OVERVIEW

Trace Analysis section of inteGREAT4TFS is the module that is used to manage traceability between Work Items. This guide demonstrates how to use the Trace Analysis module in inteGREAT4TFS.

KEY TAKEAWAYS

Individuals will learn how to perform the following tasks from this tutorial:

- Invoke the module
- User Interface of the module
- Creating a new Intersection Traceability Matrix
- Opening an existing Intersection Matrix
- Editing an Intersection Matrix
- Editing Work Items
- Creating a new Horizontal Traceability Matrix
- Exporting the Traceability Matrix to Excel
The Trace Analysis’ user interface can be broadly divided into two sections as highlighted in the following image:

1. Folder Explorer
2. Traceability section
**FOLDER EXPLORER**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New</strong></td>
<td>Used to create folders and new Traceability files</td>
</tr>
<tr>
<td><strong>Refresh</strong></td>
<td>Refreshes the traceability list</td>
</tr>
<tr>
<td><strong>Traceability (List)</strong></td>
<td>Shows the list of traceability files created so far</td>
</tr>
</tbody>
</table>
### Traceability Section

The image shows a Requirement Traceability Matrix with the following key elements:

- **Row Name**: Name of the Row query/Work Item selected while elaborating the traceability.
- **Column Query Name**: Name of the Column query/Work Item selected while elaborating the traceability.
- **Linked**: Shows an arrow if a relationship exists between the particular Work Item and the Work Items of the other query.
- **Covered**: Shows the number of relationships (arrows in the grid) for a particular Work Item.
- **Matrix Area showing Relations**: Shows a grid of cells. The intersection cells of unrelated Work Items are shown empty while those of related Work Items shows the relation arrow.
- **State Property**: State property of the Work Item.
- **Mini Toolbar**: Contains general options to tweak the matrix.

A screenshot further illustrates the matrix with a grid layout and various cells marked with arrows indicating the relationships between Work Items.
MINI TOOLBAR

Export to Excel | 100% | States On

- Export to Excel: Used to export the Traceability matrix to an Excel file
- Zoom Level: Shows the current zoom level of the grid
- Zoom Controller: Used to set the zoom level of the grid
- State Property Toggle option: Makes State Property appear or hide on the grid
- Full Screen Mode: Used to switch to Full Screen Mode

STATE PROPERTY LEGEND

The state property of the Work Items is shown with the help of relevant icons. The following table sums up the legends used.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Work Item State</th>
</tr>
</thead>
<tbody>
<tr>
<td>🟢</td>
<td>Approved, Committed, In Progress, Ready</td>
</tr>
<tr>
<td>🟤</td>
<td>New, Proposed, Active, To-do, Design, Open</td>
</tr>
<tr>
<td>🟠</td>
<td>Done, Resolved, Closed, Removed</td>
</tr>
</tbody>
</table>

WORK ITEM TYPE LEGEND

The Work Item Type is shown with a colored bar against the name of the Work Item.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Work Item Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>🟩</td>
<td>Feature</td>
</tr>
<tr>
<td>🟤</td>
<td>Requirement, Product Backlog Item, User Story</td>
</tr>
<tr>
<td>🟠</td>
<td>Bug</td>
</tr>
<tr>
<td>🟣</td>
<td>Task</td>
</tr>
<tr>
<td>🟡</td>
<td>Epic</td>
</tr>
</tbody>
</table>
The relations between Work Items are shown with an arrow in the intersection cell.

All types of relationships are grouped into three link types. The following table sums up the legends used.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Relation Link Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Network" /></td>
<td>Network</td>
</tr>
<tr>
<td><img src="image" alt="Dependent" /></td>
<td>Dependent</td>
</tr>
<tr>
<td><img src="image" alt="Tree" /></td>
<td>Tree</td>
</tr>
</tbody>
</table>
INVOKING THE MODULE

In case another module is selected, user can invoke Trace Analysis by clicking on Trace Analysis option (below the Team Project Name).

The landing page of Trace Analysis module is displayed.
CREATING A NEW TRACEABILITY MATRIX

- Creating a new traceability is the first step in viewing and managing Traceability Matrices in inteGREAT4TFS
- This step leads to the Traceability Editor page. The traceability is not actually created until the selection criterion is set on the editor page.

STEP 1: CREATING AN INTERSECTION MATRIX

1. Click the **New** option in the Folder Explorer.

![Folder Explorer screenshot showing the New option selected for Traceability]
2. Select **Traceability** option from the pop-up menu.

3. Enter a suitable name for the traceability and click the **OK** Button.
The traceability is created and the user is taken to the Traceability Editor page.

**STEP 2: SELECTING THE INTERSECTION MATRIX**

- This step involves selecting the desired query in the Intersection Matrix section of Toolbar.
• Selecting the relevant query makes the corresponding options appear below the toolbar.

• Step 3 involves the configuration of relevant steps to generate the Intersection Matrix (using the selected method).

**STEP 3: INTERSECTION MATRIX USING WORK ITEM**

1. Select the relevant Iteration Path.
2. Select the relevant **Area Path**.

3. Select the desired **Row Work Item Type** (i.e. the Work Item type that is to be shown in rows of the matrix).
4. Select the desired **Column Work Item Type** (The Work Item that is to be shown in columns of the matrix).

5. Click the **Run Button**.
The Intersection Traceability Matrix is generated and displayed.
1. Select the Query Input Type (if not already selected).

2. Select the desired Row Query.
3. Select the desired **Column Query**.

4. Once the **Row** and **Column queries** have been selected, the next step is the same as **step 5** in Traceability, using Work Item Type.
OPENING AN EDITING AN EXISTING TRACEABILITY MATRIX

1. Click the name of the desired Traceability Matrix in the Folder Explorer.

The selected traceability matrix is opened.
2. Click the Editor option.

The matrix is opened in editable mode.
3. Now edit the traceability as desired and click the **Save** button to save the updates in the query.

**ADDING RELATIONS IN INTERSECTION MATRIX**

Users can add or delete relation (between Work Items) directly on Traceability Matrix. These relations are saved on TFS Server.

1. Determine the intersection cell for creating relationship between corresponding Work Items.
2. Place the mouse over the intersection cell.

The cell will show a + sign, as displayed in the image.
3. Click the + sign.
4. Select the desired type of relationship.
5. Click the **OK** Button.
The relation is created between the two Work Items.
DELETING RELATIONS IN TRACEABILITY MATRIX

1. Determine the intersection cell for deleting relationship between corresponding Work Items.
2. Place the mouse over the intersection cell.

The cell will show a – sign, as displayed in the image.
3. Click the - sign.
4. Click the Ok Button.
The relation is deleted.

To verify that these relations have been deleted, users can view the Work Item details using the Edit option as shown in Editing Work Items topic.
EDITING WORK ITEMS

Using this option, users can edit Work Items directly from the Traceability Matrix.

1. Place the mouse over the desired Work Item.
2. Click the **Edit** button in the popup window.
3. Edit the desired properties of the Work Item and click the **Save** Button.
4. Close the popup window.
CREATING HORIZONTAL MATRIX

1. Follow the instructions in **Step 1: Creating a new Traceability Matrix** to create the matrix
2. On the Traceability Editor page; click the **Custom** option.

3. Select the top level Work Item.
4. Similarly, select the relevant linked Work Items (if desired).

These Work Items indicate the type of Work Items linked with their upper level Work Item. In this example, we selected Requirement as the top level Work Item and Bug as the linked Work Item. This means that the first column in the matrix will show a list of Requirement Work Items and the second column will show a list of Bug Work Items that are linked to a Requirement Work Item.

Note: This step is optional.
5. Click the **Run** Button in the Toolbar.

The **Horizontal Matrix** is generated.
This option is used to create an Excel file from the desired traceability matrix. Once created, the Excel file can be shared with those stakeholders who currently do not use inteGREAT4TFS.

1. Open the desired Traceability Matrix.
2. Click the **Export To Excel** option in the Mini Toolbar.
The Excel file is created.
The file can now be opened in MS-Excel.