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TEAMCENTER MOBILITY

iPad Installation Instructions

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iPad Installation Instructions

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Teamcenter configuration

Requirements

- Teamcenter 8.3 or later, including Teamcenter 9 and 9.1.
- A four-tier Web server accessible by the devices running the app. Both the Web tier and the FMS server must be accessible. If the iPad accesses Teamcenter from outside the firewall, these two servers must be accessible outside the firewall.
- Web tier SOAP/WSDL solution enabled (see [Adding the WSDL solution: J2EE](#)).

Teamcenter 8.3.1.1 or later

All Teamcenter supported application servers are supported.

Teamcenter 8.3 to 8.3.1.1

The following application servers are supported:

- JBoss 4.2.2GA
- IIS 7.0 – localization is not supported

The following application servers are not supported OOTB:

- WebLogic
- Sun Java System Application Server
- WebSphere

NOTE: To use these servers for testing, see [Teamcenter 8.3 to 8.3.1.1 workarounds for unsupported J2EE servers](#).

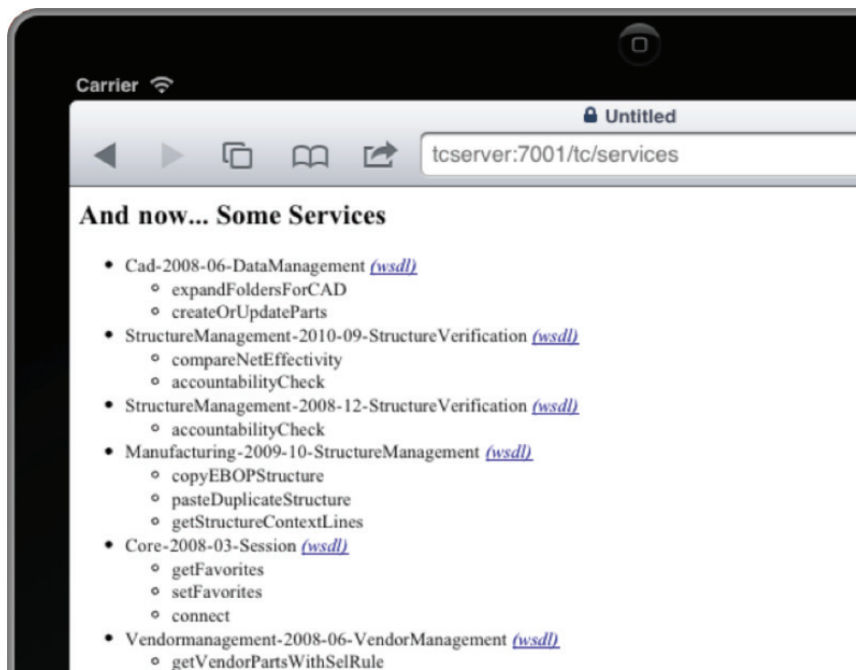
Verifying Teamcenter server is configured correctly

SOAP/WSDL solution

To verify that the SOAP/WSDL solution is installed correctly for a J2EE-based server, access:

`http://server:port/path-to-tc/services` (for example, `http://tcserver:7001/tc/services`)

- If several services are listed, as shown in the following figure, the solution is installed correctly.



- If only two services are listed, the solution is not installed.

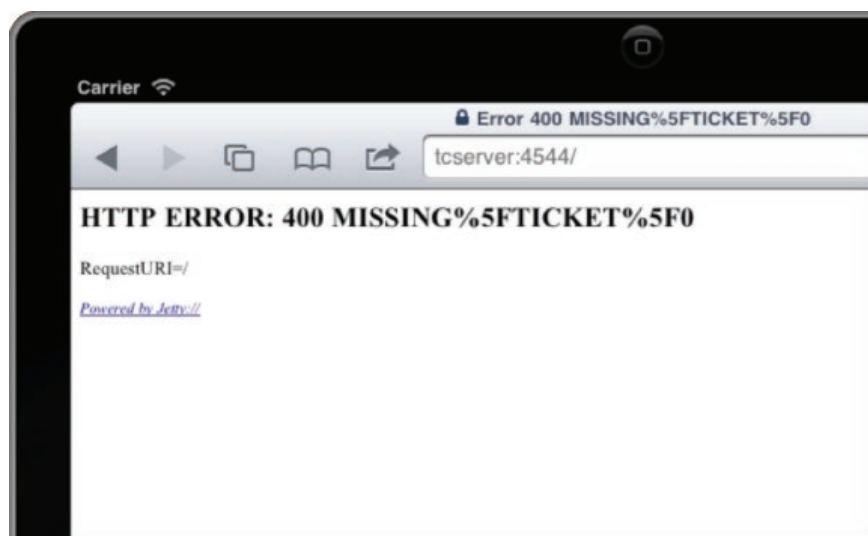
To install the services, see **Adding the WSDL solution: J2EE**.

NOTE: This solution is only required for a J2EE-based server; .NET-based servers include the solution by default.

URL for FMS

To verify that FMS is accessible from the iPad:

1. Determine the **Fms_BootStrap_Urls** preference in Teamcenter, as described in **FMS configuration**.
2. On an iPad, open Safari, and browse to the URL shown in the preference.
An error message appears.



If the expected error message is not displayed, the FMS server is not accessible from the iPad.

To adjust the FMS server to be accessible from the iPad, see **FMS configuration**.

Supported SSO service configurations

The following two SSO service configurations are supported:

- Direct LDAP authentication, where the SSO Service is hooked into an LDAP provider, is supported.
- HTTP authentication, where the SSO Service is protected behind a web gateway such as a reverse proxy, is supported with the following conditions. Only HTTP 401 authentication with basic, digest, or NTLM schemes are supported. 401 authentication with the negotiate scheme and form-based authentication are not supported.

Teamcenter reporting and analytics

To verify that Teamcenter reporting and analytics is accessible from the iPad, load the Reporting and Analytics BuildNPlay application on the iPad using the following URL format:

method://server:port/context/BuildNPlay

The method, server, port and context can be found in the **TC_RA_server_parameters** preference. If the Reporting and Analytics BuildNPlay application login window loads successfully on the iPad, Reporting and Analytics is accessible.

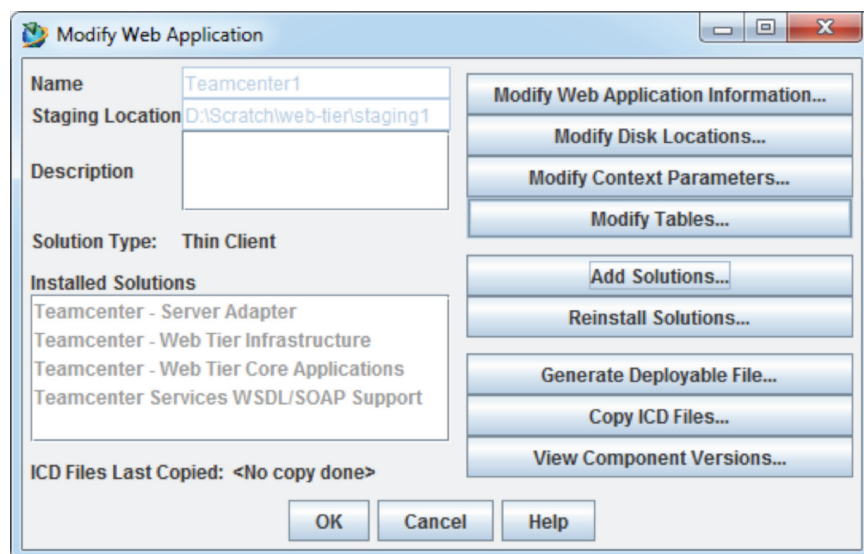
Users defined in Reporting and Analytics need to use the same credentials as in Teamcenter. SSO support for Reporting and Analytics and Teamcenter Mobility is not available at this time.

Adding the WSDL solution: J2EE

If you are using a J2EE Web tier, the **Teamcenter Services WSDL/SOAP Support** solution must be added to the Web application.

To enable this solution, see the appropriate Teamcenter server installation guide for your site.

The generated EAR file must include the **Installed Solutions** as shown.



Teamcenter 8.3 to 8.3.1.1 workarounds for unsupported J2EE servers

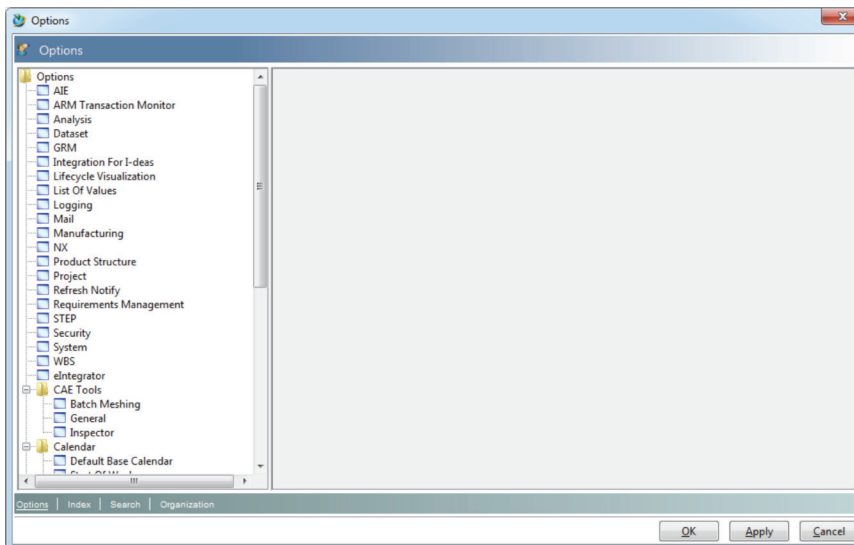
To install the workaround for testing purposes, perform these additional steps:

1. Extract the **xercesImpl.jar** file from the **soa_client.zip** file that comes with the Teamcenter installation disks/ZIP files (**soa_client.zip\soa-client\javallibs\xercesImpl.jar**).
2. Open the **tc.ear** package in a ZIP program like 7-zip.
3. Open the **tc.war** file located in the **tc.ear** package.
4. Navigate to the **WEB-INF/lib** directory and copy the **xercesImpl.jar** file to that directory.
5. Close the windows, accepting any prompts to update the files.

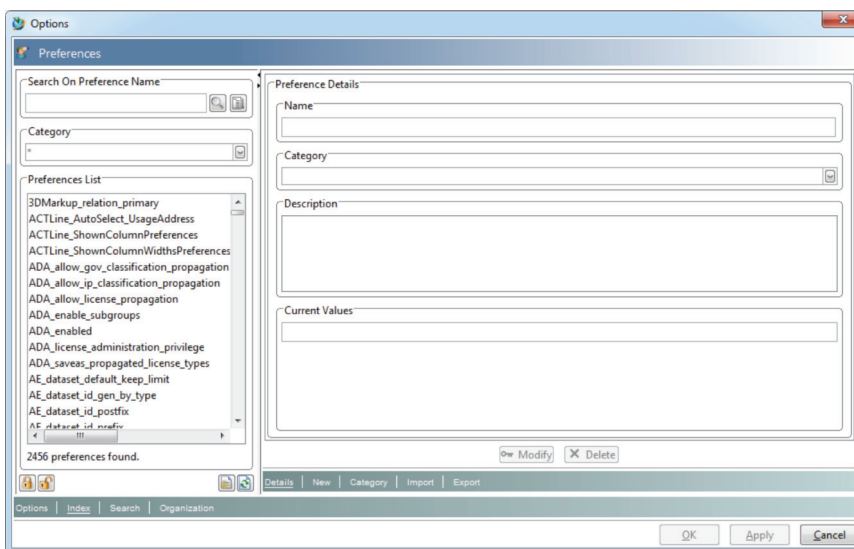
NOTE: Do not use this workaround on a production server; use the Teamcenter 8.3.1.1 patch.

FMS configuration

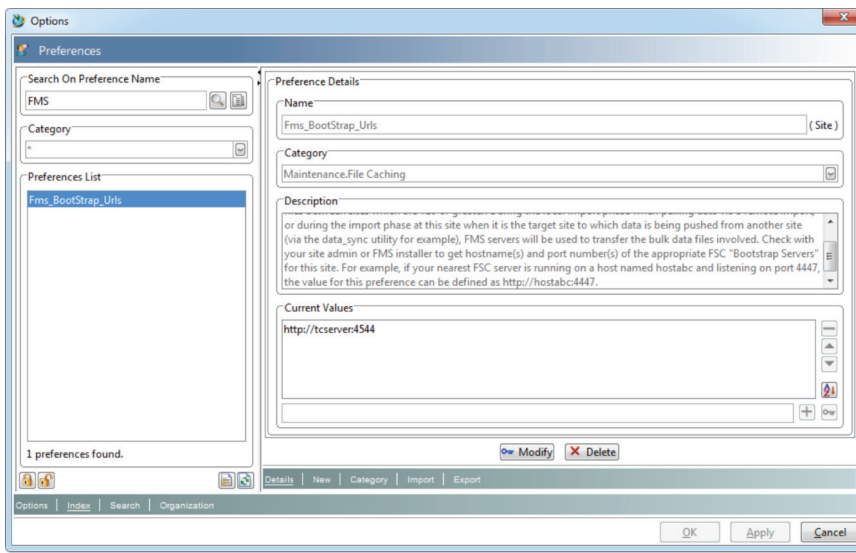
1. Start the Teamcenter rich client and log in as a user with DBA privilege.
2. Choose **Edit > Options**.
The **Options** dialog box appears.





3. Click **Index**.



4. Find the **Fms_BootStrap_Urls** property and change the URL to one accessible by the iPad, such as an IP address instead of a name.



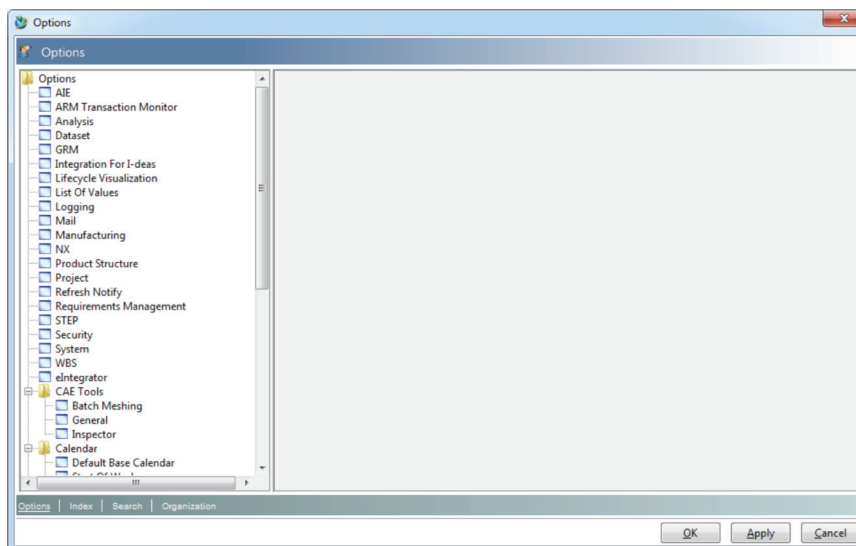
5. Click  or  to add/change the value, and then click **Modify** to apply the change to the property.
6. Click **Cancel** to close the dialog box.
7. If any iPad clients are currently connected to Teamcenter, they may require a logout and login to see the change.

Role-based app customization

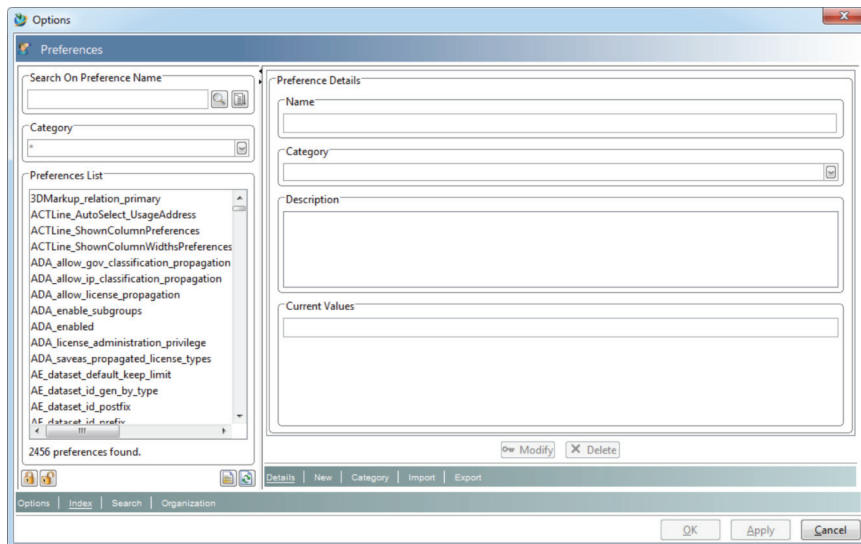
The Teamcenter Mobility app uses the Teamcenter **iPad_custom_attributes** preference to customize the additional information displayed in the **Data pane**. The attribute display can be configured for the user, role, group or site.

To set the **iPad_custom_attributes** preference:

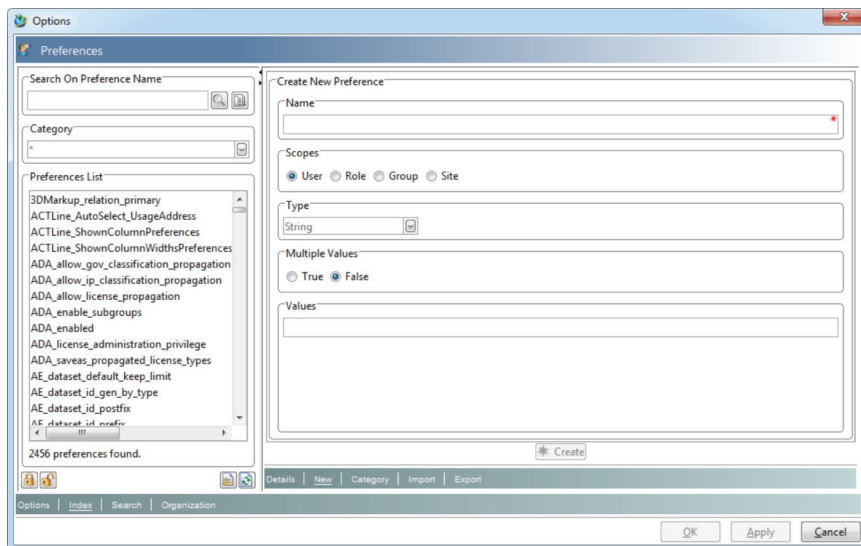
1. Log in to the Teamcenter rich client.
To set a site preference, you must have DBA privilege.
To set a role or group preference, you must be a group administrator.
2. Choose **Edit > Options** to bring up the **Options** dialog box.




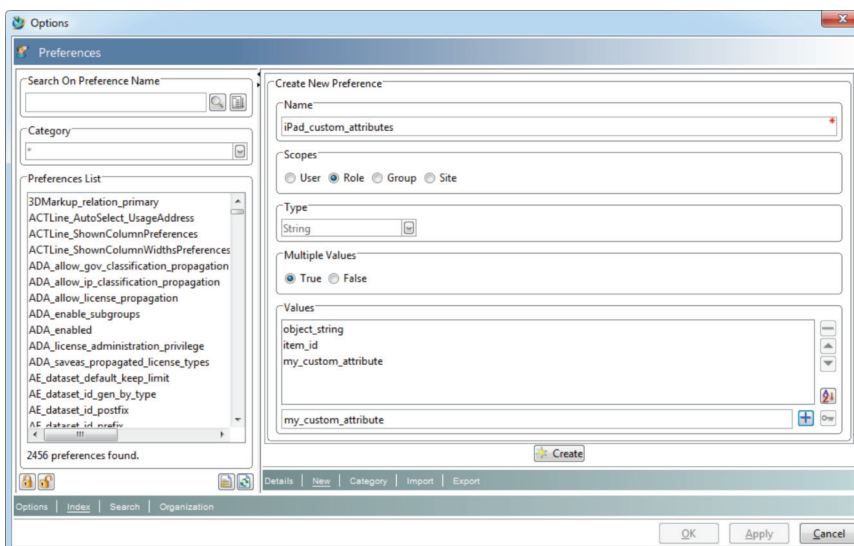
3. Click Index.



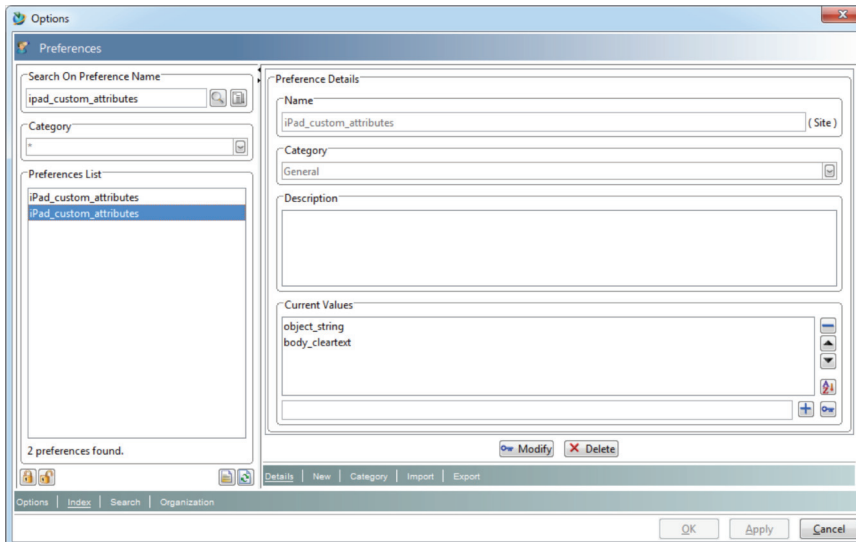
4. Click New.



5. Type `iPad_custom_attributes` in the **Name** box.
6. Select the appropriate scope.
 - Select **User** to make the preference valid for the currently logged-in user. Only the current user can view the specified attributes in the **Custom Attributes** dialog box.
 - Select **Group** or **Role** to make the preference valid for the group or role of the current user. Any member of the group or role can view the desired attributes in the **Custom Attributes**.
 - Select **Site** to make the preference valid for all users.
7. Set **Multiple Values** to **True**.
8. For each attribute you want to display in the **Custom Attributes** dialog box, type the name in the text box under **Values** and click  to add the attribute to the preference. Standard and custom attributes can be entered.



9. To set the preference, click **Create**.



BOM line attributes display

When viewing structure, BOM line attributes can be viewed in the **Data pane**. The BOM line attributes to display are controlled by the Teamcenter **iPad_custom_bomline_attributes** preference.

To set the **iPad_custom_bomline_attributes** preference, follow the same steps as in **Role-based app customization**, substituting **iPad_custom_bomline_attributes** for the preference name and using the desired BOM line attributes as the values.

Folder for change alerts

To display a count of changes as a badge in the Teamcenter Mobility app, use the Teamcenter **iPad_ChangeFolderNameForBadge** preference to select the change folder to check. The folder can be configured for the user, role, group or site.

To set the **iPad_ChangeFolderNameForBadge** preference:

1. Log in to the Teamcenter rich client.
To set a site preference, you must have DBA privilege.
To set a role or group preference, you must be a group administrator.
2. Choose **Edit > Options** to display the **Options** dialog box.
3. Click **Index**.
4. Click **New**.
5. Type **iPad_ChangeFolderNameForBadge** in the **Name** box.
6. Select the appropriate scope.
 - Select **User** to make the preference valid for the currently logged-in user.
Only the current users' client will use the specified folder to set the badge value.
 - Select **Group** or **Role** to make the preference valid for the group or role of the current user.
Any client of a member of the group or role will use the specified folder to set the badge value.
 - Select **Site** to make the preference valid for all users.
7. Type the name of the change folder in the text box under **Values**. The value entered should match one of the change folders available to the user.
8. To set the preference, click **Create**.

When the **iPad_ChangeFolderNameForBadge** preference is set, the Teamcenter Mobility app displays a badge if there are any issues in that change folder.

Links

The link types available to a user when creating a link are customizable through the Teamcenter **iPad_RelationshipActions** preference. The available types can be configured for the user, role, group or site.

To set the **iPad_RelationshipActions** preference:

1. Log in to the Teamcenter rich client.
To set a site preference, you must have DBA privilege.
To set a role or group preference, you must be a group administrator.
2. Choose **Edit > Options** to bring up the **Options** dialog box.
3. Click **Index**.
4. Click **New**.
5. Type **iPad_RelationshipActions** in the **Name** box.
6. Select the appropriate scope.
 - Select **User** to make the types valid for the currently logged-in user.
Only the current user will be able to choose these types.
 - Select **Group** or **Role** to make the types valid for the group or role of the current user.
Any member of the group or role will be able to choose these types.
 - Select **Site** to make the preference valid for all users.
7. Set **Multiple Values** to **True**.
8. Type a link action. The format to use is:

Name/Source Types/Target Types/Relationship

- **Name:** The name of the type. This is displayed in the **Create Link** box.
- **Source Types:** A comma-separated list of valid source types.
- **Target Types:** A comma-separated list of valid target types.
- **Relationship:** The relationship used to link the selected source and target.

To disable all link types for a user, enter only the following value: **////**

For example, consider the following value:

Attach Markup/Document,Dataset/Dataset/TC_Derived

This describes an action that creates a **TC_Derived** relationship between a document or dataset and a dataset named **Attach Markup**.

9. To set the preference, click **Create**.

When the **iPad_RelationshipActions** preference is set, the Teamcenter Mobility app displays specified link types in the **Create Link** dialog box.

If the preference is not set, the default values are:

- **Markup to a Dataset/Dataset/Dataset/TC_Derived**
- **Reference to a Task/EPMTask/POM_object/root_reference_attachments**
- **Target to a Task/EPMTask/POM_object/root_target_attachments**
- **Impacted Item to a Change/GnChangeRequestRevision/ItemRevision/CMHasImpactedItem**
- **Problem Item to a Change/ChangeItemRevision/ItemRevision/CMHasProblemItem**
- **Reference Item to a Change/ChangeItemRevision/WorkspaceObject/CMReferences**
- **Problem Implemented by a CR/GnChangeRequestRevision/GnProblemReportRevision/CMImplements**
- **CR Implemented by a CN/GnChangeNoticeRevision/GnChangeRequestRevision/CMImplements**

Additional change folders

To support Classic Change items on the **Changes** tab, saved queries can be defined in the **iPad_AdditionalChangeFolderSavedSearches** preference. These saved queries will then be displayed as folders in the **Changes** tab.

To set the **iPad_AdditionalChangeFolderSavedSearches** preference, follow the same steps as in role-based customization, substituting **iPad_AdditionalChangeFolderSavedSearches** for the preference name and using the desired saved query names as the values.

Search preferences

In versions of Mobility prior to 3.2, search strings were wrapped with wildcards to allow for easier searching. In version 3.2 and later, Mobility respects the Teamcenter preferences that control both the wildcard characters that are used, and how those characters wrap the query string by default. The preference for setting the wildcard characters is **TC_pattern_match_style**. The preference for determining how queries are automatically wrapped is **search_automatic_wildcard**. To obtain the pre-3.2 Mobility functionality, this preference should be set to "3".

Server policies

Introduction

Server policies are special Teamcenter preferences that can be set up to enforce certain policies on the Teamcenter Mobility app. These policies cannot be changed or disabled by the user from within the app.

Logout when backgrounded

When the Boolean **iPad_ServerPolicy_LogoutWhenBackgrounded** preference is set to 1, it causes the app to log the user out whenever the app is backgrounded or closed (whenever the user presses the Home button on the iPad or uses the multiple finger gesture to close an app). There is a Logout When Backgrounded app preference that a user can change on the iPad, but the server policy overrides this app preference. If either the server preference or the app preference is set to on, it causes a logout on backgrounding.

Clear Cache on Logout

When the Boolean **iPad_ServerPolicy_ClearCacheOnLogout** preference is set to 1, it causes the app to clear the Offline Cache whenever the user logs out. There is a Clear Cache on Logout app preference that a user can change on the iPad, but the server policy overrides this app preference. If either the server preference or the app preference is set to on, it causes the cache to be cleared on logout.

Disable batch task completion

When the Boolean **iPad_ServerPolicy_DisableBatchTaskCompletion** preference is set to 1, it disables the button on the Tasks tab that accesses the Batch Complete feature.

Disable protected file export

The **iPad_ServerPolicy_DisableProtectedFileExport** multivalue preference can be set to a list of file extensions. The user is then unable to use the Open In and Save to Photo Album features when viewing any file with one of these extensions.

Enforce application version

The **iPad_ServerPolicy_EnforceApplicationVersion** preference can be set to a string value that is the minimum version of the Teamcenter Mobility app that should be allowed to connect to the server. For example, if the preference is set to 2.5.0, a user who has not updated the app from version 2.0.0 is prevented from connecting to the server and would receive a message upon login that tells them to update the app.

Disable reports

When the Boolean **iPad_ServerPolicy_DisableReports** preference is set to 1, it disables all Teamcenter reporting and analytics features within the app and hides the Reports tab.

Custom style sheets

Introduction

Teamcenter Mobility provides the ability to customize the display of the detail view by setting some server-side preferences. The style sheets are Extensible Stylesheet Language (XSL) files, which is a W3C standard. These XSL files are used to transform one XML document into another. This process is referred to as Extensible Stylesheet Language Transformation (XSLT). In this case, the input XML is created by the application and represents the data that is to be displayed, and the output XML is an XHTML string that represents the final detail view that is displayed to the user.

Preferences

The two server-side preferences are **iPad_DetailStyleSheetDataset_ItemView** and **iPad_DetailStyleSheetDataset_TaskView**. The first dictates the style of the detail view for items/item revisions and other nontask objects, and the second is exclusively for **EPMTask** objects. They both should be set to a string value that is the **object_name** of a dataset that exists in the Teamcenter database. The dataset should have one file reference to an XSL file with the file extension of **.xsl**. If these preferences are not set, the application uses its default XSL files for the display.

Input XML format

The following is the XML format the application creates to represent the data that is to be transformed into XHTML for display. This is the XML format that all custom XSL files need to transform. The format of this XML is internal to the application and cannot be configured.

Example of an item/item revision:

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<?xml-stylesheet type="text/xsl" href="ItemView.xsl"?>
<view>
  <image_path>/var/mobile/Applications/234B136A-7E62-4F3F-BE49-504C5C4A3E78/Library/
Caches/downloads/AiMxNQjLYgloJD-1323290155.171477.prev
  </image_path>
  <objects>
    <object>
      <name>000224-Tractor</name>
      <type>Item</type>
      <attributes>
        <attribute>
          <name>Description</name>
          <value>Model 173A-3</value>
        </attribute>
        <attribute>
          <name>Release Status</name>
          <value>perform-signoffs</value>
        </attribute>
        <attribute>
          <name>Owner</name>
          <value>technician</value>
        </attribute>
        <attribute>
          <name>Last Modified Date</name>
          <value>Sep 25, 2011 6:45:40 PM</value>
        </attribute>
        <attribute>
          <name>ID</name>
          <value>000224</value>
        </attribute>
      </attributes>
    </object>
  </objects>
</view>
```

```
<object>
  <name>000224/C;1-Tractor</name>
  <type>ItemRevision</type>
  <attributes>
    <attribute>
      <name>Description</name>
      <value>American marketing materials.</value>
    </attribute>
    <attribute>
      <name>Release Status</name>
      <value />
    </attribute>
    <attribute>
      <name>Owner</name>
      <value>technician</value>
    </attribute>
    <attribute>
      <name>Last Modified Date</name>
      <value>Sep 25, 2011 6:45:28 PM</value>
    </attribute>
    <attribute>
      <name>ID</name>
      <value>000224</value>
    </attribute>
  </attributes>
</object>
</objects>
<buttons />
</view>
```

Example of an EPMTask:

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<?xml-stylesheet type="text/xsl" href="TaskView.xsl"?>
<view>
  <image_path />
  <objects>
    <object>
      <name>000223-Fiat</name>
      <type>EPMDoTask</type>
      <attributes>
        <attribute>
          <name>Instructions</name>
          <value />
        </attribute>
        <attribute>
          <name>Description</name>
          <value>Test</value>
        </attribute>
        <attribute>
          <name>Owner</name>
          <value>technician</value>
        </attribute>
        <attribute>
          <name>Last Modified Date</name>
          <value>Dec 5, 2011 11:58:43 AM</value>
        </attribute>
        <attribute>
          <name>Task State</name>
          <value>Started</value>
        </attribute>
        <attribute>
          <name>Priority</name>
          <value>0</value>
        </attribute>
        <attribute>
          <name>Due Date</name>
          <value>Dec 7, 2011 7:00:16 AM</value>
        </attribute>
      </attributes>
    </object>
  </objects>
  <buttons>
    <button>
      <name>Complete</name>
      <action>completeTaskButtonTap</action>
    </button>
  </buttons>
</view>
```

Default XSL stylesheet

The following is the default XSL stylesheet that is used for both the **ItemView** and **TaskView**.

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
  <xsl:template match="/">
    <html>
      <head>
        <style type="text/css">
          body {
            font-family: Helvetica, Arial, Sans-Serif;
          }
          table {
            margin-bottom: 10px;
            background: whitesmoke;
            border-collapse: collapse;
            width: 100%;
            white-space: pre-wrap;
          }
          table th, table td {
            border: 1px silver solid;
            padding: 0.2em;
          }
          table th {
            background: gainsboro;
            text-align: left;
          }
          table th.key {
            width: 30%;
          }
          table th.value {
            width: 70%;
          }
          .button {
            border: 1px solid rgb(157,157,157);
            background: white;
            color: rgb(50,79,133);
            margin-right: 15px;
            margin-bottom: 10px;
            padding: 11px;
            min-width: 300px;
            display: inline-block;
            font-size: 15px;
            font-weight: bold;
            text-decoration: none;
            text-align: center;
            -webkit-border-radius: 10px;
            -webkit-tap-highlight-color: rgba(0,0,0,0);
            -webkit-touch-callout: none;
          }
          .button:active {
```

```

        background: rgb(2,109,236);
        color: white;
    }
    img.centeredImage {
        display: block;
        margin-left: auto;
        margin-right: auto;
        margin-top: 10px;
        max-width: 100%;
    }
</style>
</head>
<body>
  <xsl:for-each select="view/objects/object">
    <table>
      <tr>
        <th class="key"><xsl:value-of select="type"/></th>
        <th class="value"><xsl:value-of select="name"/></th>
      </tr>
      <xsl:for-each select="attributes/attribute">
        <tr>
          <td><em><xsl:value-of select="name"/></em></td>
          <td><xsl:value-of select="value"/></td>
        </tr>
      </xsl:for-each>
    </table>
  </xsl:for-each>
  <xsl:for-each select="view/buttons/button">
    <a class="button" ontouchstart="">
      <xsl:attribute name="href">tcnativeaction:<xsl:value-of select="action"/></xsl:attribute>
      <xsl:value-of select="name"/>
    </a>
  </xsl:for-each>
  <img class="centeredImage">
    <xsl:attribute name="src"><xsl:value-of select="view/image_path"/></xsl:attribute>
  </img>
</body>
</html>
</xsl:template>
</xsl:stylesheet>

```

Displaying custom attributes

Custom attributes are displayed in the same way as previous versions of the application, using the **iPad_custom_attributes** server preference. In Teamcenter Mobility, these attributes are displayed on the main **Data pane** instead of being displayed in a separate view.

Troubleshooting

Teamcenter server cannot be reached by name

On a workstation, Teamcenter is accessed at **http://tcserver:7001**, but the iPad cannot connect to that host.

- Check whether the fully qualified name of the machine is accessible, for example, **http://tcserver.company.com:7001**. If so, add a search domain on the iPad by tapping **Settings, Wi-Fi**, and then your network. In the **Search Domains** box, add the domain, for example, *company.com*. For this information, see your network administrator.

Objects load, but datasets (such as preview images, JT files or other attachments) do not

- You may need to add a search domain. See [Teamcenter server cannot be reached by name](#).
- Your Web tier may be configured to point to your FMS server using a domain name not accessible by the iPad. For more information about how to fix the problem, see [FMS configuration](#).

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ASIHTTP Request by All-Seeing Interactive

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