<table>
<thead>
<tr>
<th>Rev. #</th>
<th>Date</th>
<th>Details</th>
<th>Revised By</th>
<th>Approved By</th>
</tr>
</thead>
</table>
| 3.0   | 3rd February, 2023 | • Added support for Requirement WI  
        • Added Build Number property for Test Point, Test Run, and Test Result  
        • Added support for Capture user actions, Record Screen, and Record Screen under Result attachment property in Test Result Virtual WI | Syed Hammad     | Hira Sharif     |
| 2.2   | 26th August, 2022  | • Added support for multiple comments and attachments in Test Parameter under Test Result Virtual Work Item.  
        • Added Test Parameter and Iteration field for Test Step Run Virtual Work Item. | Syed Hammad     | Hira Sharif     |
| 2.1   | 2nd March, 2022    | • Technote Updated for Test Point WI  
        • Images Updated  
        • Virtual Work item Properties updated | Syed Hammad     | Hira Sharif     |
| 2.0   | 17th December, 2021| • Design/Formatting of the document has been changed                   | Syed Hammad     | Hira Sharif     |
| 1.0   | 4th November, 2020 | • Document created                                                      | Syed Hammad     | Hira Sharif     |
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**INTRODUCTION**

In the simplest form, the test case management software consolidates several aspects of testing into one place. This reduces the testing effort, improves resource utilization, speed, and quality of the tests.

Most often, the tools differ in their scope, ability, effectiveness, flexibility, and more. While some organizations settle on one comprehensive solution, others opt to use a combination of different tools.

The normal testing hierarchy supported by Azure DevOps is as following:

Whereas organizations normally have a more comprehensive Test Case Management as illustrated below:

The Requirement work item will be available when Requirement suite is created from the Test Hub.

**Note:** The Requirement work item is supported in Trace Analysis.
WHAT MODERN REQUIREMENTS4DEVOPS HAS TO OFFER?

In order to fill the gap between what test strategy companies usually follow and what Azure DevOps has to offer, Modern Requirements4DevOps now offers Virtual work items.

In Azure DevOps, the data for these virtual work items can be fetched from TFS using the following tabs:

**TEST POINT**

![Image of Test Point]

**TEST RUN**

![Image of Test Run]
These Virtual work items are linked with existing work items using Virtual Link.
## VIRTUAL WORK ITEMS PROPERTIES

### Properties for Test Point

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Config Name</th>
<th>Test Case ID</th>
<th>Suite ID</th>
<th>Plan ID</th>
<th>Tester</th>
<th>Last Updated By</th>
<th>Is Automated</th>
<th>Build Number</th>
</tr>
</thead>
</table>

### Properties of Test Run

<table>
<thead>
<tr>
<th>Complete Date</th>
<th>Start Date</th>
<th>Owner</th>
<th>Unanalyzed Test</th>
<th>Total Results</th>
<th>Pass Test</th>
<th>Is Automated</th>
<th>Failed Tests</th>
<th>Not Applicable Test</th>
<th>Incomplete Tests</th>
<th>Total Test</th>
<th>Build Number</th>
</tr>
</thead>
</table>

### Properties of Test Result

<table>
<thead>
<tr>
<th>Plan ID</th>
<th>Suite ID</th>
<th>Test Case ID</th>
<th>Duration</th>
<th>Last Updated By</th>
<th>Outcome</th>
<th>Run By</th>
<th>Config name (Configuration)</th>
<th>Completed Date</th>
<th>Pass Test</th>
<th>Total Test Steps</th>
<th>Failed Tests</th>
<th>Unspecified Tests</th>
<th>Test Parameter</th>
<th>Details</th>
<th>Detail Comment</th>
<th>Result Attachment</th>
<th>Build Number</th>
</tr>
</thead>
</table>

### Properties for Test Step Run

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Action</th>
<th>Expected Result</th>
<th>Completed Date</th>
<th>Iteration</th>
<th>Test Parameter</th>
<th>Comment</th>
<th>Attachment</th>
</tr>
</thead>
</table>

**Note:** Click on the links to view details on Test Parameter, Details, Detail Comment, Result Attachment, Comment and Attachment.
Support for Attachment and Comments Field

Attachments and Comments are now supported in Trace Analysis and Smart Report module (Trace Analysis, Test Plan Hub, Queries tab and Smart Doc)

- Comment added on run test case is mapped to “Detail Comments” field.
- Attachment added on run test case is mapped to “Result Attachment” field.

Comment and attachment added from test run are mapped in test results virtual work item.
Smart Report Configuration:

Output:

Smart report

<table>
<thead>
<tr>
<th>Plan Id</th>
<th>Suite Id</th>
<th>Test Case Id</th>
<th>Config Name</th>
<th>Outcome</th>
<th>Duration</th>
<th>Completed Date</th>
<th>Detail Comments</th>
<th>Result Attachment</th>
</tr>
</thead>
<tbody>
<tr>
<td>20675</td>
<td>21973</td>
<td>3060</td>
<td>Windows 10</td>
<td>Passed</td>
<td>52763</td>
<td>5/5/2021 8:26:51 AM</td>
<td>This test case is passed</td>
<td>[loginoggleslog]</td>
</tr>
</tbody>
</table>
- Comments added from update analysis will be mapped to "Comment" field in test results.

Comment added from update analysis is added to the "Comment" field in Test Results.
- Comments added on fail steps on run test case are mapped to the “Comment” field in Test Step Run.

Comment for fail step added in “Comment” field of Test Step Run in Trace Analysis and Smart Report.

- Configuration is mapped to “Config Name” field in Test Results.
Configuration can be seen mapped below in test results.

<table>
<thead>
<tr>
<th>Type</th>
<th>ID</th>
<th>Title</th>
<th>Module</th>
<th>Result</th>
<th>Result Attachment</th>
</tr>
</thead>
<tbody>
<tr>
<td>100000</td>
<td>Run ID: 11150 : u1 : Manual / Online Payment Verification Function...</td>
<td>Option 1 to 4 are...</td>
<td>Windows 10</td>
<td><img src="image" alt="Windows 10" /></td>
<td></td>
</tr>
<tr>
<td>100000</td>
<td>Run ID: 11150 : u1 : Manual / Online Payment Verification Function...</td>
<td>Raw it is functional</td>
<td>Windows 10</td>
<td><img src="image" alt="Windows 10" /></td>
<td></td>
</tr>
<tr>
<td>100000</td>
<td>Run ID: 11150 : u1 : Manual / Online Payment Verification Function...</td>
<td>Windows 10</td>
<td><img src="image" alt="Windows 10" /></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100000</td>
<td>Run ID: 11150 : u1 : Manual / Online Payment Verification Function...</td>
<td>Windows 10</td>
<td><img src="image" alt="Windows 10" /></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Captured screenshot** from Test Run are mapped as an attachment in Test Step Run virtual work item.

User can take screenshot from the **Capture screenshot** option as shown in the image below.

The captured screenshot can be seen in ADO mapped as an attachment. Users can download the captured screenshot by clicking on it.
The captured screenshot can be seen as an attachment in the Smart Report. Users can download the attachment by clicking on it.

The options Capture user actions, Record Screen, and Record screen with audio are supported in the Test Result virtual work item. Once a user adds these attachments from ADO, they will be visible in the Smart Report/Trace Analysis section of the Test Result work item under the "Result attachment" property.
For multiple iterations, **Comments** and **Attachments** added in each iteration is shown. On run test case, if there are multiple iterations, user can add comments in each iteration which can be seen by adding “**Details**” field from column options in Trace analysis and through “**Report Designer**” in Smart Report.

**ADO:**

![Image of ADO interface]

Comments and attachments added against each iteration can be seen in the “Summary” section.
Trace Analysis:

Comments and Attachments added by the user against each of the iterations will be visible in the Traceability Matrix.

<table>
<thead>
<tr>
<th>Traceability Matrix</th>
<th>Editor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Results(6)

<table>
<thead>
<tr>
<th>VLink</th>
<th>Test Case ID</th>
<th>Duration</th>
<th>Status</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>100000</td>
<td>Run 265 - 139964 : Requirement</td>
<td>Open</td>
<td>Iteration 1 Failed, Duration: 00:00:05:01</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100000</td>
<td>Run 246 - 139964 : Requirement</td>
<td>Open</td>
<td>Iteration 2 Failed, Duration: 00:00:09:33</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Smart Report:

By adding “Details” field from the column options, comments and attachments for each iteration can be seen in “Report Designer” in Smart Report.
**TEST PARAMETER**

Parameter added in Test case steps can be seen by adding “**Test Parameter**” field from column options in Trace analysis and through “Report Designer” in Smart Report.

**ADO:**

![Test Case Steps Example](image)

**Trace Analysis:**

By selecting the “**Test Parameter**” field from column options, user can see “Parameters” column in Traceability Matrix.

<table>
<thead>
<tr>
<th>Link Type</th>
<th>ID</th>
<th>Title</th>
<th>State</th>
<th>Test Parameters</th>
<th>Iteration</th>
</tr>
</thead>
<tbody>
<tr>
<td>vLink</td>
<td>1</td>
<td>Run 265 - 139964 : Requirement (Manual)</td>
<td>open</td>
<td>page = First</td>
<td>1</td>
</tr>
<tr>
<td>vLink</td>
<td>2</td>
<td>Run 265 - 139964 : Requirement (Manual)</td>
<td>open</td>
<td>field = One</td>
<td>1</td>
</tr>
<tr>
<td>vLink</td>
<td>1</td>
<td>Run 265 - 139964 : Requirement (Manual)</td>
<td>open</td>
<td>page = Second</td>
<td>2</td>
</tr>
<tr>
<td>vLink</td>
<td>2</td>
<td>Run 265 - 139964 : Requirement (Manual)</td>
<td>open</td>
<td>field = Two</td>
<td>2</td>
</tr>
</tbody>
</table>
Smart Report:

By selecting the “Test Parameter” field from column options, user can see “Parameters” column in Smart Report.
LINKING OF VIRTUAL WORK ITEMS

In Smart Report, the virtual linking is automatically applied. However, in Trace Analysis you need to manually select the Virtual Link option to link the Virtual work items as shown in the image below:
HIERARCHY

The hierarchy below can be created and shown in **Smart Report** as well as while working in **Traceability module**:

**Test Plan vs Test Suite vs Test Case/Test Point vs Test Run vs Test Result vs Test Step Run vs Bugs**

Same hierarchy can be created while showing the work in **Trace Analysis**

PATHS TO GENERATE OUTPUT

Following are the different paths you can define to generate the output:

- Test plan vs Test suite
- Test suite vs Test case
- Test plan vs Test suite vs Test case
- Test run
- Test run vs Test result
- Test run vs Test result vs Test step run
- Test run vs Test result vs Bugs
- Test run vs Test result vs Test step run vs Bugs
- Test run vs Test result vs Bugs vs Test step run
- Test suite vs Test case vs Test run vs Test result vs Test step run
- Test plan vs Test suite vs Test run vs Test result vs Bugs
- Test suite vs Test case vs Test run vs Test result vs Test step run vs Bugs
- Test plan vs Test suite vs Test run vs Test result vs Test step run vs Bugs
- Test plan vs Requirement/PBI/User Story vs Test Case vs Test Run vs Test Result vs Test Step Run Vs Bugs
USABILITY OF THE VIRTUAL WORK ITEMS

These work items can be used in the following modules/sections:

SMART REPORT

Virtual work items can be used in Smart Report available under the Queries tab, Test Hub and Smart Docs.
TRACE ANALYSIS

In the Traceability module, these virtual items can be used to create a horizontal matrix using:

- Work item type
- Query type

USING VIRTUAL WORK ITEMS TO CREATE A HORIZONTAL MATRIX USING QUERY TYPE

USING VIRTUAL WORK ITEMS TO CREATE A HORIZONTAL MATRIX USING WORK ITEM TYPE
CREATING TEST PLAN / TEST SUITE FROM TEST HUB IN AZURE DEVOPS

Test Plan: Test Plan-01

Test Suites
- 333172: As a user I want to log into my account (ID: 333179)
  - User registration module is working without a critical issue
  - User registration is working well for Continental US and Hawaii addresses

Test Cases (2 items)

<table>
<thead>
<tr>
<th>Title</th>
<th>Order</th>
<th>Test Case Id</th>
<th>Assigned To</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>133153</td>
<td>Syed Said</td>
<td>Design</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>133178</td>
<td>Syed Said</td>
<td>Design</td>
</tr>
</tbody>
</table>
LIMITATIONS

SMART REPORT | QUERIES TAB :

- The linking of virtual work items is supported only when the report is generated from the toolbar.
- In Smart Report (Queries Tab), all the sections should be hierarchical except for the ones that do not have any subordinates and, for these, the hierarchy would be false.

- If you have work items other than Test Plan, Test Suite and Test Case, you cannot generate a test case API. If other work items are also a part of the query then the smart report will be generated on its normal functionality.

SMART REPORT | SMART DOCS MODULE :

- While using Smart Report in Smart Docs, the default section should have work item type “Any” or root work item type.

- The Report will only be generated on adding Test Plan / Test Suite / Test Case work items from Insert Work Item option. These work items are to be created from Test Plan Hub.