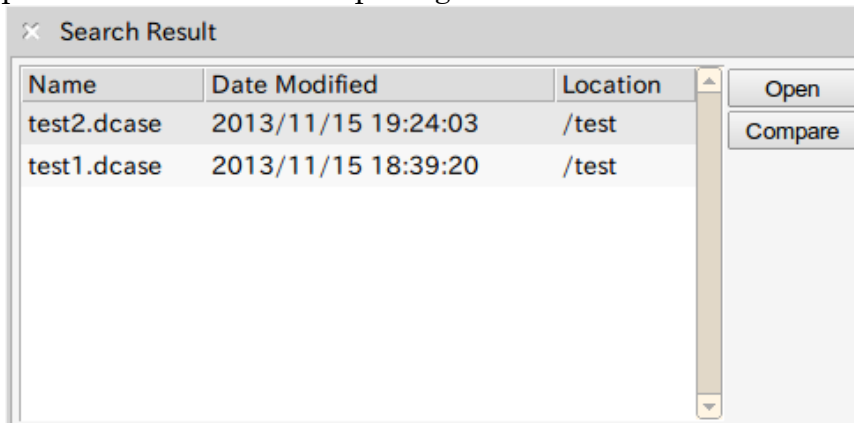


Figure 7-2 Search Result dialog

7.8 Comparing D-Case Documents

To compare D-Case documents, follow the procedures below.

No.	Procedure	Result	Note
1	From the menu bar, select “Document” > “Compare To”	The Browser will be displayed.	
2	From the Browser, select a file to compare.		
3.1	Click the “OK” button.	The comparison result will	

		be displayed and the dialog will close.	
3.2	Click the “Cancel” button.	The dialog will close.	

Comparison Result

When nodes or links are deleted from selected D-Case document, they are displayed with a blue color.

When nodes or links are modified, they are displayed with a red color.



Figure 7-3 Comparison Result

8 D-Script Parameters

You can set a D-Script and its parameters for performing the D-Script in a node.

8.1 D-Script Template File

A D-Script template file has information about available D-Scripts. The information of each D-Script includes a template to generate a configuration file and information on each parameter for a D-Script.

Using this template file, a D-Script and its parameters for performing the D-Script are set in a node.

The sample D-Script template file is located in the path below.

```
/usr/share/dcaser-weaver/d-script-template-sample/d-script-template.xml
```

Schema of D-Script Template File

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns="http://www.dependable-os.net/d-script"
  elementFormDefault="qualified"
  targetNamespace="http://www.dependable-os.net/d-script">
  <xs:element name="d-script">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="monitors" minOccurs="0">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="monitor" type="module_type"
                minOccurs="0" maxOccurs="unbounded"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
        <xs:element name="actions" minOccurs="0" >
          <xs:complexType>
            <xs:sequence>
              <xs:element name="action" type="module_type"
                minOccurs="0" maxOccurs="unbounded"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>

  <xs:complexType name="module_type">
    <xs:sequence>
      <xs:element name="name" type="xs:string"/>
      <xs:element name="description" type="xs:string"/>
      <xs:element name="version" type="xs:string"/>
      <xs:element name="license" type="xs:string"/>
      <xs:element name="author" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
</xs:schema>
```



```
<xs:element name="config_template" type="xs:string"/>
<xs:element name="config_path" type="config_path_type"/>
<xs:element name="explanations" type="explanations_type"/>
<xs:element name="parameters" type="parameters_type"/>
</xs:sequence>
</xs:complexType>

<xs:complexType name="config_path_type">
  <xs:simpleContent>
    <xs:extension base="xs:string">
      <xs:attribute name="extension" type="xs:string" use="required"/>
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>

<xs:complexType name="explanations_type">
  <xs:sequence>
    <xs:element name="explanation" maxOccurs="unbounded">
      <xs:complexType>
        <xs:simpleContent>
          <xs:extension base="xs:string">
            <xs:attribute name="lang" type="xs:string" use="required"/>
          </xs:extension>
        </xs:simpleContent>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>

<xs:complexType name="parameters_type">
  <xs:sequence>
    <xs:element name="parameter" minOccurs="0" maxOccurs="unbounded">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="description"/>
          <xs:element name="default"/>
        </xs:sequence>
        <xs:attribute name="name" type="xs:string" use="required"/>
        <xs:attribute name="type" type="xs:string" use="required"/>
        <xs:attribute name="min" type="xs:string" use="optional"/>
        <xs:attribute name="max" type="xs:string" use="optional"/>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
</xs:schema>
```

8.2 CGI Program for Deploying Configuration Files

A CGI program (hereafter described as “Deploy application”) generates a D-Script configuration file based on a D-Script template file and a D-Case file and deploys the configuration file.

D-Case Weaver sends the following request.

- **HTTP METHOD**
POST
- **REQUEST**
 - **PARAMETER**
No parameters
 - **BODY**

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema targetNamespace="http://www.dependable-os.net/dre"
  elementFormDefault="qualified"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns:dcase="http://www.dependable-os.net/2013/11/dcase"
  xmlns:d-script="http://www.dependable-os.net/d-script">

  <xs:element name="deploy">
    <xs:complexType>
      <xs:sequence>
        <xs:element ref="dcase:dcase"/>
        <xs:element ref="d-script:d-script"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

Example XML

```
<?xml version="1.0" encoding="utf-8"?>
<deploy xmlns="http://www.dependable-os.net/dre"
  xmlns:dcase="http://www.dependable-os.net/2013/11/dcase"
  xmlns:d-script="http://www.dependable-os.net/d-script">
  <dcase:dcase>
    "Contents of D-Case"
  </dcase:dcase>
  <d-script:d-script>
    "Contents of D-Script Template"
  </d-script:d-script>
</deploy>
```

Sample “Deploy application”

D-Case Weaver includes a sample of “Deploy application”.

You can use it by setting up the contents of the URL below. For the setting procedure, refer to Section 8.3 “Setting up Configuration”.

cgi-bin/deploy.php

8.3 Setting up Configurations

To set up, follow the procedures below.

No.	Procedure	Result	Note
1	From the menu bar, select “Edit” > “Preferences”.	The Preference dialog will be displayed.	
2	Set up the configurations of the D-Script.		
3.1	Click the “OK” button.	The configurations will be applied and the dialog will close.	
3.2	Click the “Cancel” button.	The dialog will close.	

Configurations

Name	Description
Template Path	The location of a D-Script template file For example: /project1/d-script.xml
Deploy URL	The URL of a deploy application For example: cgi-bin/deploy.php

8.4 Editing a D-Script

To select a D-Script and edit its parameters, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click a node.	The context menu will be displayed.	
2	Select “Edit D-Script”.	The D-Script dialog will be displayed.	
3	Select a D-Script from the drop-down menu.	Information of selected D-Script will be displayed.	

4	Edit the D-Script parameters.		
5.1	Click the “OK” button.	The parameters will be applied and the dialog will close.	
5.2	Click the “Cancel” button.	The dialog will close.	

For the schema of the D-Script parameter that is added to a node, refer to “A3. dre.xsd”.

D-Script dialog

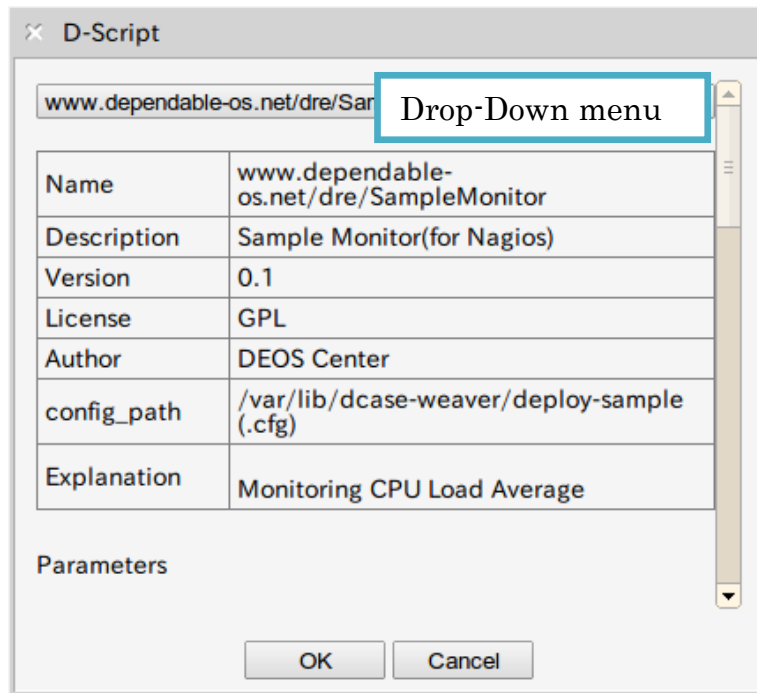


Figure 8-1 D-Script dialog

8.5 Deploying D-Script Configuration Files

To create and deploy D-Script configuration files, follow the procedure below.

No.	Procedure	Result	Note
1	From the menu bar, select “D-Script” > “Deploy”.	D-Script configuration files will be generated and be deployed.	The D-Script configuration files are deployed in the directory specified with config_path in a D-Script template file.

Note:

The directory where D-Script configuration files are deployed must be writable by www-data a user.

9 Monitoring

D-Case Weaver gets each node status from a status server and changes the node color according to the status.

The status is obtained in text format from a status server by HTTP protocol.

- HTTP METHOD
GET
- REQUEST
 - PARAMETERS
No parameters
 - BODY
No data
- RESPONSE

The response is text formatted as follows.

```
id="Goal node ID" status="Status" message="Message"
```

The line delimited by a new line character is repeated every Goal.

The character encoding must be UTF-8.

Parameters

Name	Description
Goal node ID	ID of the node of the monitoring target
Status	Select one of the following strings <ul style="list-style-type: none"> ● normal ● running ● error
Message	Message

Status and Color

Status	Color
normal	White
running	Yellow
error	Red

9.1 Setting up Configurations

To set up, follow the procedures below.

No.	Procedure	Result	Note
1	From the menu bar, select “Edit” > “Preferences”.	The Preference dialog will be displayed.	
2	Set up the configurations of Node Status Monitor.		
3.1	Click the “OK” button.	The configurations will be applied and the dialog will close.	
3.2	Click the “Cancel” button.	The dialog will close.	

Configurations

Name	Description
URL	The URL of a status server For example: cgi-bin/node-status.wsgi
Interval[ms]	The monitoring interval, in milliseconds For example: 10000

9.2 Starting a Monitoring

To start a monitoring, follow the procedure below.

No.	Procedure	Result	Note
1	From the menu bar, select “Monitor” > “Start”.	The monitoring will start.	

9.3 Stopping a Monitoring

To stop a monitoring, follow the procedure below.

No.	Procedure	Result	Note
1	From the menu bar, select “Monitor” > “Stop”.	The monitoring will stop.	

9.4 Sample Program

node-status.wsgi

This CGI script returns node statuses.

Location

/usr/share/dcase-weaver/www/cgi-bin/node-status.wsgi

URL

cgi-bin/node-status.wsgi

Usage

Add the ID of a D-Case file to the URL and request.

For example, to get the status of a D-Case that ID is abcdefg, set up the following.

```
cgi-bin/node-status.wsgi/abcdefg
```

node-status-client.py

This CLI sends the status of a node to a status server.

Location

/usr/share/dcase-weaver/bin/node-status-client.py

Usage

```
Usage: node-status-client.py update -n NODE_ID [-s STATUS] [-m MESSAGE] [-H HOST]
DCASE_ID
       node-status-client.py delete [-n NODE_ID] [-H HOST] DCASE_ID
       node-status-client.py list [-n NODE_ID] [-H HOST] DCASE_ID
```

Options:

```
-h, --help           show this help message and exit
-n NODE_ID, --node-id=NODE_ID
                       Node ID
-s STATUS, --status=STATUS
                       Status
-m MESSAGE, --message=MESSAGE
                       Message
-H HOST, --host=HOST  To remote execute, specify the HOST name
```

10 Cooperation Function with DS-Bench

D-Case Weaver cooperates with DS-Bench to provide the functions below.

- Getting test scenarios from DS-Bench.
- Setting up parameters of a test scenario
- Starting a test scenario
- Adding a node according to the evaluation result of a test scenario

For the installation and the usage of DS-Bench/Test-Env, refer to the following documents and web site.

- DS-Bench/Test-Env Specification (DEOS-FY2013-BS-01E)
- DS-Bench/Test-Env Setup Manual(DEOS-FY2013-BI-01E)
- DS-Bench/Test-Env Execution Manual(DEOS-FY2013-BT-01E)
- <http://www.dependable-os.net/tech/DSBenchDCloud/index-e.html>

10.1 Setting up Configurations

To set up the cooperation function with DS-Bench, follow the procedures below.

No.	Procedure	Result	Note
1	From the menu bar, select “Edit” > “Preferences”.	The Preference dialog will be displayed.	
2	Set up the configuration of the DS-Bench.		
3.1	Click the “OK” button.	The configurations will be applied and the dialog will close.	
3.2	Click the “Cancel” button.	The dialog will close.	

Configurations

Name	Description
Name	The name of DS-Bench server
URL	The URL of DS-Bench server

10.2 Selecting a test scenario

To select a test scenario prepared by DS-Bench, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click a Strategy node.	The context menu will be displayed.	
2	Select “DS-Bench” > “Select Scenario”.	The Scenario List dialog will be displayed.	
3	Select a test scenario.		
4.1	Click the “OK” button.	The Goal node will be	

		added and the dialog will close.	
4.2	Click the “Cancel” button.	The dialog will close.	

By the procedures on the S_1 Strategy node, the G_1 Goal node is added to the Strategy node as below.

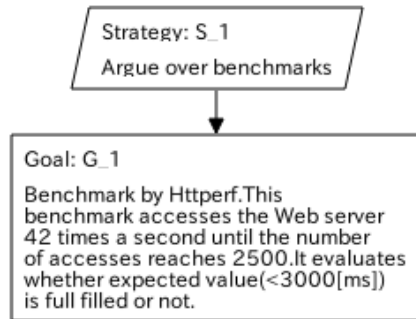


Figure 10-1 Selecting a test scenario

Scenario List dialog

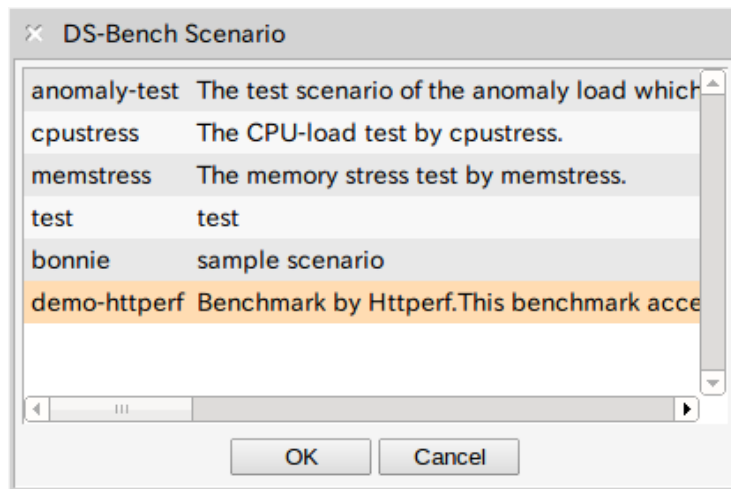


Figure 10-2 Scenario List dialog

10.3 Setting up Parameters

To set up parameters of a scenario, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click the Goal node added in Section 10.2.	The context menu will be displayed.	
2	Select “DS-Bench” > “Set Parameters”.	The Scenario Parameters dialog will be displayed.	
3	Set parameters		
4.1	Click the “OK” button.	The parameters will be applied and the dialog will close.	
4.2	Click the “Cancel” button.	The dialog will close.	

The parameters are test scenario specific.

Scenario Parameters dialog

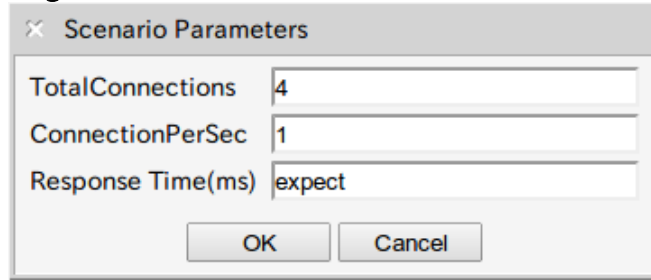


Figure 10-3 Scenario Parameters dialog

10.4 Starting a Test Scenario

To start a test scenario, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click the Goal node added in Section 10.2	The context menu will be displayed.	
2	Select “DS-Bench” > “Execute”	The test scenario will start.	

During execution of a test scenario, the execution status is displayed in the node.

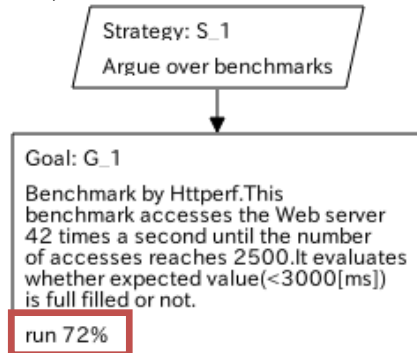


Figure 10-4 Execution Status

After completion of a test scenario, a node is added according to the evaluation result. If the result is satisfactory, a blue Evidence node is added.

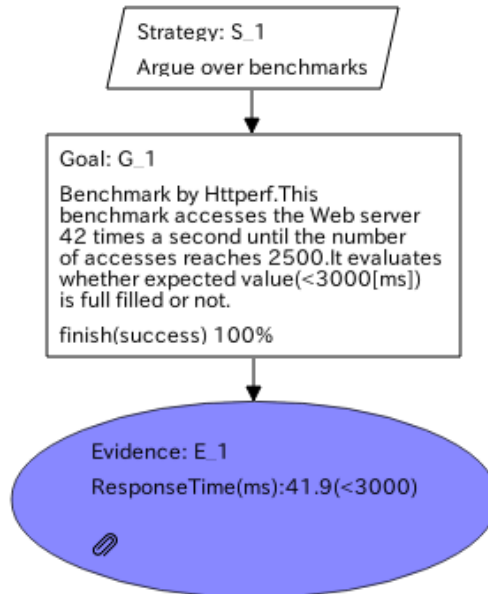


Figure 10-5 Satisfactory

If the result is unsatisfactory, a red “Undeveloped” node is added.

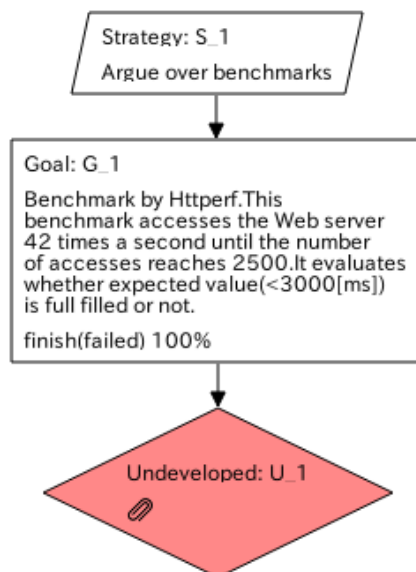


Figure 10-6 Unsatisfactory

You can see the execution result details screen of DS-Bench if you click the clip icon in the node.

10.5 Stopping a Test Scenario

To stop a test scenario, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click the Goal node added in Section 10.2.	The context menu will be displayed.	
2	Select “DS-Bench” > “Cancel”	The test scenario will stop.	

11 Module

D-Case Weaver provides a modularization function which saves a part of D-Case as a new file. The modularized part is represented as a module node in the current D-Case.

11.1 Modularizing

To create a module, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click a node.	The context menu will be displayed.	
2	Select “Module” > “Modularize”.	The Modularize dialog will be displayed.	
3	Enter the name of the module.		
4.1	Click the “OK” button.	The modularized sub-tree will be saved as a new file and be represented as a module node in the diagram. And the dialog will close.	
4.2	Click the “Cancel” button	The dialog will close.	

Modularize dialog

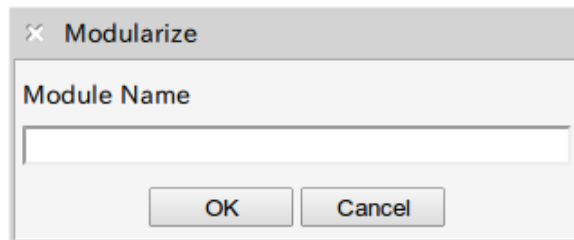


Figure 11-1 Modularize dialog

If the G_2 node in Figure 11-2 is modularized, the diagram is as in Figure 11-3.

Before Modularization



Figure 11-2 Before Modularization

After Modularization

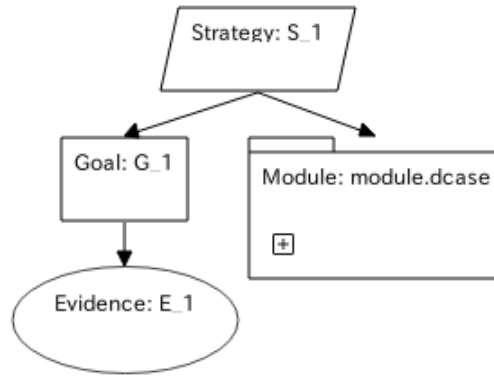


Figure 11-3 After Modularization

The destination to save the module

The destination directory is a directory that name is a original D-Case file name without extension(.dcase). The module is saved in the directory.

11.2 Selecting a Module

To select a module, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click a Module or Goal node.	The context menu will be displayed.	
2	Select “Module” > “Select Module”.	The Select Module dialog will be displayed.	
3	Select a module.		
4.1	Click the “OK” button.	The module will be set in the node and the dialog will close.	
4.2	Click the “Cancel” button.	The dialog will close.	

Select Module dialog

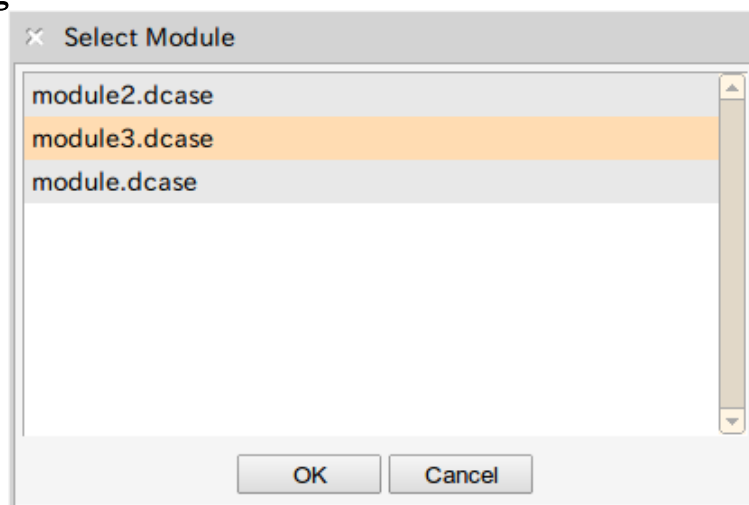


Figure 11-4 Select Module dialog

11.3 Un-modularizing

To un-modularize, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click a Module node	The context menu will be displayed.	
2	Select “Module” > “Un-modularize”.	The module will be un-modularized.	

If the Figure 11-3 is un-modularized, the diagram is as below.

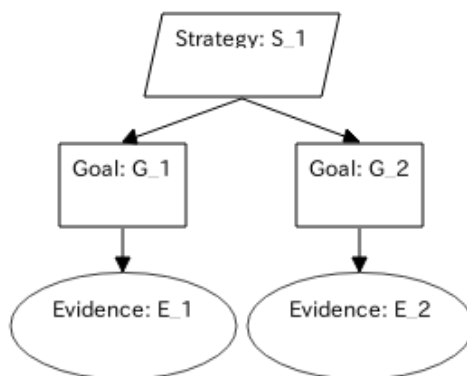


Figure 11-5 Un-modularizing a Module

11.4 Showing/Hiding inside of a Goal/Module Node

To show/hide inside of a Goal/Module node, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click a modularized node.	The context menu will be displayed.	
2	Select “Module” > “Show/Hide Module” > “Show”.	The D-Case which was modularized will be displayed in the node.	To hide the expanded view, select “Hide”. You can do the same by clicking the +/- icon in the node.

When the inside of Module node in Figure 11-3 is shown, the diagram changes as below.

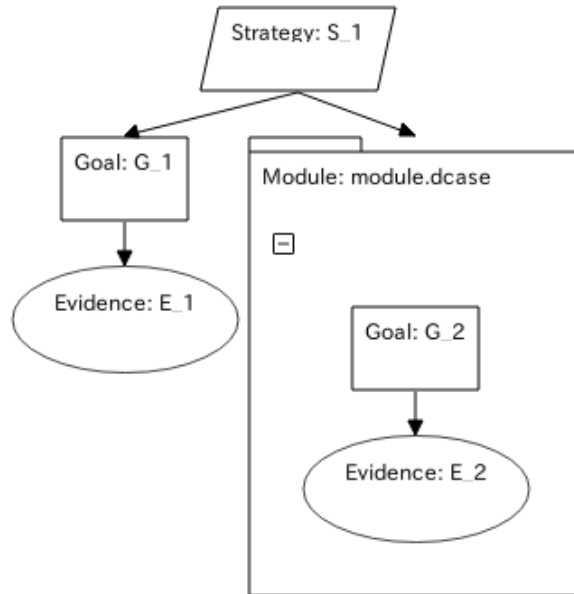


Figure 11-6 Exposed View of a Node

12 Cooperation Function with Alfresco (Community Edition)

12.1 Setting up Configurations

To set up the configuration of a cooperation function with Alfresco (Community Edition), follow the procedures below.

No.	Procedure	Result	Note
1	From the menu bar, select “Edit” > “Preferences”.	The Preference dialog will be displayed.	
2	Check the “Use Alfresco” check box of Alfresco.		
3	Set up the configurations of Alfresco.		
4.1	Click the “OK” button.	The configuration will be applied and the dialog will close.	
4.2	Click the “Cancel” button.	The dialog will close.	

Configurations

Name	Description
Use Alfresco	If checked, the cooperation function is enabled. If not checked, the cooperation function is disabled. If you change this configuration, you must restart your browser.
CMIS URL	The CMIS AtomPub binding URL For example: http://[host]:[port]/alfresco/service/cmisis
User	The user ID of Alfresco

12.2 Login

When accessing the Alfresco server for the first time after starting D-Case Weaver, a login dialog is displayed.

Login dialog



Figure 12-1 Login dialog

12.3 Creating a New D-Case

This procedure is same as that in Section 2.1 “Creating a New D-Case”.

12.4 Opening an Existing D-Case

To open an existing D-Case, follow the procedures below.

No.	Procedure	Result	Note
1	From the menu bar, select “File” > “Open”.	The Open D-Case dialog will be displayed.	You can do the same by clicking the “Open” button on the tool bar.
2	From the drop-down menu, select a repository.	The File List will be updated.	
3	From the File List, select a file.		
4.1	Click the “OK” button.	The D-Case diagram will be displayed in the drawing area and the dialog will close.	
4.2	Click the “Cancel” button.	The dialog will close.	

Open D-Case dialog

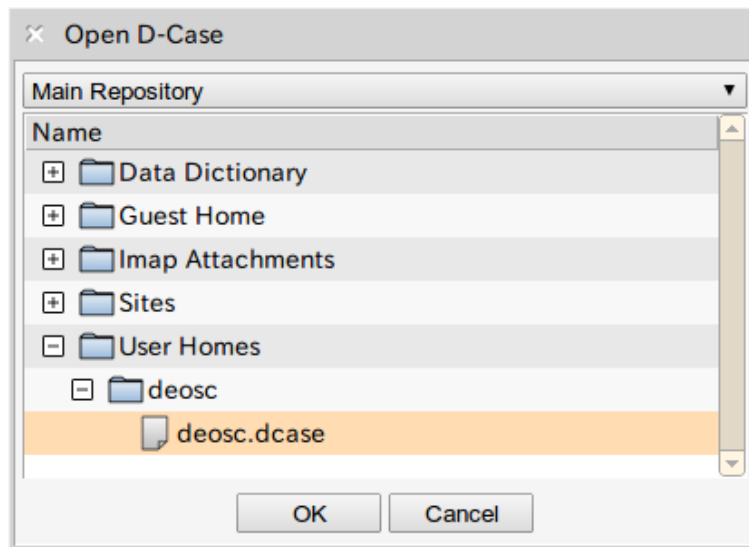


Figure 12-2 Open D-Case dialog

12.5 Saving a D-Case

To save a D-Case, follow the procedures below.

No.	Procedure	Result	Note
1	From the menu bar, select “File” > “Save”.	If the file has not been saved, go to the following “Save D-Case dialog”. Otherwise, go to the “Comment dialog” below	You can do the same by clicking the “Save” button on the tool bar.

Save D-Case dialog

No.	Procedure	Result	Note
1	From the drop-down menu, select a repository.	The File List will be updated.	
2	From the File List, select a directory.		
3	Enter a file name in the File Name field.		
4.1	Click the “OK” button.	If a file with the same name already exists, go to the following “Comment dialog”. Otherwise, the D-Case will be saved and the dialog will close.	
4.2	Click the “Cancel” button.	The dialog will close.	

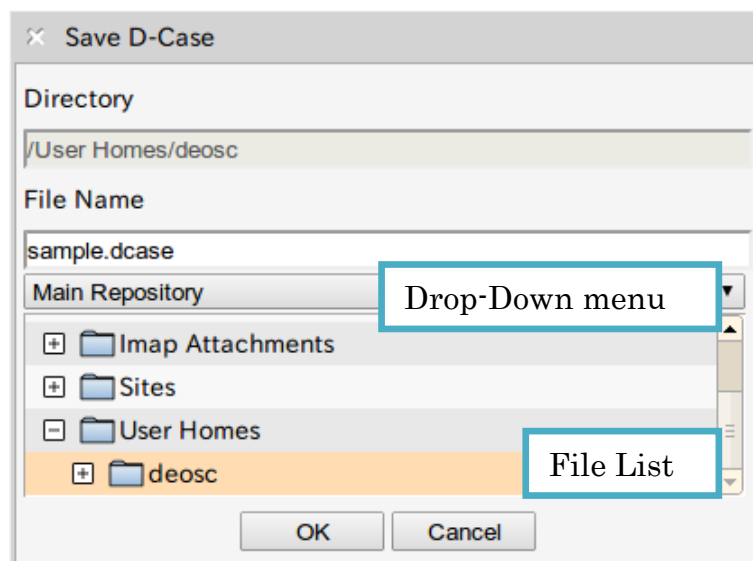


Figure 12-3 Save D-Case dialog

Comment dialog

No.	Procedure	Result	Note
1	Enter a comment in the Comment field.		
2.1	Click the “OK” button.	The D-Case will be saved and the dialog will close.	
2.2	Click the “Cancel” button.	The dialog will close.	

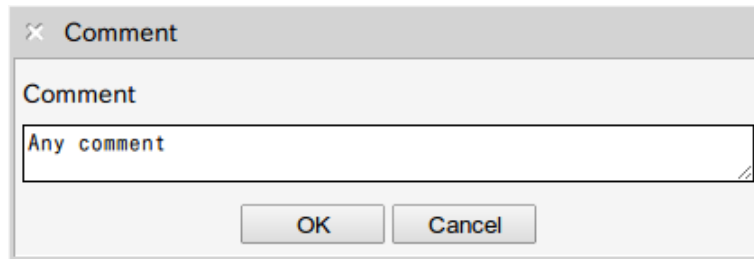


Figure 12-4 Comment dialog

Save as a New D-Case

To save as a new D-Case, follow the procedures below.

No.	Procedure	Result	Note
1	From the menu bar, select “File” > “Save As”.	The Save D-Case dialog will be displayed.	
2	Go to the “Save D-Case dialog”		

12.6 Registering a Document

To register a document in the Evidence or Context node, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click on an Evidence or Context node.	The context menu will be displayed.	
2	Select “Document” > “Browse”.	The Node Documents dialog will be displayed.	
3	From the Repository Document List, select a document.		
4	Click the “Add” button.	The document will be registered in the node and will be listed in the Document List.	

Node Documents dialog

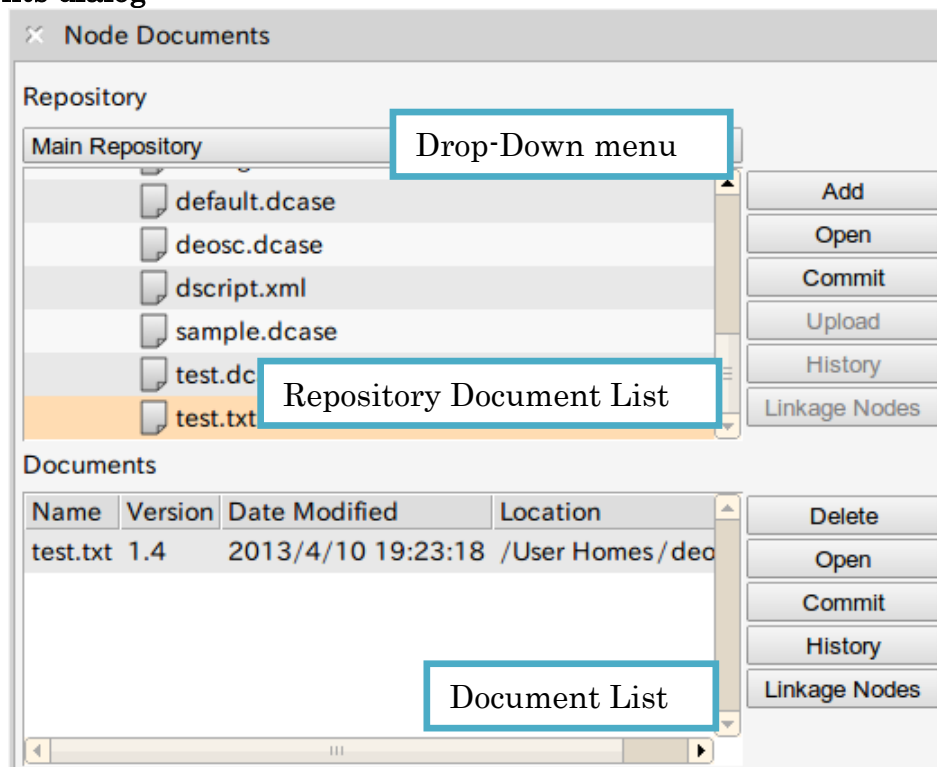


Figure 12-5 Node Documents dialog

12.7 Unregistering a Document

To unregister a document from the Evidence or Context node, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click on an Evidence or Context node.	The context menu will be displayed.	
2	Select “Document” > “Browse”.	The Node Documents dialog will be displayed	
3	From the Document List, select a document		
4	Click the “Delete” button.	The document will be unregistered and will be removed from the Document List.	

12.8 Opening a Document

To open a document registered in the Evidence or Context node, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click on an Evidence or Context node.	The context menu will be displayed.	You can do the same via the Document dialog.
2	Select “Document” > “Browse”	The Node Documents dialog will be displayed.	

3	From the Document List, select a document.		
4	Click the “Open” button.	The document will open.	

12.9 Uploading a Document to the Repository

To upload a document to the repository, follow the procedures below.

No.	Procedure	Result	Note
1	From the menu bar, select “Document” > “Browse”	The Document dialog will be displayed.	You can do the same via the Node Document dialog.
2	From the file list, select the destination directory to upload the document.		
3	Click the “Upload” button.	The Upload dialog will be displayed.	
4	Select a file to upload.		
5	Enter the file name in the File Name Field		
6.1	Click the “OK” button.	The document will be uploaded and the Upload dialog will close.	
6.2	Click the “Cancel” button.	The Upload dialog will close.	

Document dialog

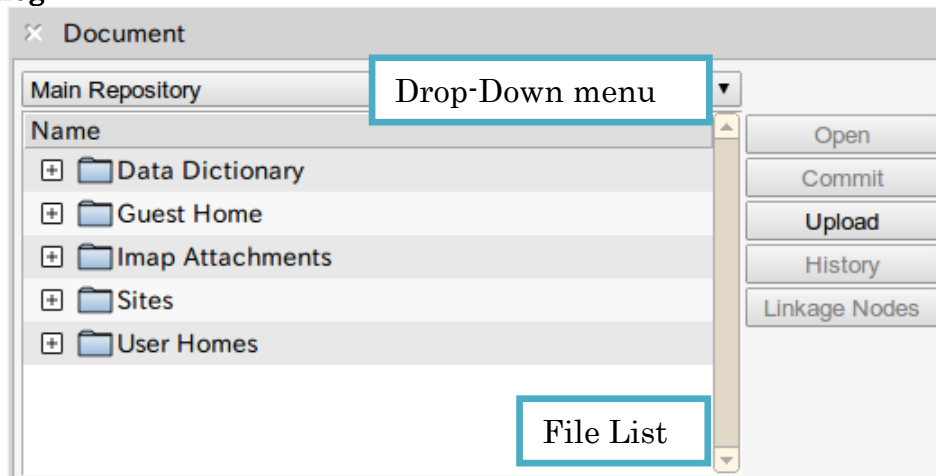


Figure 12-6 Document dialog

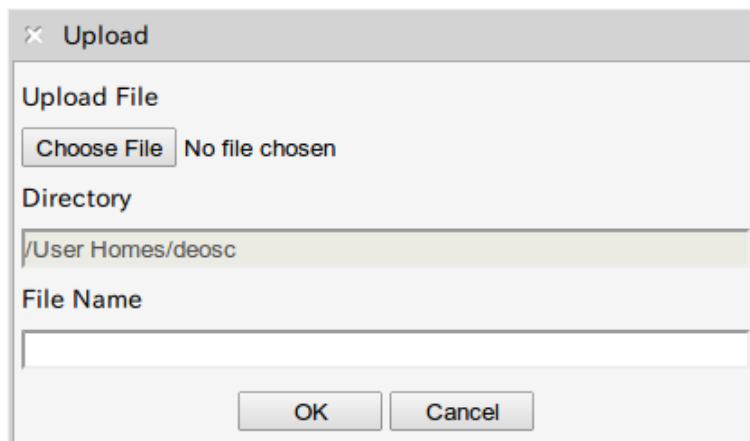
Upload dialog

Figure 12-7 Upload dialog

12.10 Updating a Document

To update a document in a repository, follow the procedures below.

No.	Procedure	Result	Note
1	From the menu bar, select “Document” > “Browse”.	The Document dialog will be displayed.	You can do the same via the Node Document dialog.
2	From the File List, select a file.		
3	Click the “Commit” button.	The Commit dialog will be displayed.	
4	Select a file to be committed.		
5	Enter comments in Comment field.		
6.1	Click the “OK” button.	The file will be committed and the Commit dialog will close.	
6.2	Click the “Cancel” button.	The Commit dialog will close.	

Commit dialog

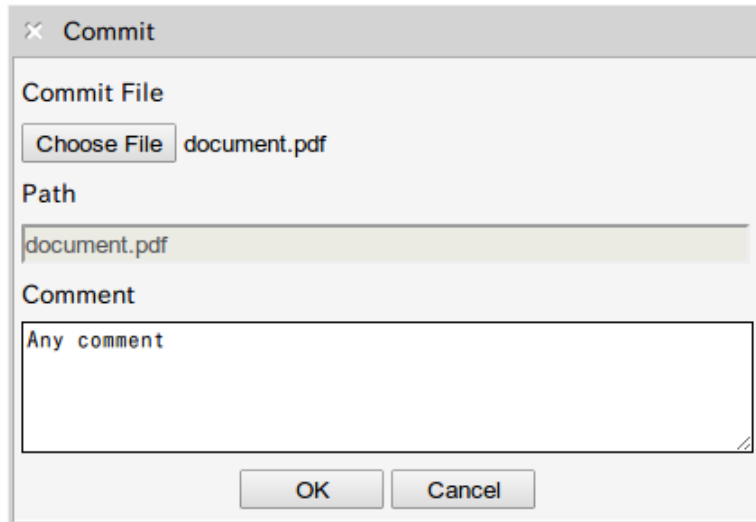


Figure 12-8 Commit dialog

12.11 Checking for Modifications

Documents which have been modified are detected and nodes which have modified documents are colored yellow.

To check for modifications, follow the procedure below.

No.	Procedure	Result	Note
1	From the menu bar, select “Document” > “Check for modifications”.	The Check for modifications dialog will be displayed and nodes which have a modified document will be changed to yellow.	Status of modified documents is displayed as “changed” in the Check for modifications dialog.



Figure 12-9 Checking for Modifications

Check for modifications dialog

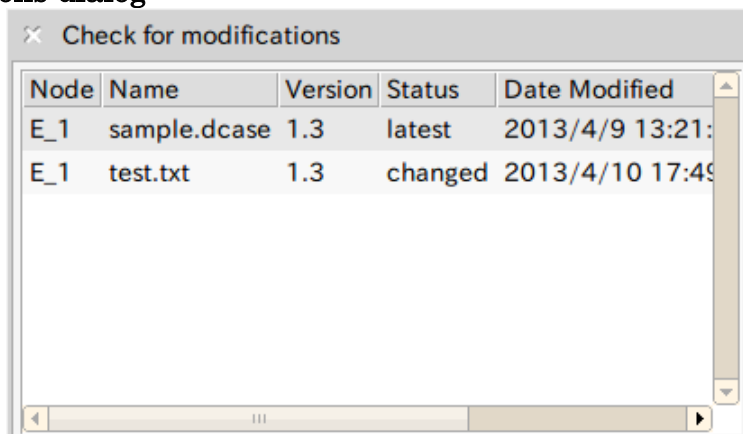


Figure 12-10 Check for modifications dialog

12.12 Viewing History

To view history, follow the procedures below.

No.	Procedure	Result	Note
1	From the menu bar, select “Document” > “Browse”.	The Document dialog will be displayed.	You can do the same via the Node Document dialog.
2	From the File List, select a document.		
3	Click the “History” button.	The History dialog will be displayed.	If you click the “Open” button, the document will open.

History dialog

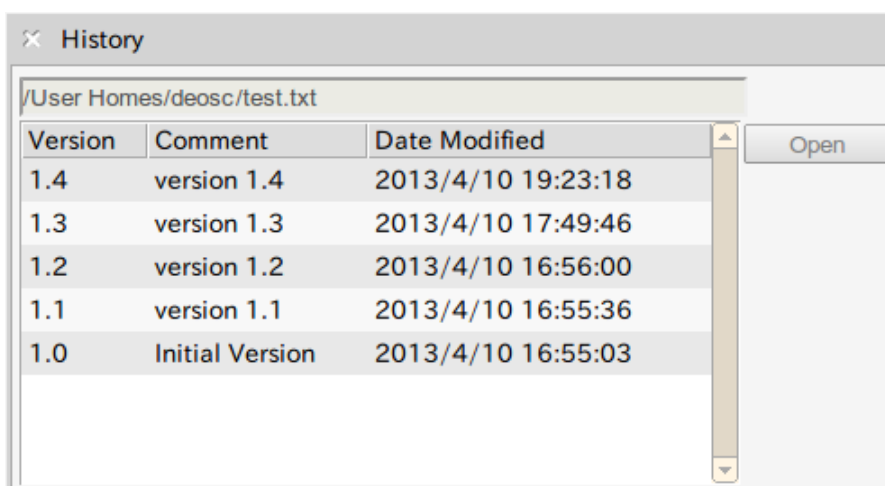


Figure 12-11 History dialog

12.13 List of Linkage Node

The node which is linked to a document is searched from the current D-Case file and D-Case files in the directory where the current D-Case file is located.

To list nodes which are linked to a document, follow the procedures below.

No.	Procedure	Result	Note
1	From the menu bar, select “Document” > “Browse”.	The Document dialog will be displayed.	You can do the same via the Node Document dialog.
2	From the File List, select a document.		
3	Click the “Linkage Node” button.	The Linkage Node List dialog will be displayed.	

Linkage Node List dialog

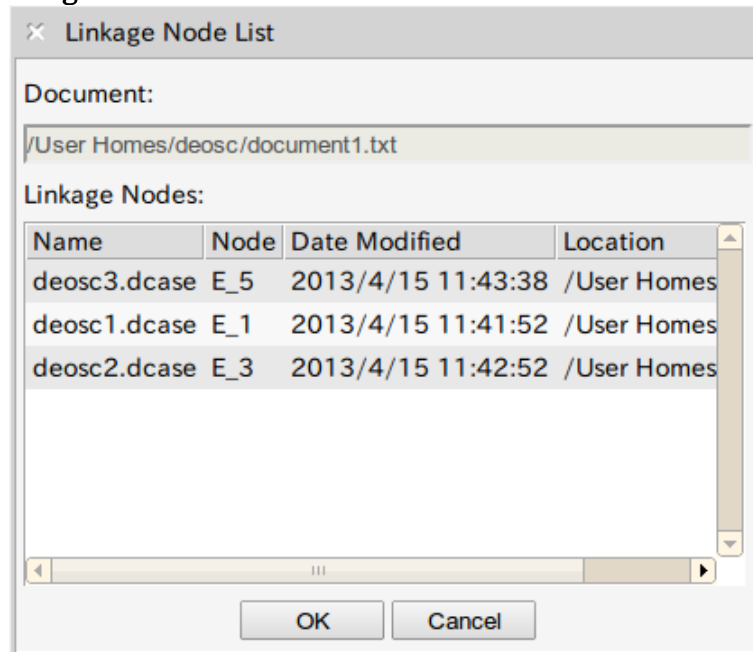


Figure 12-12 Linkage Node List dialog

12.14 Searching for a D-Case Document

To search for a D-Case document, follow the procedures below.

No.	Procedure	Result	Note
1	From the menu bar, select “Document” > “Search”.	The Search D-Case dialog will be displayed.	
2	Choose a search attribute, enter a key word and choose a comparison operator.		You can choose a search attribute from the following three attributes. <ul style="list-style-type: none"> - Directory path - File name

			<ul style="list-style-type: none"> - Creation date - Creation by - Modification date - Modification by - Comment
3	Click the “Add” button.		You can add search conditions by repeating the procedure 2 and 3.
4.1	Click the “Search” button.	The dialog will close and the Search Result dialog will be displayed.	
4.2	Click the “Cancel” button.	The dialog will close.	

Search D-Case dialog

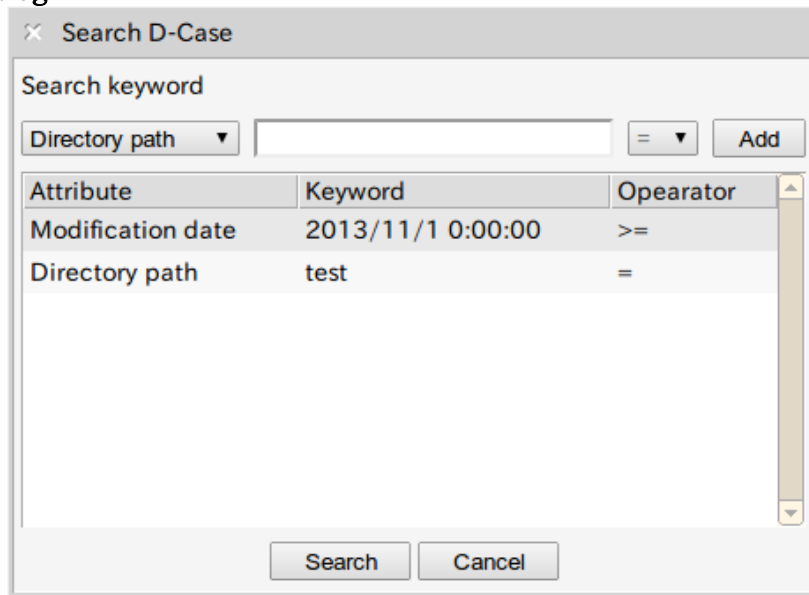


Figure 12-13 Search D-Case dialog

Search Result dialog

To open the selected D-Case document, click the “Open” button.

To compare the currently open D-Case document with the selected D-Case document, click the “Compare” button.

For comparison, please refer to “7.8 Comparing D-Case”.

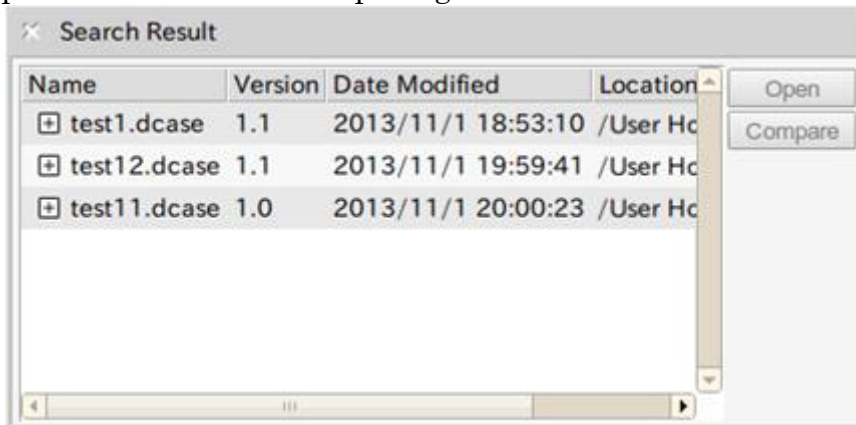


Figure 12-14 Search Result dialog

12.15 Comparing D-Case Documents

To compare D-Case documents, follow the procedures below.

No.	Procedure	Result	Note
1	From the menu bar, select “Document” > “Compare To”	The Browser will be displayed.	
2	From the Browser, select a file to compare.		
3.1	Click the “OK” button.	The comparison result will be displayed and the dialog will close.	
3.2	Click the “Cancel” button.	The dialog will close.	

Comparison Result

When nodes or links are deleted from selected D-Case document, they are displayed with a blue color.

When nodes or links are modified, they are displayed with a red color.



Figure 12-15 Comparison Result

12.16 Approving a D-Case Document

The version number of the D-Case document is incremented and a fixed phrase of approval and approver names are added to commit log.

Member registration

To register a member, follow the procedures below.

No.	Procedure	Result	Note
1	From the menu bar, select “Edit” > “Preferences”.	The Preferences dialog will be displayed.	
2	Enter member name in the Member field and Click the “Add” button.	The member will be added to the Member List.	You can delete member from the Member list with the “Delete” button.
3.1	Click the “OK” button.	The changes will be	

		applied and the dialog will close.	
3.2	Click the “Close” button.	The dialog will close.	

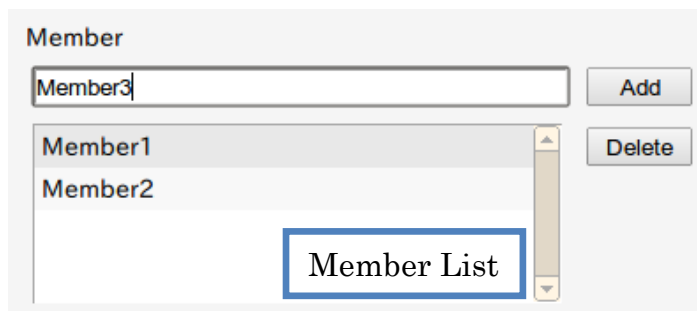


Figure 12-16 Member Registration

Approval of D-Case Document

To approve a D-Case document, follow the procedures below.

No.	Procedure	Result	Note
1	From the menu bar, select “Document” > “Approval”.	The Approval D-Case dialog will be displayed.	
2	Select the “Choose” button.	The Document Browser will be displayed.	
3	Select a file from the Document Browser and click the “OK” button.		
4	Enter comment to the Comment field.		
5	Choose approvers with “>>” and “<<” button.		
6.1	Click the “OK” button.	The version number will be incremented and information of approval is added to commit log.	
6.2	Click the “Cancel” button.	The dialog will close.	

Approval D-Case dialog

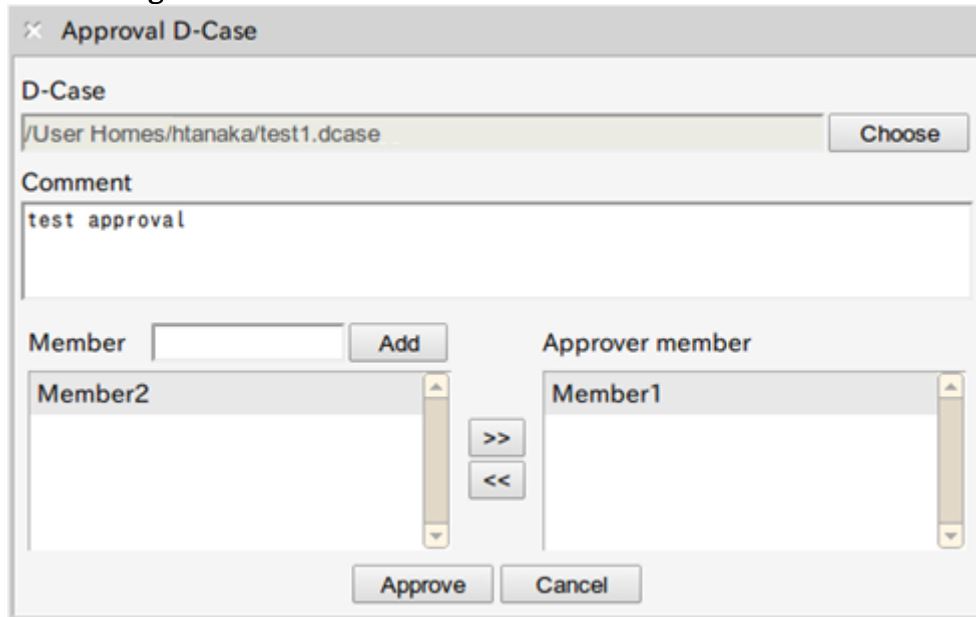


Figure 12-17 Approval D-Case dialog

13 Parameters

You can set parameters in a Parameter node. The sub tree that the root node is the parent node of the Parameter node refers the parameters.

The parameters can be available by setting in the “Parameterized Description” with the following format.

{Parameter Name}

Setting example of Parameterized Description

The number of users logged in at any one time is {LoginUserCount}

The parameter is presented as follows.

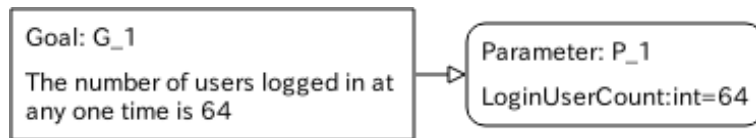


Figure 13-1 Setting example of Parameter

13.1 Opening the Parameters dialog

To open the Parameters dialog, follow the procedures below.

No.	Procedure	Result	Note
1	Right-click on a Parameter node.	The context menu will be displayed.	
2	Select “Parameters”	The Parameters dialog will be displayed.	

Parameters dialog

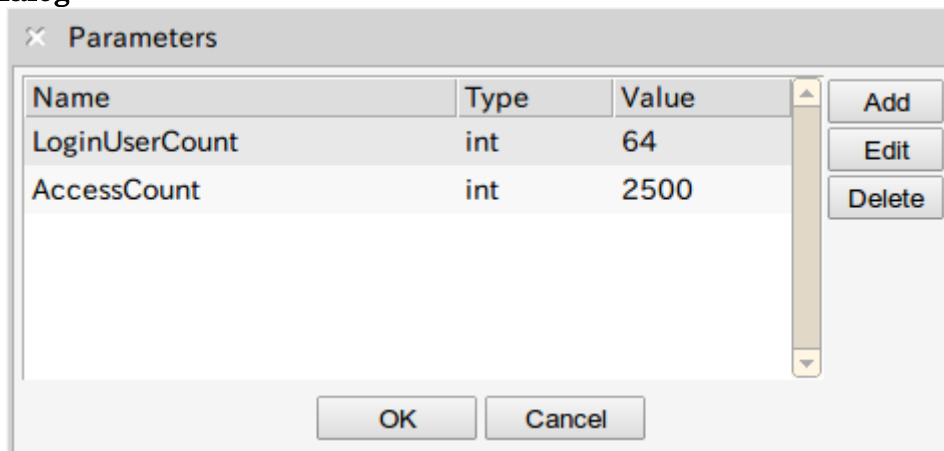


Figure 13-2 Parameters dialog

13.2 Adding Parameters

To add parameters, follow the procedures below.

No.	Procedure	Result	Note
1	Click the “Add” button on the Parameters dialog.	The Edit Parameter dialog will be displayed.	
2	Set up the configurations.		

Configurations

Name	Description
Name	Parameter name
Type	Parameter type
Value	Value
Length	Number of characters of the Value (shown if the Type is string)
Range	Range of the Value (shown if the Type is int, double and raw)
Enumeration Items	List of enumerated constant value (shown if the Type is enum) An enumerated constant value can be added with “Add” button. An enumerated constant value can be deleted with “Delete” button.

13.3 Editing a Parameter

To edit a parameter, follow the procedure below.

No.	Procedure	Result	Note
1	Select a parameter to edit.		
2	Click the “Edit” button on the Parameters dialog.	The Edit Parameter will be displayed.	
3	Edit parameter		

13.4 Deleting a Parameter

To delete a parameter, follow the procedures below.

No.	Procedure	Result	Note
1	Select a parameter to delete.		
2	Click the “Delete” button on the Parameters dialog.	The parameter will be deleted.	

Appendix

A1. D-Case Weaver Installation Guide

System Requirements

We have confirmed that D-Case Weaver works in the following system environments.

- OS
 - Ubuntu 12.04 32bit/64bit
- Browser
 - FireFox (Version 24.0)
 - Chrome (Version 26.0)

(Internet Explorer is not supported.)

Download

You can download the Debian package of D-Case Weaver from the following URL.
<http://www.dependable-os.net/tech/DCaseWeaver/index-e.html>

Installation

To install D-Case Weaver, execute the following commands.

```
$ sudo apt-get install apache2 python python-support python-setuptools  
libapache2-mod-wsgi libapache2-mod-php5  
$ sudo dpkg -i dcase-weaver_1.1.1_all.deb
```

(The filename of the package may change depending on the version.)

A2. D-Case Weaver User's Manual

Starting D-Case Weaver

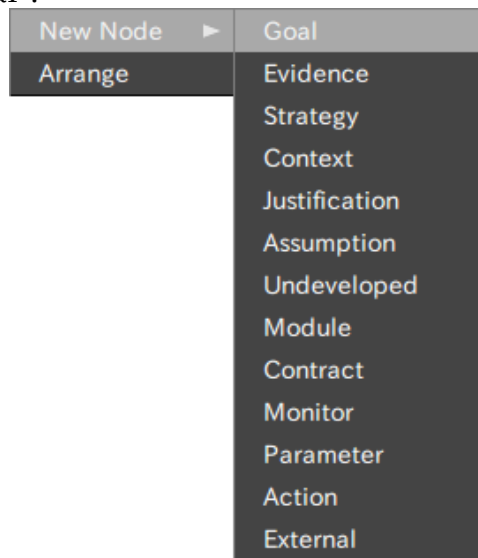
Enter the following URL in the address bar of your browser.

<http://<HOST>/dcase-weaver/index.html>

(<HOST> is the host name or IP address of the host where D-Case Weaver has been installed.)

Creating a Node

1. To open the context menu, right-click on a part of the drawing area other than nodes and links.
2. Select "New Node" > "Goal".

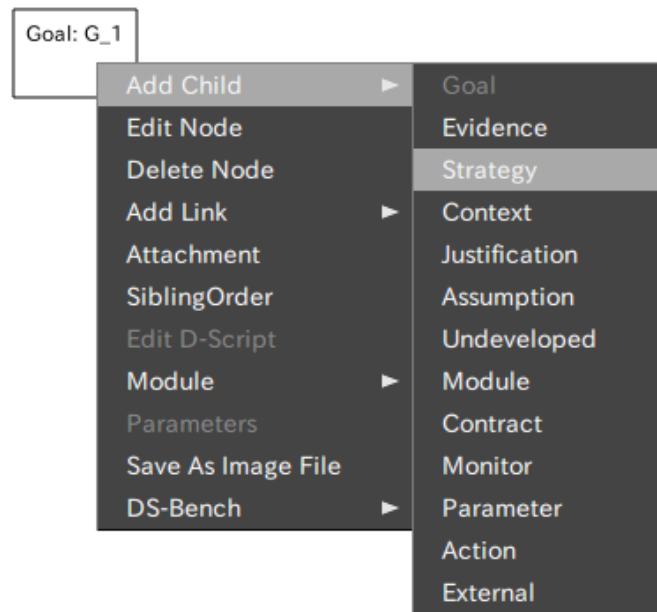


3. A new Goal node will be created.



Adding a Child Node

1. To open the context menu, right-click on a node.
2. Select "Add Child" > "Strategy".

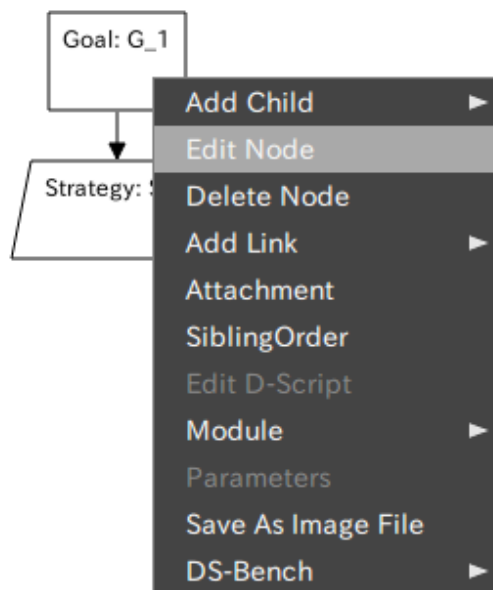


3. A Strategy node will be added.

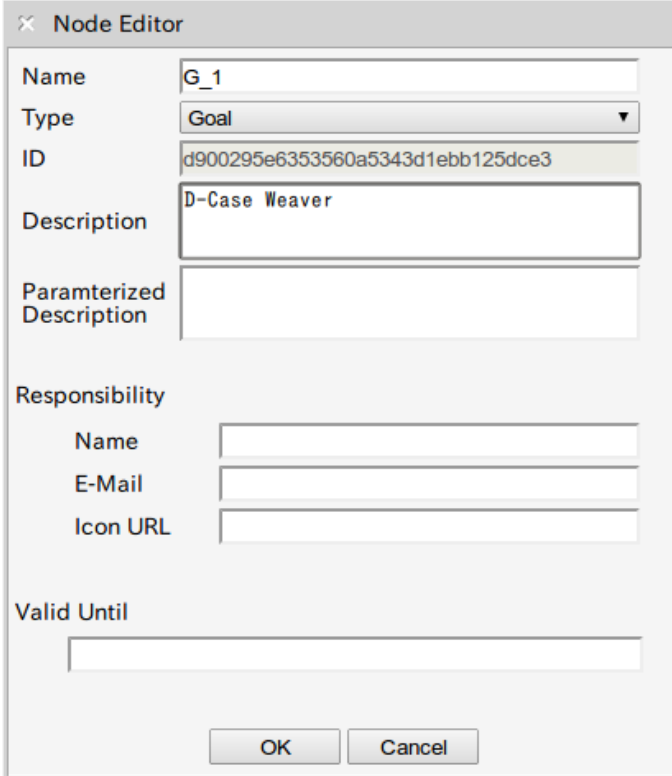


Editing a Node

1. To open the context menu, right-click on a node.
2. Select “Edit Node”. The Node Editor dialog will be displayed.



3. Edit the contents of the node, then, click the “OK” button.



The image shows a 'Node Editor' dialog box with the following fields:

- Name: G_1
- Type: Goal
- ID: d900295e6353560a5343d1ebb125dce3
- Description: D-Case Weaver
- Paramterized Description: (empty)
- Responsibility:
 - Name: (empty)
 - E-Mail: (empty)
 - Icon URL: (empty)
- Valid Until: (empty)

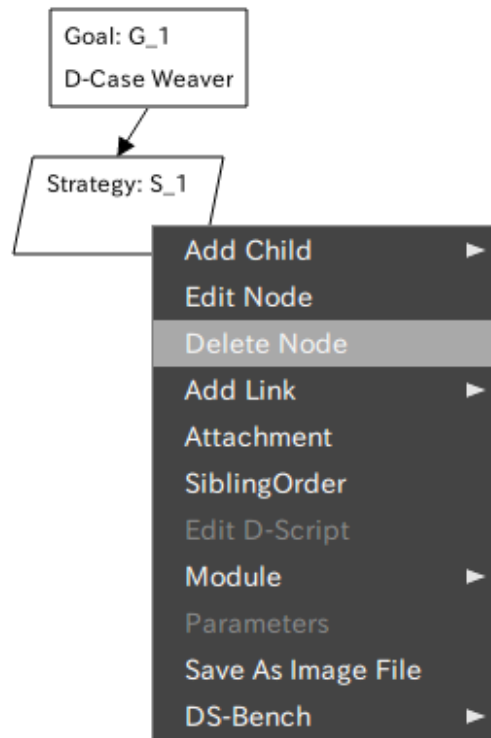
Buttons: OK, Cancel

4. The changes will be applied to the node.



Deleting a Node

1. To open the context menu, right-click on a node.
2. Select "Delete Node".

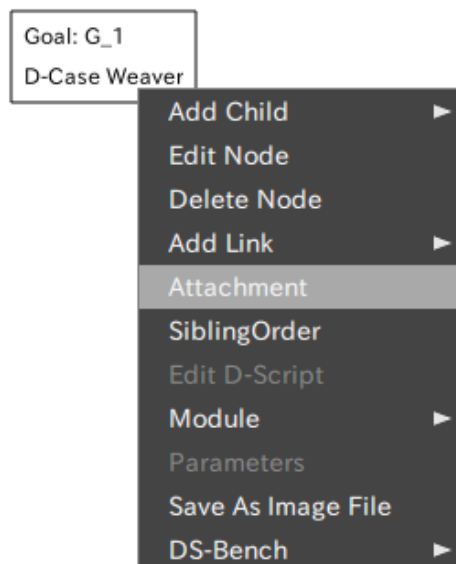


3. The node will be deleted.

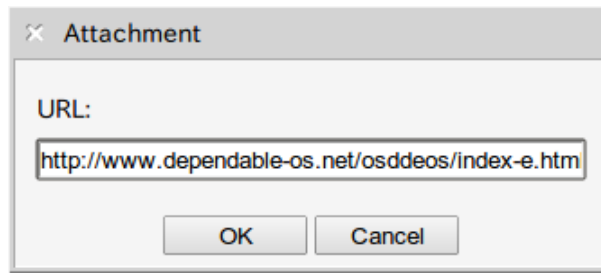


Attaching a URL to a Node

1. To open the context menu, right-click on a node.
2. Select "Attachment". The Attachment dialog will be displayed.



3. Enter a URL in the URL field in the dialog.



4. The URL will be set in the node and a clip icon will appear in the node.

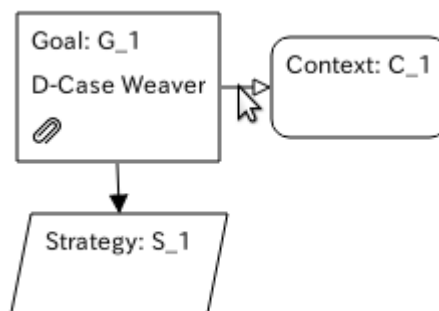


5. You can open the URL in a new window by clicking the clip icon.

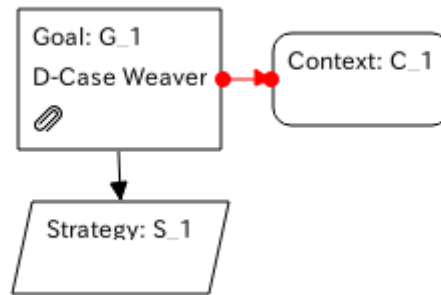


Editing a Link

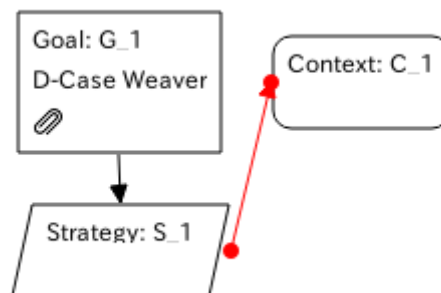
1. Click a link.



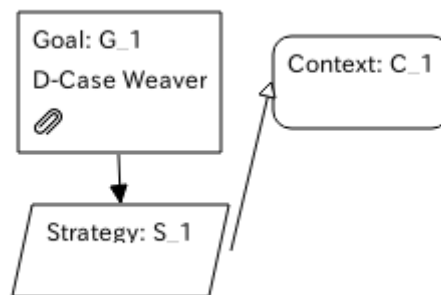
2. A red arrow will appear.



3. Drag the starting or ending point of the arrow and drop it on the node to be linked.

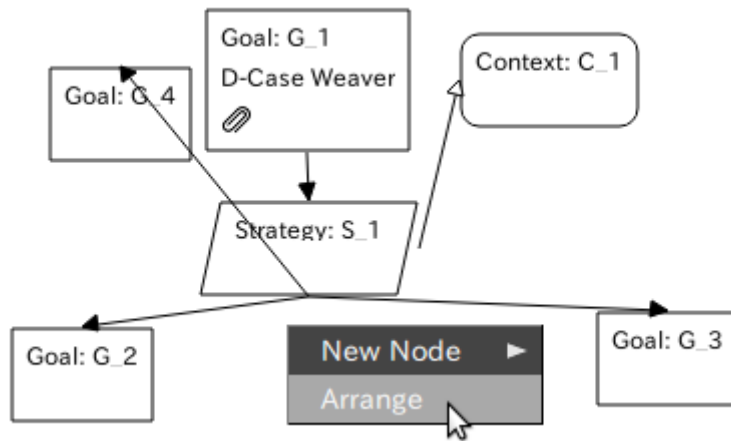


4. To apply the changes, click a place other than the starting and ending point of the arrow.

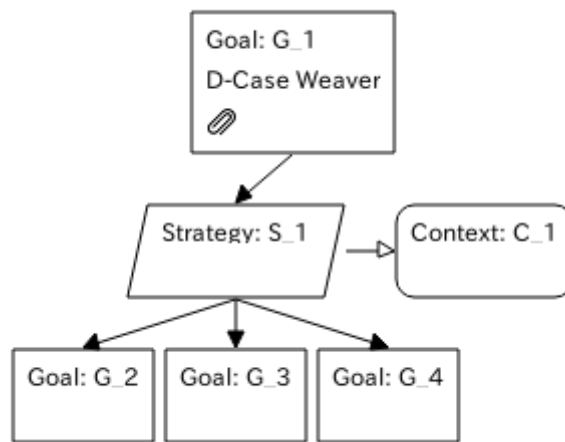


Arrange a Diagram

1. To open the context menu, right-click on a part of the drawing area other than nodes and links.
2. Select "Arrange".

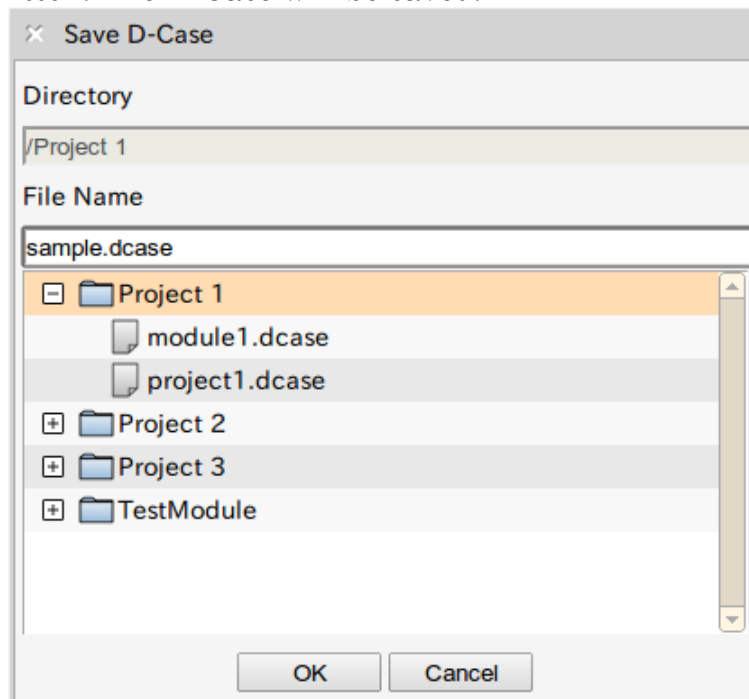


3. The diagram will be arranged.



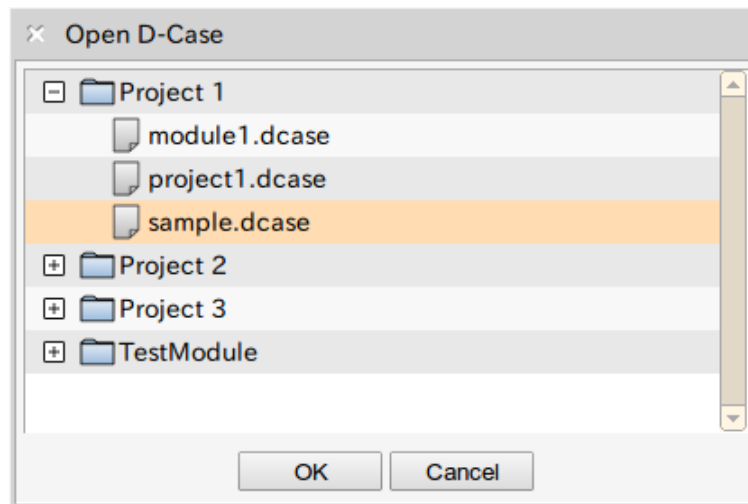
Saving a D-Case

1. Click the “Save” button on the tool bar. The Save D-Case dialog will be displayed.
2. Select a directory in which to save the D-Case and enter a file name.
3. Click the “OK” button. The D-Case will be saved.



Opening a saved D-Case

1. To open the Open D-Case dialog, click the “Open” button on the tool bar.
2. Select a D-Case file.
3. Click the “OK” button. The D-Case diagram will be displayed.



A3. dre.xsd

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns="http://www.dependable-os.net/dre" elementFormDefault="qualified"
targetNamespace="http://www.dependable-os.net/dre">
  <xs:element name="d-script">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="full-name" type="xs:string" maxOccurs="1" minOccurs="1"/>
        <xs:element name="values" maxOccurs="1" minOccurs="1">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="value" type="ValueType" maxOccurs="unbounded"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="ValueType">
    <xs:simpleContent>
      <xs:extension base="xs:string">
        <xs:attribute name="name" type="xs:string" use="required"/>
      </xs:extension>
    </xs:simpleContent>
  </xs:complexType>
</xs:schema>
```



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