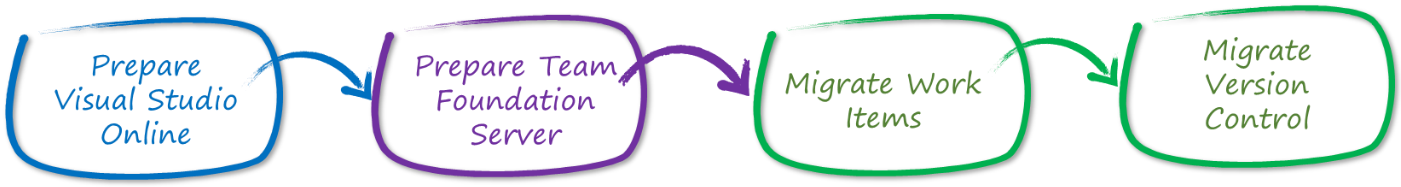
Understanding TFS migrations from on-premises to Visual Studio Online – Part 2: Walkthrough

Martin Hinshelwood, Hosam Kamel, Wouter de Kort, and Josh Garverick

Since Team Foundation Server (TFS) 2005, the ALM Rangers and ALM MVPs have had a mission to provide out-of-band solutions to missing TFS features and guidance.

In this article, we continue from part 1 – Concepts, walking you through the migration of a simulated on-premises environment, using Brian Keller's VM[1], to Visual Studio Online (VSO).

This article covers the following exercises:



Prerequisites

You require the following to complete this walkthrough:

- The sample solution documented below
- The latest Brian Keller VM [2]or an environment with:
    - Visual Studio 2012 Professional or higher
    - Team Foundation Server 2012 or higher
- Your Visual Studio Online Account, i.e. https://youraccount.visualstudio.com.

Limitations

The walkthrough assumes you will be using Excel to migrate Work Items from TFS on-premises to Visual Studio Online. It is important to understand that this approach has some limitations[3]:

- The migration will move items from source TFS to Visual Studio Online in the “New State” or the first state for the Work Items based on the Process Template you are using.
- Test Cases can be migrated as a normal Work Item while the test case step(s) and test case result(s) will not be migrated.
- VSO will not create your area path. You have to create a corresponding area path or use the default area created for your project.
- Excel will assume one-to-one user mapping. It will use the same name for TFS on-premises users. It is important to make sure you have the users created in Visual Studio Online prior the migration.
- Work Items history (including comments), hyperlinks, and attachments will not be migrated by Excel.
- Visual Studio Online does not support Process customizations, so assume you will migrate to the out-of-the-box Process Templates (Scrum, Agile, or CMMI).

The walkthrough assumes you will be using Visual Studio only to migrate latest Source Code from TFS on-premises to Visual Studio Online. It is important to understand that this approach has some limitations:

- Only the latest version of your code will be migrated.
- History, labels, branches, and permissions will not be migrated.

[1] http://aka.ms/ALMVMs

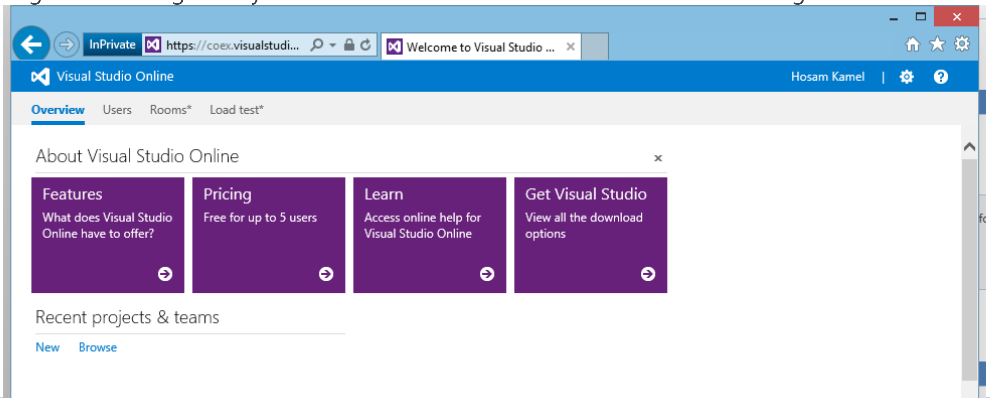
[2] http://aka.ms/almvms

[3] Peruse Understanding TFS migrations from on-premises to Visual Studio Online – Part 1 – Concepts, for possible alternatives.

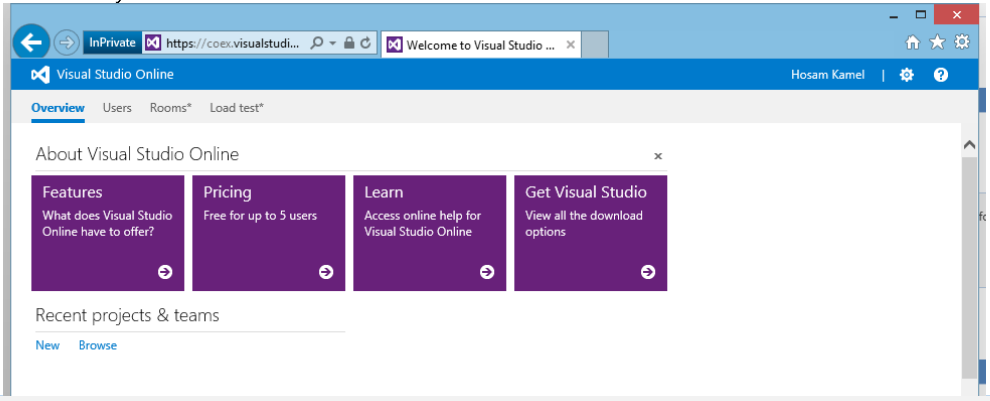
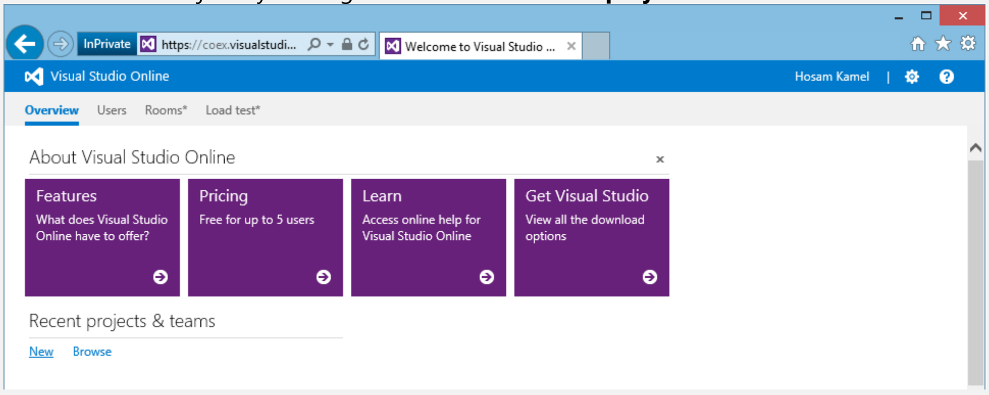
Exercise 1: Visual Studio Online Environment Preparations

GOAL	We assume we start with no pre-configured environment, create a team project, download, and check-in our sample solution.

Task 1.1: Logon to your Visual Studio Online account

Step	Instructions
1 Logon ☐ - Done	• Browse to your Visual Studio Online account • Login using your Microsoft account or organizational account.  InPrivate https://coex.visualstudi... Welcome to Visual Studio ... Visual Studio Online Hosam Kamel Overview Users Rooms* Load test* About Visual Studio Online Features What does Visual Studio Online have to offer? Pricing Free for up to 5 users Learn Access online help for Visual Studio Online Get Visual Studio View all the download options Recent projects & teams New Browse

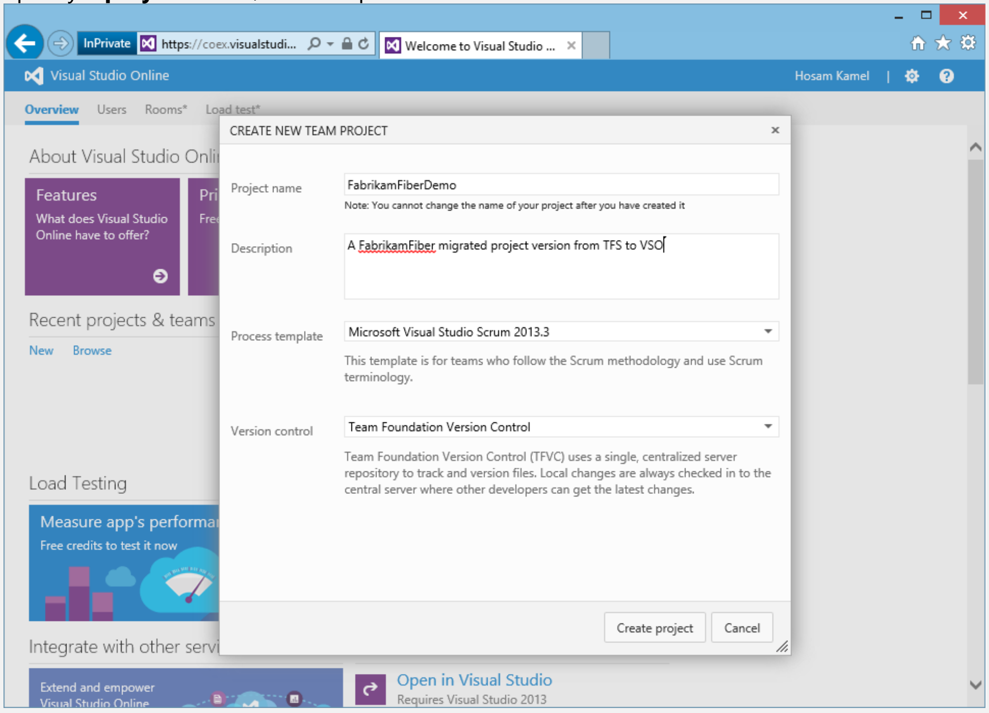
Task 1.2: Create a destination Team Project on Visual Studio Online

Step	Instructions
1 Navigate to your Visual Studio Online account ☐ - Done	• Browse to your Visual Studio Online account.  InPrivate https://coex.visualstudi... Welcome to Visual Studio ... Visual Studio Online Hosam Kamel Overview Users Rooms* Load test* About Visual Studio Online Features What does Visual Studio Online have to offer? Pricing Free for up to 5 users Learn Access online help for Visual Studio Online Get Visual Studio View all the download options Recent projects & teams New Browse
2 Create Team Project ☐ - Done	• Create a Team Project by clicking on **New** under **Recent projects & teams**  InPrivate https://coex.visualstudi... Welcome to Visual Studio ... Visual Studio Online Hosam Kamel Overview Users Rooms* Load test* About Visual Studio Online Features What does Visual Studio Online have to offer? Pricing Free for up to 5 users Learn Access online help for Visual Studio Online Get Visual Studio View all the download options Recent projects & teams New Browse

Step	Instructions

WARNING Team project name is immutable! You cannot change the name once created.

- Specify a **project name**, for example FabrikamFiberDemo.



CREATE NEW TEAM PROJECT

Project name: FabrikamFiberDemo
Note: You cannot change the name of your project after you have created it

Description: A FabrikamFiber migrated project version from TFS to VSO

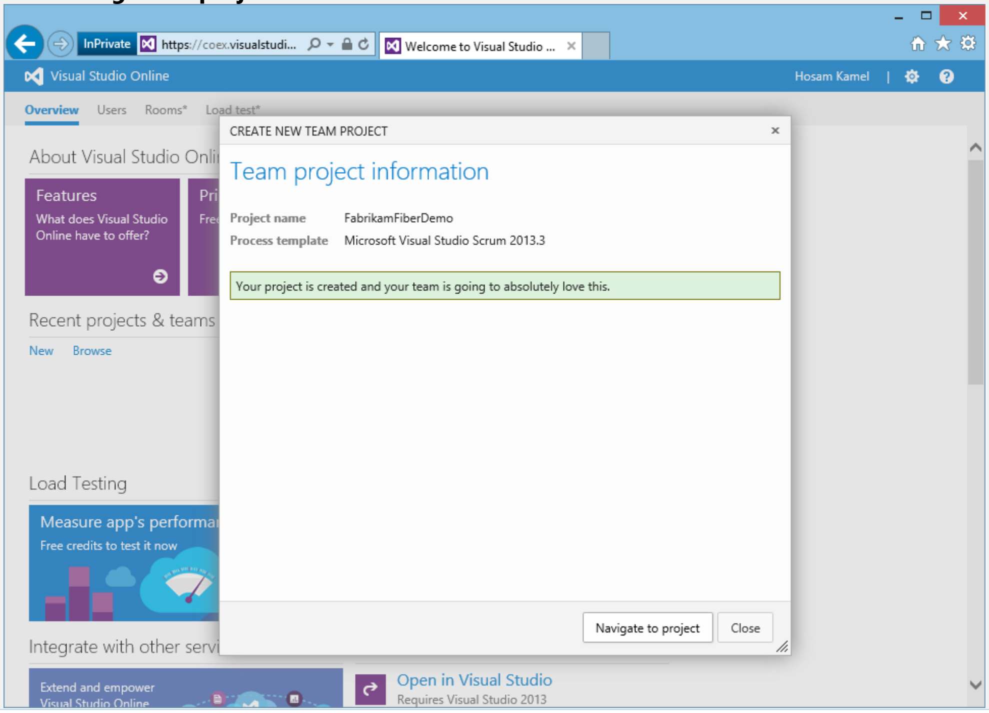
Process template: Microsoft Visual Studio Scrum 2013.3
This template is for teams who follow the Scrum methodology and use Scrum terminology.

Version control: Team Foundation Version Control
Team Foundation Version Control (TFVC) uses a single, centralized server repository to track and version files. Local changes are always checked in to the central server where other developers can get the latest changes.

- Select a **Process Template** that matches the same Process Template as your Team Foundation Server source team project, for example Microsoft Visual Studio Scrum 2013.3.

WARNING Version control system is immutable! You cannot switch from TFVC to Git, for example.

- Select a **version control** that matches your Team Foundation Server source team project, for example Team Foundation Version Control.
- Select **Create**.
- Wait until you get the confirmation that the project created successfully.
- Click **Navigate to project**.



CREATE NEW TEAM PROJECT

Team project information

Project name: FabrikamFiberDemo
Process template: Microsoft Visual Studio Scrum 2013.3

Your project is created and your team is going to absolutely love this.

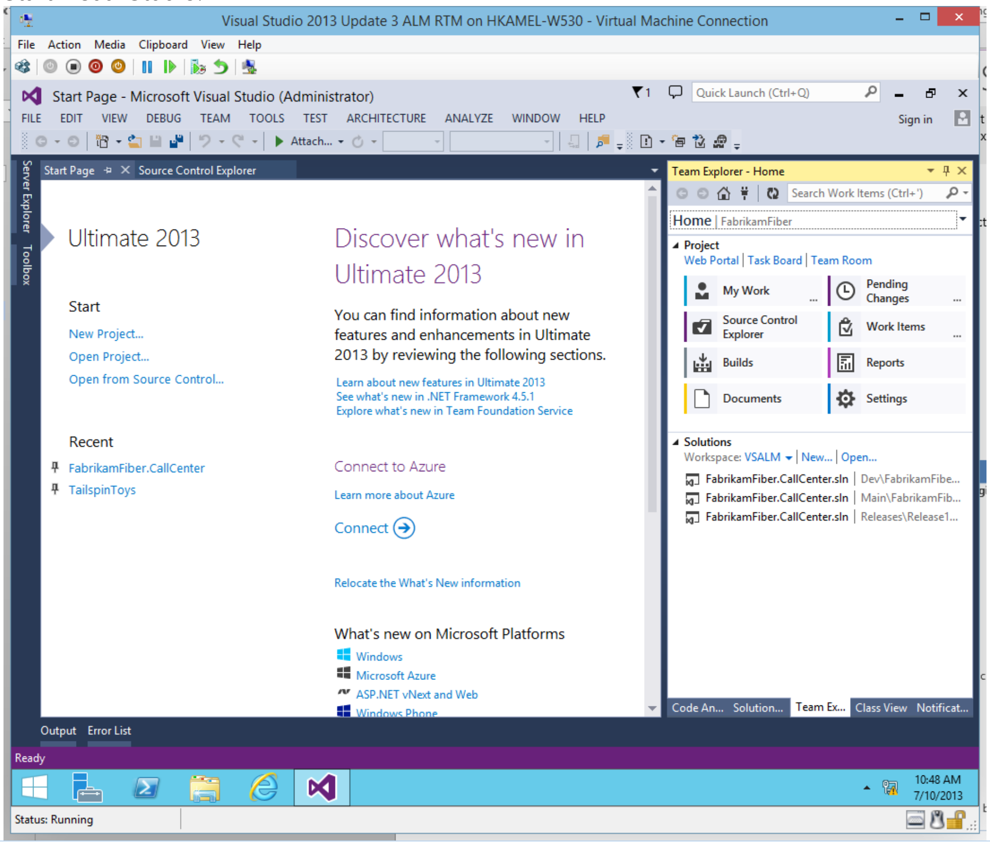
Exercise 2: Team Foundation Server Environment Preparations

GOAL Prepare the list of Work Items you need to migrate to Visual Studio Online. This can be as simple as a query that list all the Work Items or creating a customized Work Item query to list only the Work Items within certain criteria.

Task 2.1: Logon to your environment

Step	Instructions
1 Logon ☐ - Done	• If you are logging in using an instance of Brian Keller's VM, i.e. at TechReady, logon using the **administrator P2ssw0rd** credentials. • Alternatively, login using your own evaluation environment, with credentials that will allow you to retrieve Work Item and version control data.

Task 2.2: Create a custom Work Items query

Step	Instructions
1 Start Visual Studio ☐ - Done	• Start Visual Studio. 

Visual Studio 2013 Update 3 ALM RTM on HKAMEL-W530 - Virtual Machine Connection

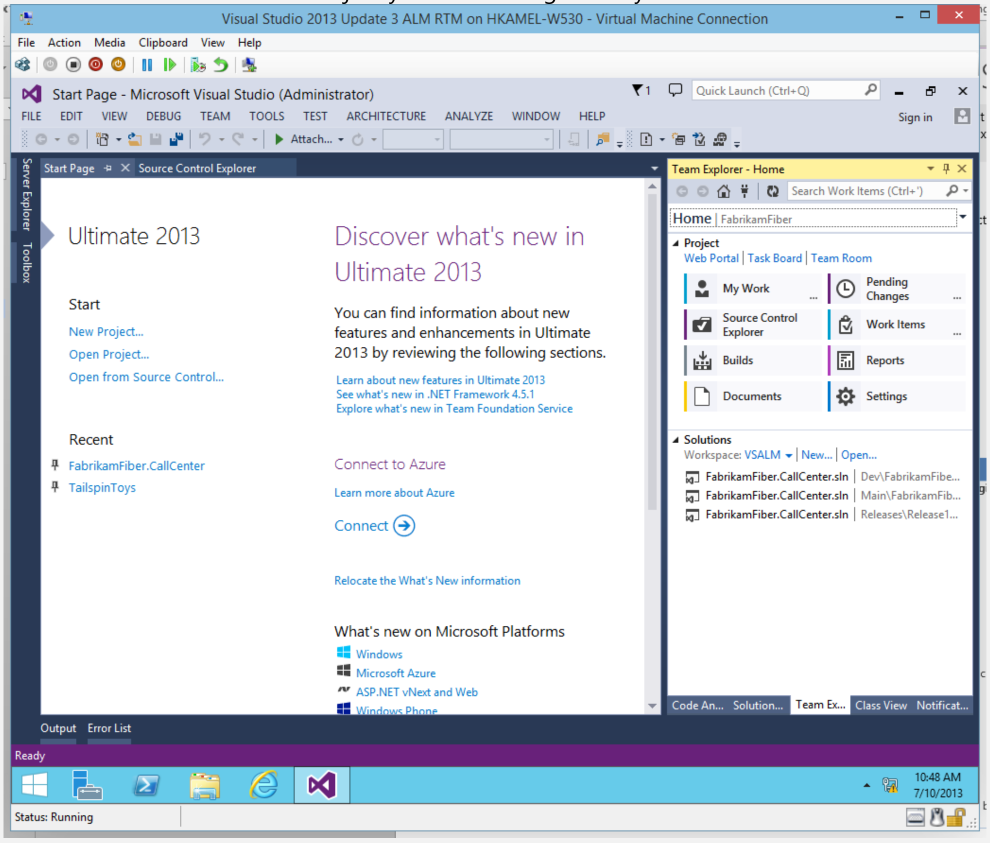
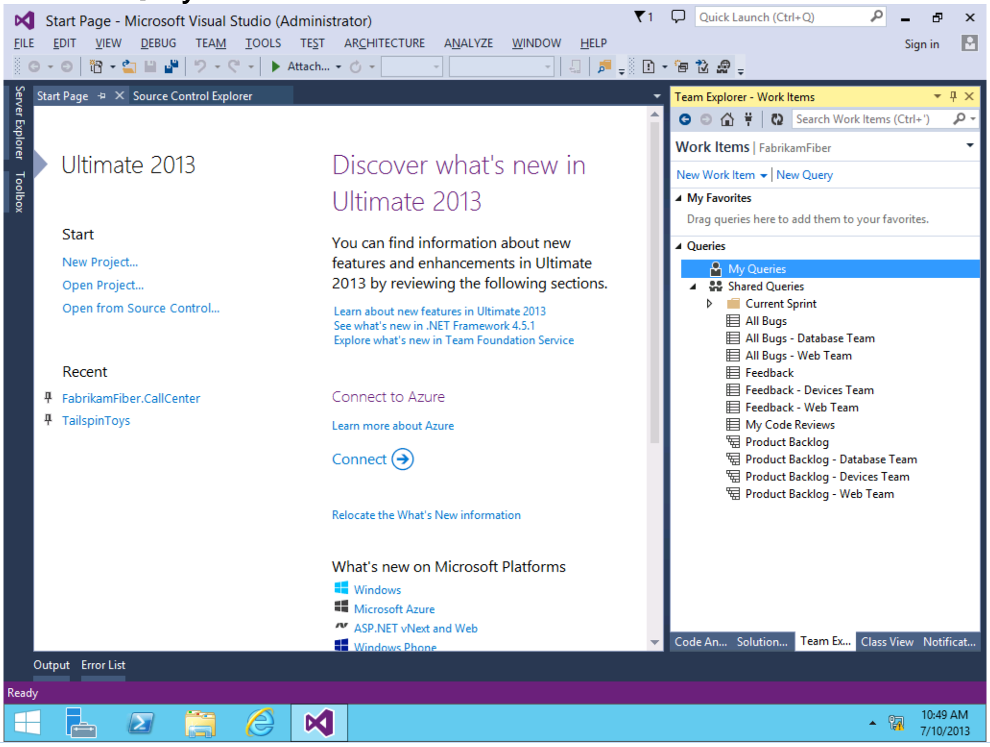
Start Page - Microsoft Visual Studio (Administrator)

Ultimate 2013

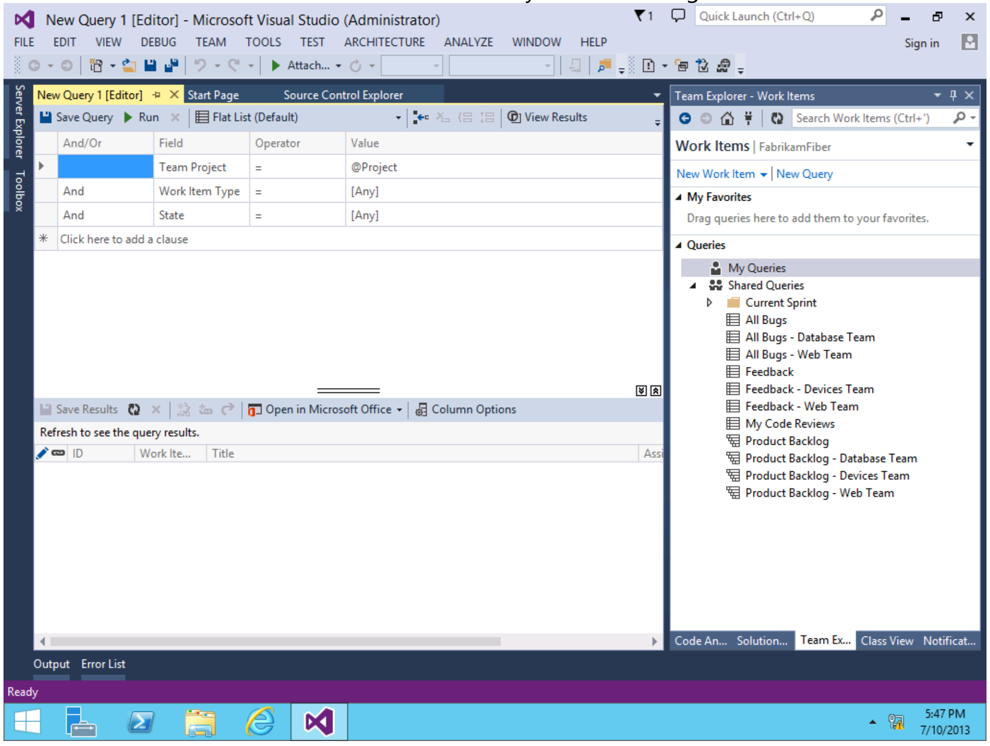
Discover what's new in Ultimate 2013

You can find information about new features and enhancements in Ultimate 2013 by reviewing the following sections.

File Action Media Clipboard View Help
FILE EDIT VIEW DEBUG TEAM TOOLS TEST ARCHITECTURE ANALYZE WINDOW HELP
Quick Launch (Ctrl+Q)
Sign in
Start Page
Source Control Explorer
Start
New Project...
Open Project...
Open from Source Control...
Recent
FabrikamFiber.CallCenter
TailspinToys
Learn about new features in Ultimate 2013
See what's new in .NET Framework 4.5.1
Explore what's new in Team Foundation Service
Connect to Azure
Learn more about Azure
Connect
Relocate the What's New information
What's new on Microsoft Platforms
Windows
Microsoft Azure
ASP.NET vNext and Web
Windows Phone
Team Explorer - Home
Search Work Items (Ctrl+')
Home | FabrikamFiber
Project
Web Portal | Task Board | Team Room
My Work
Pending Changes
Source Control Explorer
Work Items
Builds
Reports
Documents
Settings
Solutions
Workspace: VSALM | New... | Open...
FabrikamFiber.CallCenter.sln | Dev\FabrikamFibe...
FabrikamFiber.CallCenter.sln | Main\FabrikamFib...
FabrikamFiber.CallCenter.sln | Releases\Release1...
Code An... Solution... Team Ex... Class View Notificat...
Output Error List
Ready
10:48 AM 7/10/2013
Status: Running

Step	Instructions
2 Connect to your Team Project (TP) ☐ - Done	• Connect to the source Team Project you wish to migrate to your Visual Studio Online destination  Visual Studio 2013 Update 3 ALM RTM on HKAMEL-W530 - Virtual Machine Connection File Action Media Clipboard View Help Start Page - Microsoft Visual Studio (Administrator) Quick Launch (Ctrl+Q) FILE EDIT VIEW DEBUG TEAM TOOLS TEST ARCHITECTURE ANALYZE WINDOW HELP Sign in Attach... Start Page Source Control Explorer Server Explorer Toolbox Ultimate 2013 Start New Project... Open Project... Open from Source Control... Recent FabrikamFiber.CallCenter TailspinToys Discover what's new in Ultimate 2013 You can find information about new features and enhancements in Ultimate 2013 by reviewing the following sections. Learn about new features in Ultimate 2013 See what's new in .NET Framework 4.5.1 Explore what's new in Team Foundation Service Connect to Azure Learn more about Azure Connect Relocate the What's New information What's new on Microsoft Platforms Windows Microsoft Azure ASP.NET vNext and Web Windows Phone Team Explorer - Home Search Work Items (Ctrl+') Home | FabrikamFiber Project Web Portal | Task Board | Team Room My Work Pending Changes Source Control Explorer Work Items Builds Reports Documents Settings Solutions Workspace: VSALM | New... | Open... FabrikamFiber.CallCenter.sln | Dev\FabrikamFibe... FabrikamFiber.CallCenter.sln | Main\FabrikamFib... FabrikamFiber.CallCenter.sln | Releases\Release1... Code An... Solution... Team Ex... Class View Notificat... Output Error List Ready 10:48 AM 7/10/2013 Status: Running
3 Create a new Work Item query ☐ - Done	• Navigate to "**Work Items**" from Team Explorer. • Click "**New Query**".  Start Page - Microsoft Visual Studio (Administrator) Quick Launch (Ctrl+Q) FILE EDIT VIEW DEBUG TEAM TOOLS TEST ARCHITECTURE ANALYZE WINDOW HELP Sign in Start Page Source Control Explorer Ultimate 2013 Discover what's new in Ultimate 2013 Team Explorer - Work Items Search Work Items (Ctrl+') Work Items | FabrikamFiber New Work Item | New Query My Favorites Drag queries here to add them to your favorites. Queries My Queries Shared Queries Current Sprint All Bugs All Bugs - Database Team All Bugs - Web Team Feedback Feedback - Devices Team Feedback - Web Team My Code Reviews Product Backlog Product Backlog - Database Team Product Backlog - Devices Team Product Backlog - Web Team Code An... Solution... Team Ex... Class View Notificat... Output Error List Ready 10:49 AM 7/10/2013

Step	Instructions
	• Fill in the correct filter to retrieve the Work Items you need to migrate to Visual Studio Online.

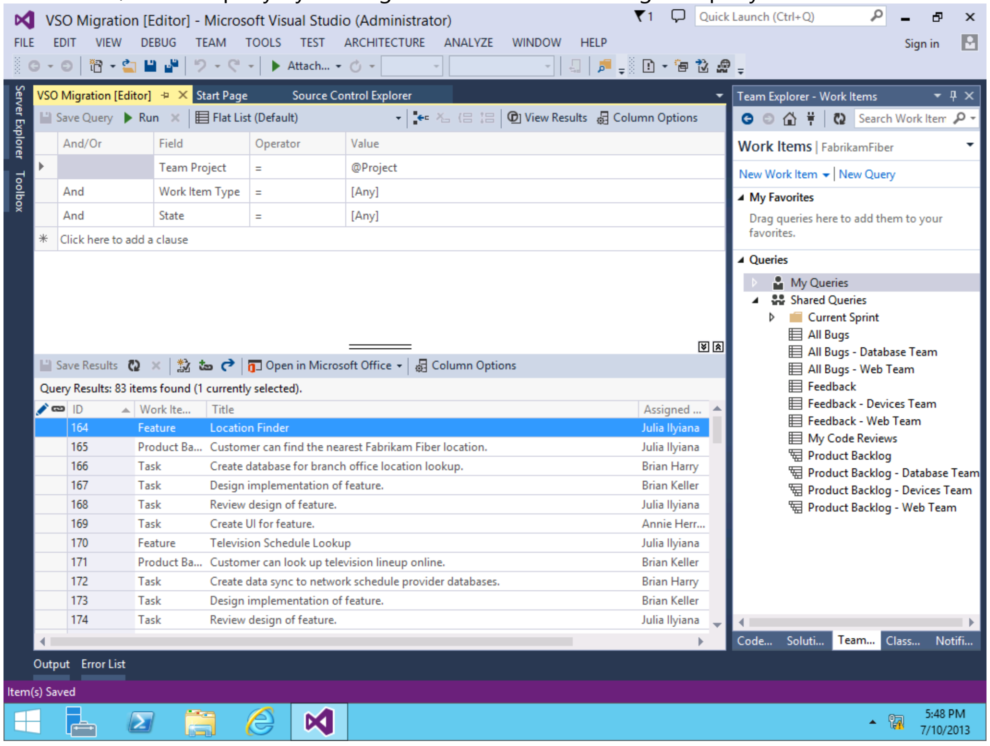


And/Or	Field	Operator	Value
	Team Project	=	@Project
And	Work Item Type	=	[Any]
And	State	=	[Any]

Click here to add a clause

Refresh to see the query results.

• Once done, run the query by clicking on "**Run**" and validating the query results.



And/Or	Field	Operator	Value
	Team Project	=	@Project
And	Work Item Type	=	[Any]
And	State	=	[Any]

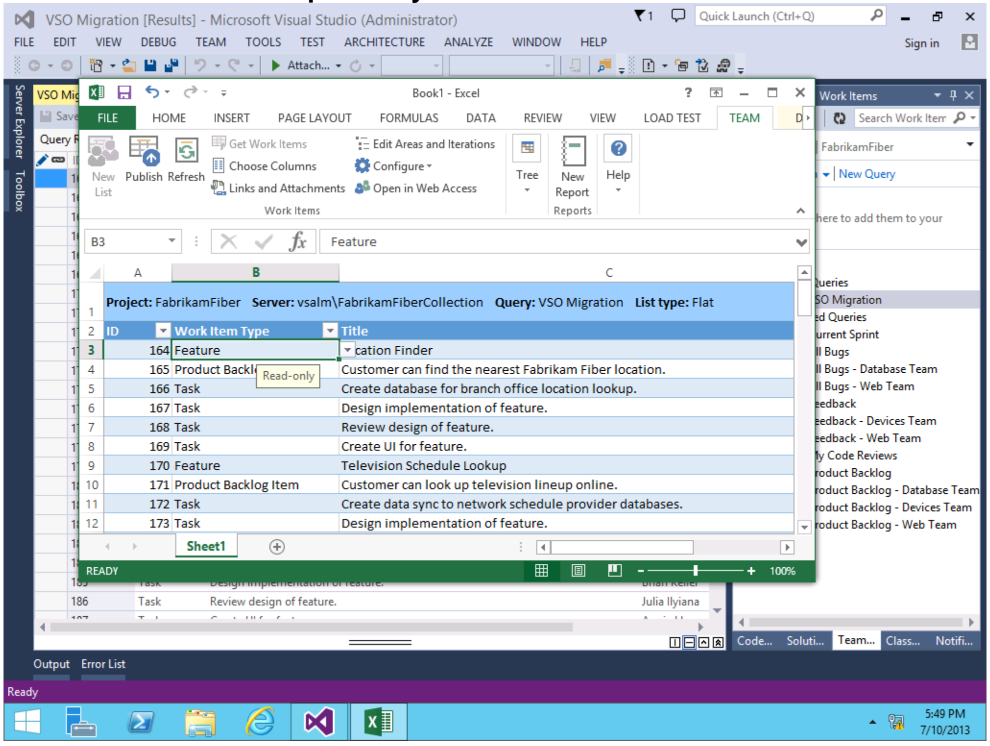
Click here to add a clause

Query Results: 83 items found (1 currently selected).

ID	Work Ite...	Title	Assigned ...
164	Feature	Location Finder	Julia Ilyiana
165	Product Ba...	Customer can find the nearest Fabrikam Fiber location.	Julia Ilyiana
166	Task	Create database for branch office location lookup.	Brian Harry
167	Task	Design implementation of feature.	Brian Keller
168	Task	Review design of feature.	Julia Ilyiana
169	Task	Create UI for feature.	Annie Herr...
170	Feature	Television Schedule Lookup	Julia Ilyiana
171	Product Ba...	Customer can look up television lineup online.	Brian Keller
172	Task	Create data sync to network schedule provider databases.	Brian Harry
173	Task	Design implementation of feature.	Brian Keller
174	Task	Review design of feature.	Julia Ilyiana

• Save the query to your queries "**My Queries**".

Task 2.3: Export custom query result to Excel

Step	Instructions
1 Open Query in Result mode ☐ - Done	• Open the query created previously ("Visual Studio Online Migration") in result mode, and from **Open in Microsoft Office** select **Open Query in Microsoft Excel**.  • Save the source Excel sheet.

VSO Migration [Results] - Microsoft Visual Studio (Administrator)
FILE EDIT VIEW DEBUG TEAM TOOLS TEST ARCHITECTURE ANALYZE WINDOW HELP
Book1 - Excel
FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW LOAD TEST TEAM
New List
Publish
Refresh
Get Work Items
Choose Columns
Links and Attachments
Edit Areas and Iterations
Configure
Open in Web Access
Work Items
Tree
New Report
Help
Reports
B3
Feature
Read-only
Sheet1
READY
Work Items
FabrikamFiber
New Query
Ready

Project: FabrikamFiber Server: vsalm\FabrikamFiberCollection Query: VSO Migration List type: Flat

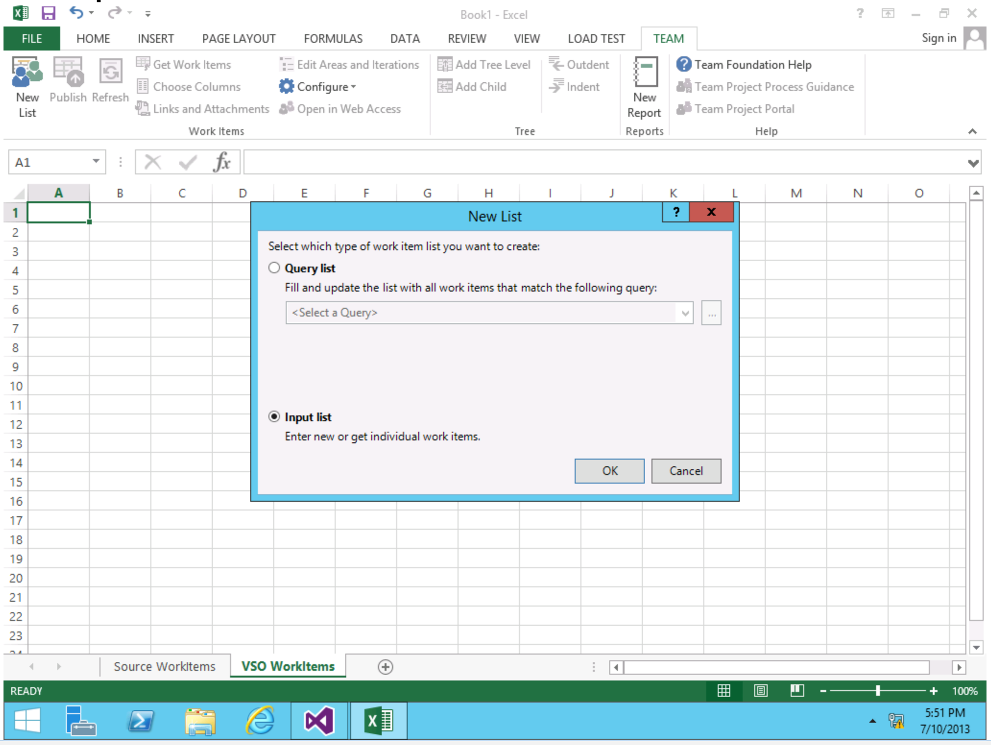
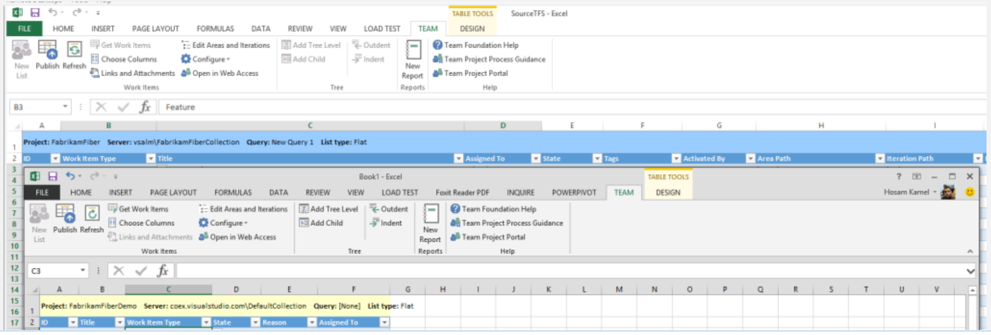
ID	Work Item Type	Title
164	Feature	cation Finder
165	Product Backl	Customer can find the nearest Fabrikam Fiber location.
166	Task	Create database for branch office location lookup.
167	Task	Design implementation of feature.
168	Task	Review design of feature.
169	Task	Create UI for feature.
170	Feature	Television Schedule Lookup
171	Product Backlog Item	Customer can look up television lineup online.
172	Task	Create data sync to network schedule provider databases.
173	Task	Design implementation of feature.

Exercise 3: Migrate Work Items to Visual Studio Online

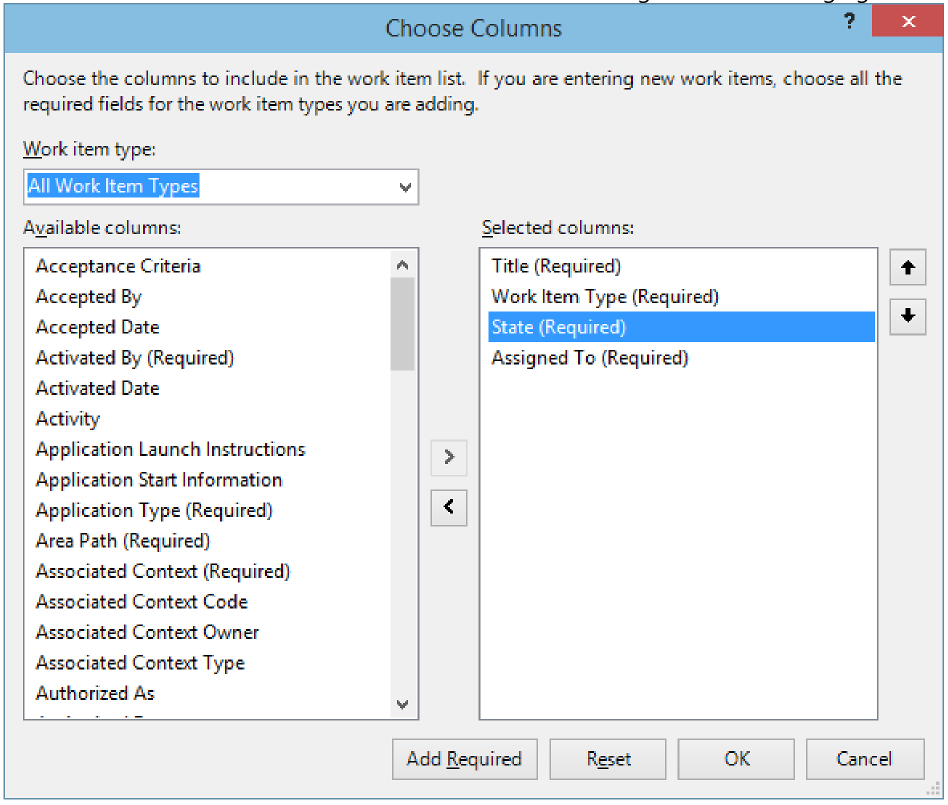
GOAL Migrate the Work Items from on-premises TFS to Visual Studio Online

Task 3.1: Create a new input list Excel sheet

Step	Instructions
1 Create a new Excel sheet ☐ - Done	• Open a new instance of Excel. • Connect to Visual Studio Online project from Excel by clicking on **New List** from **Team** tab.

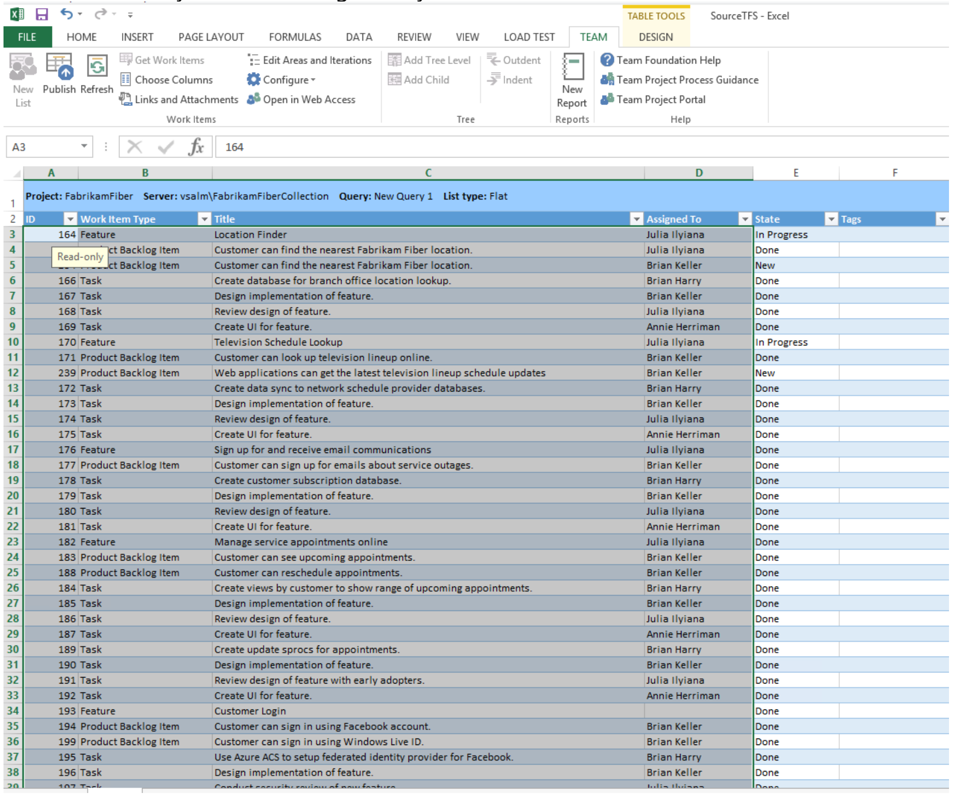
Step	Instructions
	• Select **Input list** from **New List** window.  New List Select which type of work item list you want to create: ○ **Query list** Fill and update the list with all work items that match the following query: <Select a Query> ● **Input list** Enter new or get individual work items. OK Cancel
2 Validate columns along with their sequence. ☐ - Done	• The migration is based on Copy and Paste, so be sure to validate the columns and their sequence on both sheets.  SourceTFS - Excel Project: FabrikamFiber Server: vsalm\FabrikamFiberCollection Query: New Query 1 List type: Flat ID, Work Item Type, Title, Assigned To, State, Tags, Activated By, Area Path, Iteration Path Book1 - Excel Project: FabrikamFiberDemo Server: coex.visualstudio.com\DefaultCollection Query: [None] List type: Flat ID, Title, Work Item Type, State, Reason, Assigned To
3 Optionally rearrange destination fields ☐ - Done	• In case you need to rearrange the destination Excel sheet fields, click on **Choose Columns**. • Add the missing fields and rearrange the existing ones to match the source Excel sheet.

Step	Instructions
	• Click on **Choose Columns** and start adding and arranging the columns.



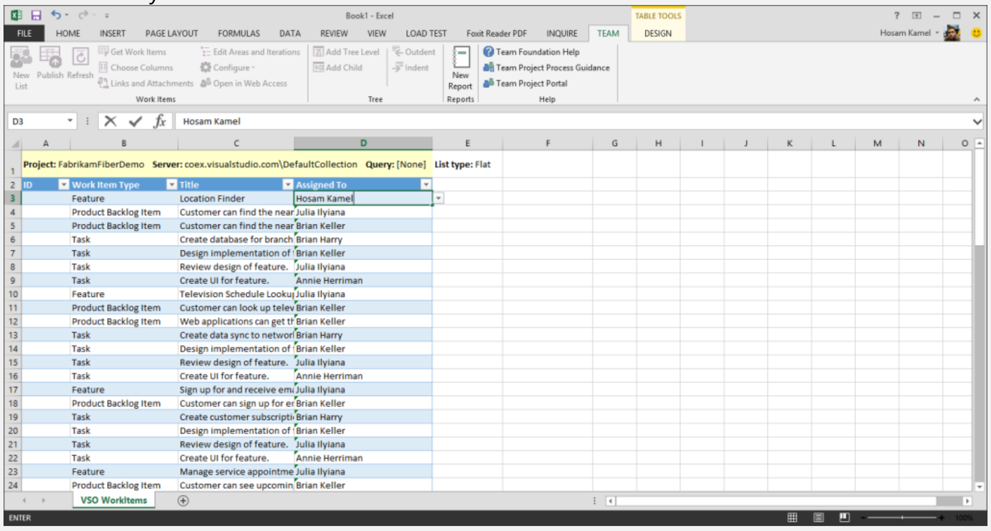
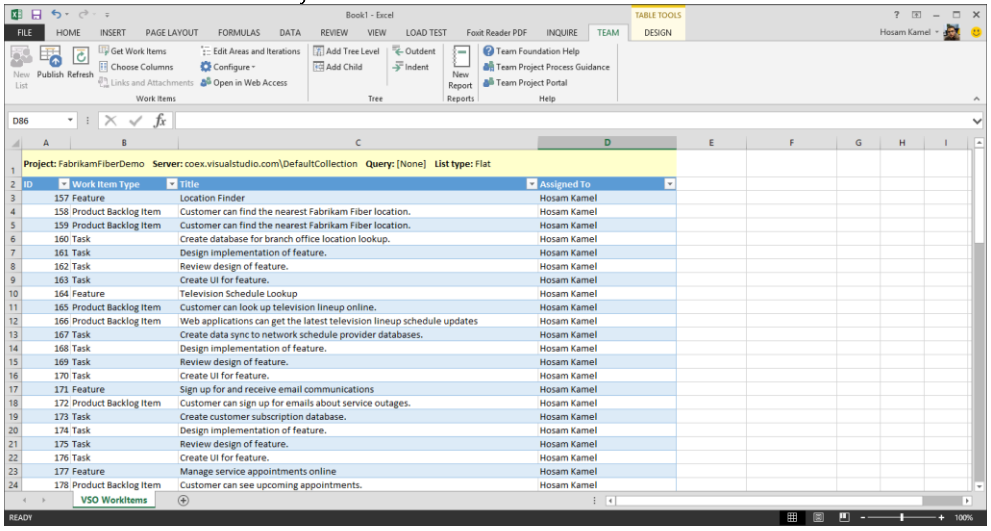
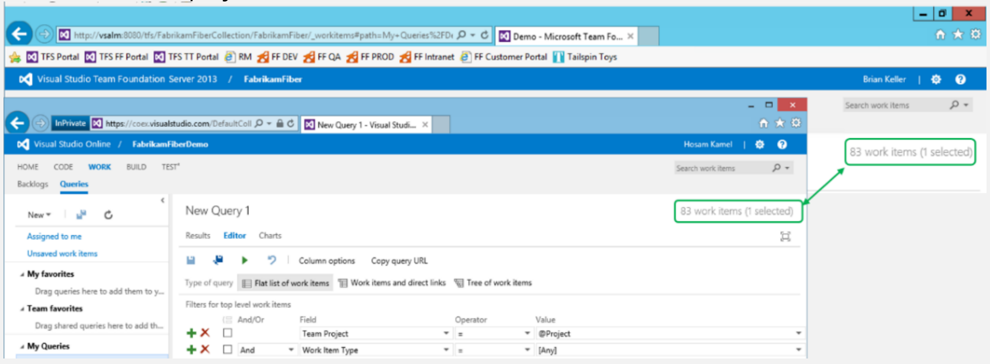
Task 3.2: Copy and Paste data from source sheet to the input list sheet

Step	Instructions
1 Open the original sheet and select the data ☐ - Done	• Open the Source Excel sheet and Copy the Work Items. • Select the fields you want to migrate if you did not customize them as mentioned above.



Project: FabrikamFiber **Server:** vsalm\FabrikamFiberCollection **Query:** New Query 1 **List type:** Flat

ID	Work Item Type	Title	Assigned To	State	Tags
164	Feature	Location Finder	Julia Ilyiana	In Progress	
[illegible]	ct Backlog Item	Customer can find the nearest Fabrikam Fiber location.	Julia Ilyiana	Done	
[illegible]	ct Backlog Item	Customer can find the nearest Fabrikam Fiber location.	Brian Keller	New	
166	Task	Create database for branch office location lookup.	Brian Harry	Done	
167	Task	Design implementation of feature.	Brian Keller	Done	
168	Task	Review design of feature.	Julia Ilyiana	Done	
169	Task	Create UI for feature.	Annie Herriman	Done	
170	Feature	Television Schedule Lookup	Julia Ilyiana	In Progress	
171	Product Backlog Item	Customer can look up television lineup online.	Brian Keller	Done	
239	Product Backlog Item	Web applications can get the latest television lineup schedule updates	Brian Keller	New	
172	Task	Create data sync to network schedule provider databases.	Brian Harry	Done	
173	Task	Design implementation of feature.	Brian Keller	Done	
174	Task	Review design of feature.	Julia Ilyiana	Done	
175	Task	Create UI for feature.	Annie Herriman	Done	
176	Feature	Sign up for and receive email communications	Julia Ilyiana	Done	
177	Product Backlog Item	Customer can sign up for emails about service outages.	Brian Keller	Done	
178	Task	Create customer subscription database.	Brian Harry	Done	
179	Task	Design implementation of feature.	Brian Keller	Done	
180	Task	Review design of feature.	Julia Ilyiana	Done	
181	Task	Create UI for feature.	Annie Herriman	Done	
182	Feature	Manage service appointments online	Julia Ilyiana	Done	
183	Product Backlog Item	Customer can see upcoming appointments.	Brian Keller	Done	
188	Product Backlog Item	Customer can reschedule appointments.	Brian Keller	Done	
184	Task	Create views by customer to show range of upcoming appointments.	Brian Harry	Done	
185	Task	Design implementation of feature.	Brian Keller	Done	
186	Task	Review design of feature.	Julia Ilyiana	Done	
187	Task	Create UI for feature.	Annie Herriman	Done	
189	Task	Create update sprocs for appointments.	Brian Harry	Done	
190	Task	Design implementation of feature.	Brian Keller	Done	
191	Task	Review design of feature with early adopters.	Julia Ilyiana	Done	
192	Task	Create UI for feature.	Annie Herriman	Done	
193	Feature	Customer Login		Done	
194	Product Backlog Item	Customer can sign in using Facebook account.	Brian Keller	Done	
199	Product Backlog Item	Customer can sign in using Windows Live ID.	Brian Keller	Done	
195	Task	Use Azure ACS to setup federated identity provider for Facebook.	Brian Harry	Done	
196	Task	Design implementation of feature.	Brian Keller	Done	

Step	Instructions
2 Paste the copied cells to the destination Excel sheet ⬚ - Done	• Validate the order of the fields and paste the data in the first cell. Whenever you see a cell with a green rectangle on the top left, this indicates a validation issue. Make sure to correct the values. • In the case below we did not have the same mapped users into my account, so we had to pick the users manually. 
3 publish the Work Items to Visual Studio Online ⬚ - Done	• Click **Publish** and wait until you see that all rows have a valid work Item ID 
4 Validate the migrated Work Items ⬚ - Done	• You can validate the migration by comparing the number of Work Items added in the source and destination team projects. 

D3 Hosam Kamel

Project: FabrikamFiberDemo **Server:** coex.visualstudio.com\DefaultCollection **Query:** [None] **List type:** Flat

ID	Work Item Type	Title	Assigned To
	Feature	Location Finder	Hosam Kamel
	Product Backlog Item	Customer can find the near	Julia Ilyiana
	Product Backlog Item	Customer can find the near	Brian Keller
	Task	Create database for branch	Brian Harry
	Task	Design implementation of	Brian Keller
	Task	Review design of feature.	Julia Ilyiana
	Task	Create UI for feature.	Annie Herriman
	Feature	Television Schedule Looku	Julia Ilyiana
	Product Backlog Item	Customer can look up telev	Brian Keller
	Product Backlog Item	Web applications can get th	Brian Keller
	Task	Create data sync to networ	Brian Harry
	Task	Design implementation of	Brian Keller
	Task	Review design of feature.	Julia Ilyiana
	Task	Create UI for feature.	Annie Herriman
	Feature	Sign up for and receive em	Julia Ilyiana
	Product Backlog Item	Customer can sign up for er	Brian Keller
	Task	Create customer subscripti	Brian Harry
	Task	Design implementation of	Brian Keller
	Task	Review design of feature.	Julia Ilyiana
	Task	Create UI for feature.	Annie Herriman
	Feature	Manage service appointme	Julia Ilyiana
	Product Backlog Item	Customer can see upcomin	Brian Keller

VSO WorkItems

ENTER

D86

Project: FabrikamFiberDemo **Server:** coex.visualstudio.com\DefaultCollection **Query:** [None] **List type:** Flat

ID	Work Item Type	Title	Assigned To
157	Feature	Location Finder	Hosam Kamel
158	Product Backlog Item	Customer can find the nearest Fabrikam Fiber location.	Hosam Kamel
159	Product Backlog Item	Customer can find the nearest Fabrikam Fiber location.	Hosam Kamel
160	Task	Create database for branch office location lookup.	Hosam Kamel
161	Task	Design implementation of feature.	Hosam Kamel
162	Task	Review design of feature.	Hosam Kamel
163	Task	Create UI for feature.	Hosam Kamel
164	Feature	Television Schedule Lookup	Hosam Kamel
165	Product Backlog Item	Customer can look up television lineup online.	Hosam Kamel
166	Product Backlog Item	Web applications can get the latest television lineup schedule updates	Hosam Kamel
167	Task	Create data sync to network schedule provider databases.	Hosam Kamel
168	Task	Design implementation of feature.	Hosam Kamel
169	Task	Review design of feature.	Hosam Kamel
170	Task	Create UI for feature.	Hosam Kamel
171	Feature	Sign up for and receive email communications	Hosam Kamel
172	Product Backlog Item	Customer can sign up for emails about service outages.	Hosam Kamel
173	Task	Create customer subscription database.	Hosam Kamel
174	Task	Design implementation of feature.	Hosam Kamel
175	Task	Review design of feature.	Hosam Kamel
176	Task	Create UI for feature.	Hosam Kamel
177	Feature	Manage service appointments online	Hosam Kamel
178	Product Backlog Item	Customer can see upcoming appointments.	Hosam Kamel

VSO WorkItems

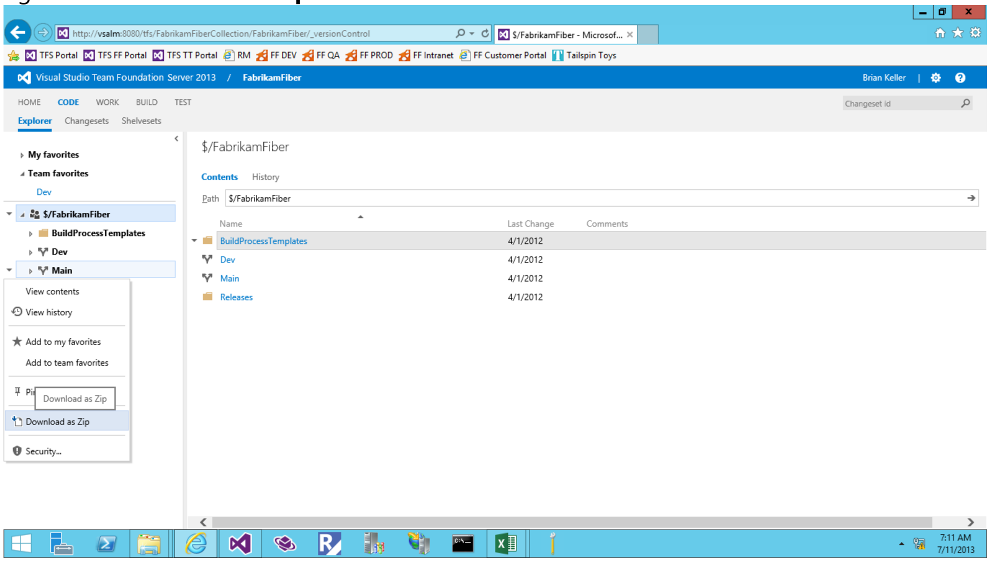
READY

Visual Studio Team Foundation Server 2013 / FabrikamFiber
Brian Keller
83 work items (1 selected)
Visual Studio Online / FabrikamFiberDemo
Hosam Kamel
HOME CODE WORK BUILD TEST
Backlogs Queries
Assigned to me
Unsaved work items
My favorites
Team favorites
My Queries
New Query 1
Results Editor Charts
Column options Copy query URL
Type of query Flat list of work items Work items and direct links Tree of work items
Filters for top level work items
And/Or Field Operator Value
Team Project = @Project
And Work Item Type = [Any]
83 work items (1 selected)

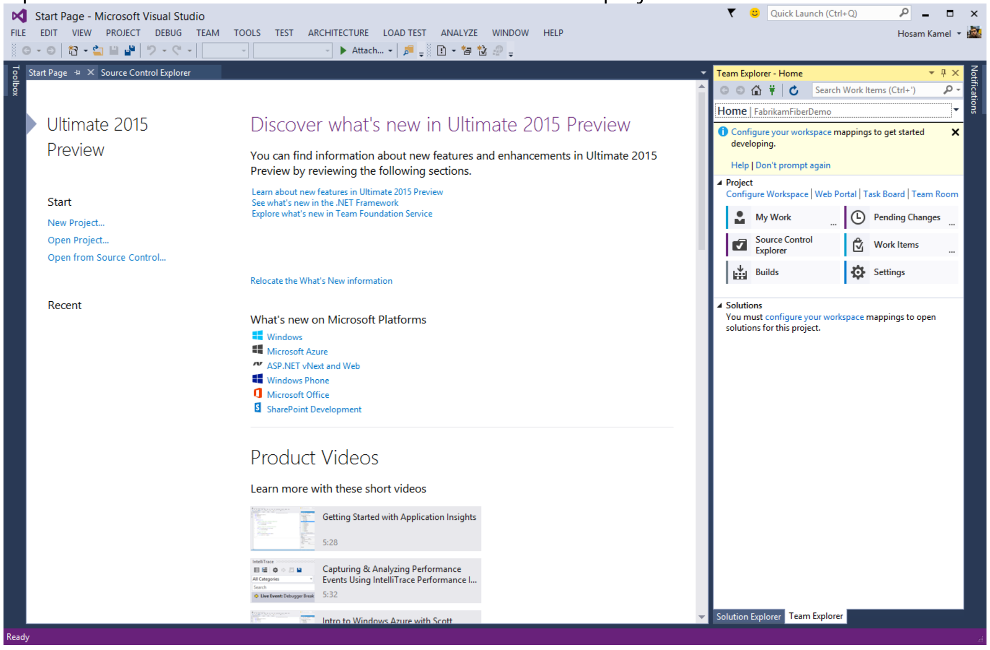
Exercise 4: Migrate Source Code to Visual Studio Online

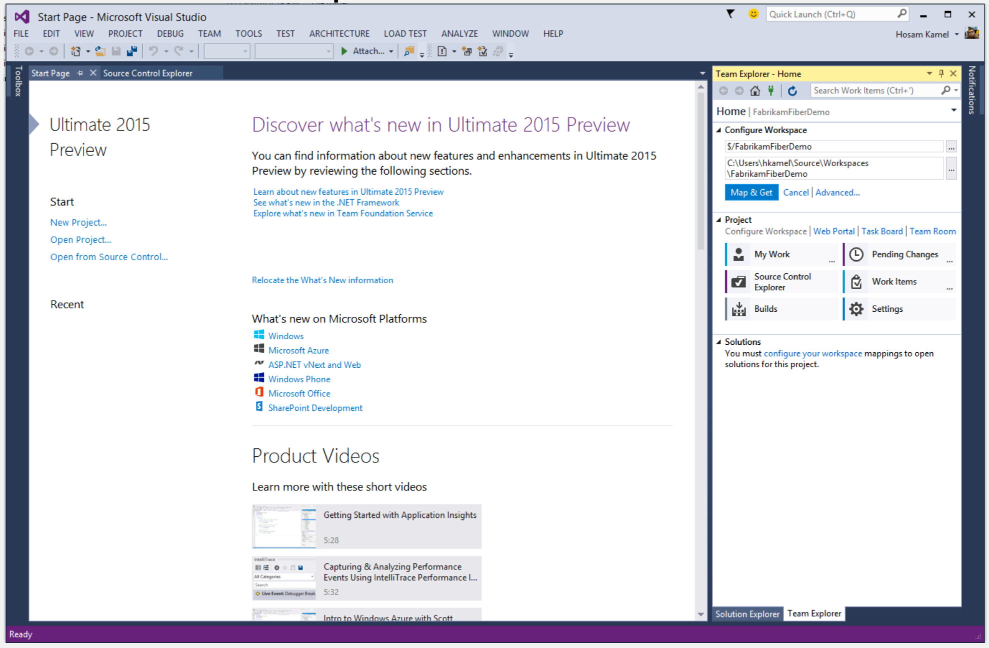
GOAL Migrate the latest source control from on-premises TFS to Visual Studio Online

Task 4.1: Download Latest version of your code

Step	Instructions
1 Navigate to TFS Web Access ☐ - Done	• Navigate to TFS Web Access URL • From "**CODE**" link, select the folder you need to migrate. In our case we will move the main folder, and right click "**Download as Zip**  • Save the zipped folder to the local disk.

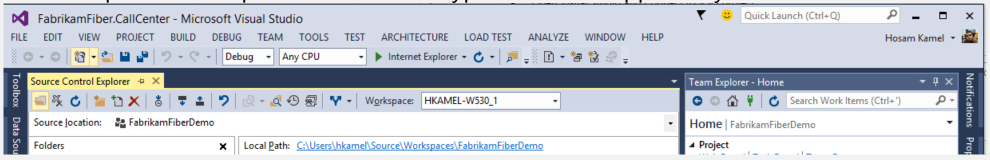
Task 4.2: Configure Visual Studio Online project workspace

Step	Instructions
1 Start Visual Studio ☐ - Done	• Open Visual Studio and Connect to Visual Studio Online project. 
2 map a new workspace for your code files	• On the top of Team Explorer click **Configure your workspace**.

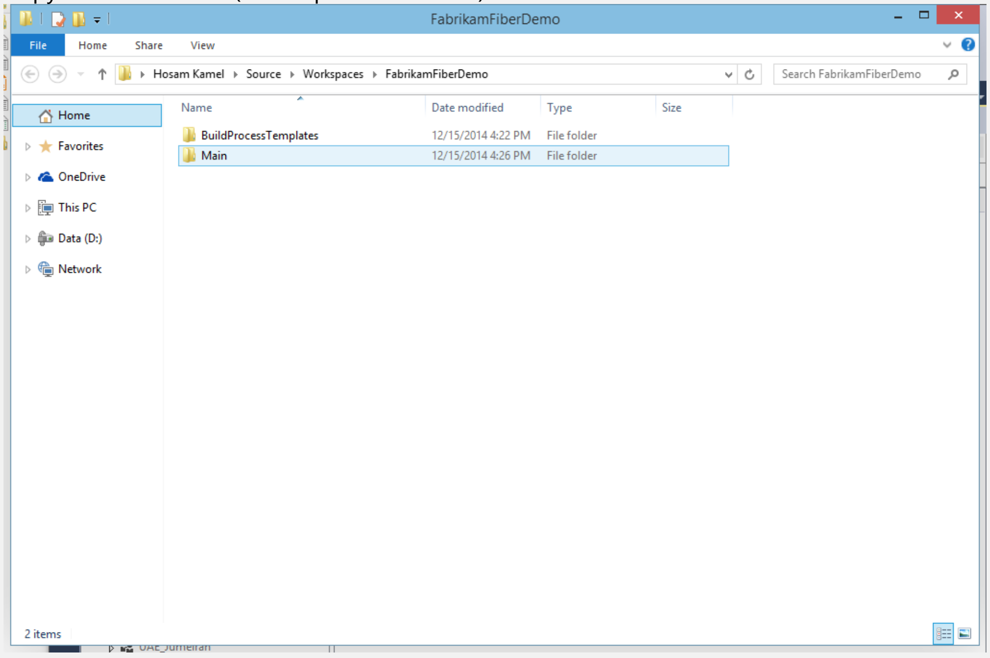
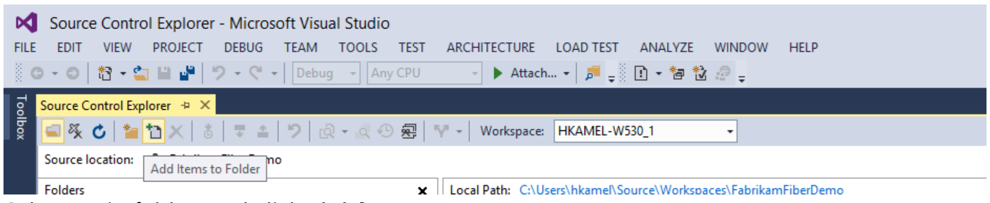
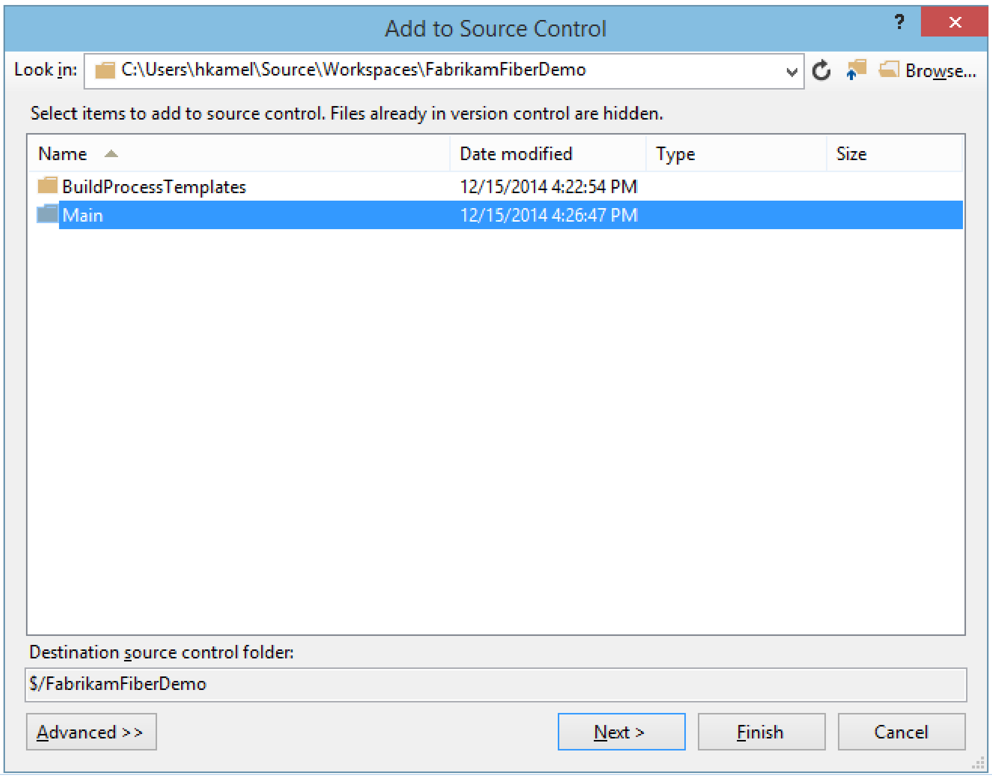
Step	Instructions
☐ - Done	• Select local folder and click **Map & Get** 

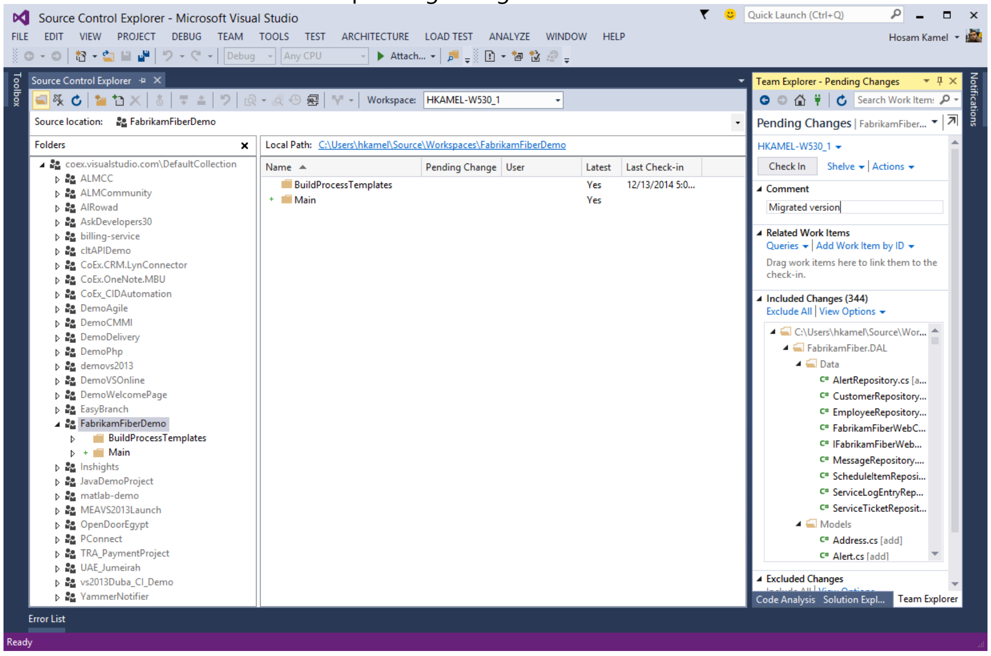
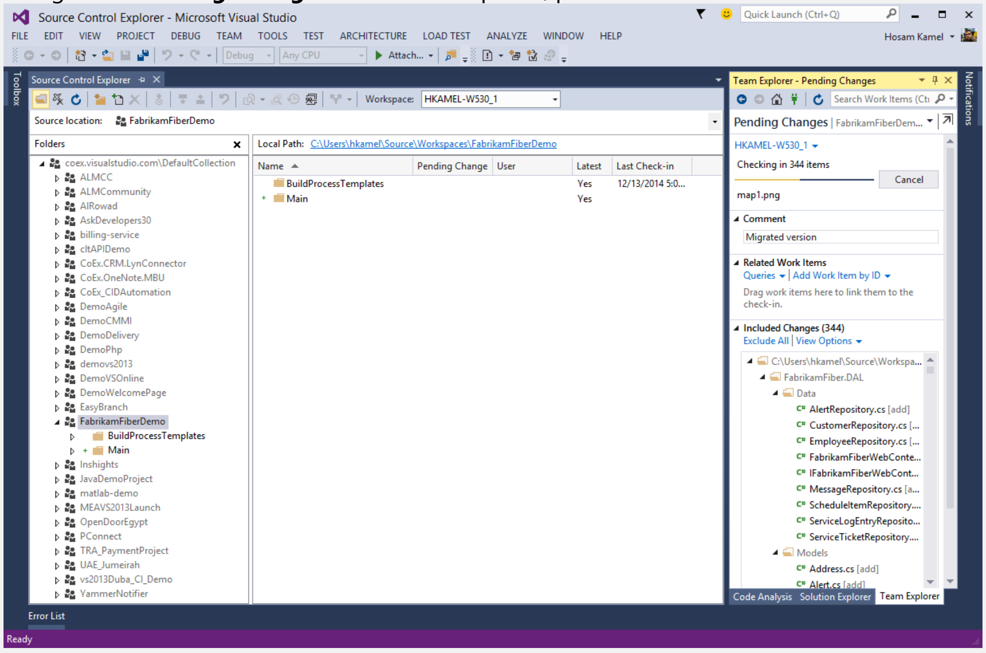
Start Page - Microsoft Visual Studio
FILE EDIT VIEW PROJECT DEBUG TEAM TOOLS TEST ARCHITECTURE LOAD TEST ANALYZE WINDOW HELP
Quick Launch (Ctrl+Q)
Hosam Kamel
Start Page
Source Control Explorer
Ultimate 2015 Preview
Start
New Project...
Open Project...
Open from Source Control...
Recent
Discover what's new in Ultimate 2015 Preview
You can find information about new features and enhancements in Ultimate 2015 Preview by reviewing the following sections.
Learn about new features in Ultimate 2015 Preview
See what's new in the .NET Framework
Explore what's new in Team Foundation Service
Relocate the What's New information
What's new on Microsoft Platforms
Windows
Microsoft Azure
ASP.NET vNext and Web
Windows Phone
Microsoft Office
SharePoint Development
Product Videos
Learn more with these short videos
Getting Started with Application Insights
5:28
Capturing & Analyzing Performance Events Using IntelliTrace Performance I...
5:32
Intro to Windows Azure with Scott
Team Explorer - Home
Search Work Items (Ctrl+')
Home | FabrikamFiberDemo
Configure Workspace
$/FabrikamFiberDemo
C:\Users\hkamel\Source\Workspaces\FabrikamFiberDemo
Map & Get
Cancel | Advanced...
Project
Configure Workspace | Web Portal | Task Board | Team Room
My Work
Pending Changes
Source Control Explorer
Work Items
Builds
Settings
Solutions
You must configure your workspace mappings to open solutions for this project.
Solution Explorer
Team Explorer
Toolbox
Notifications
Ready

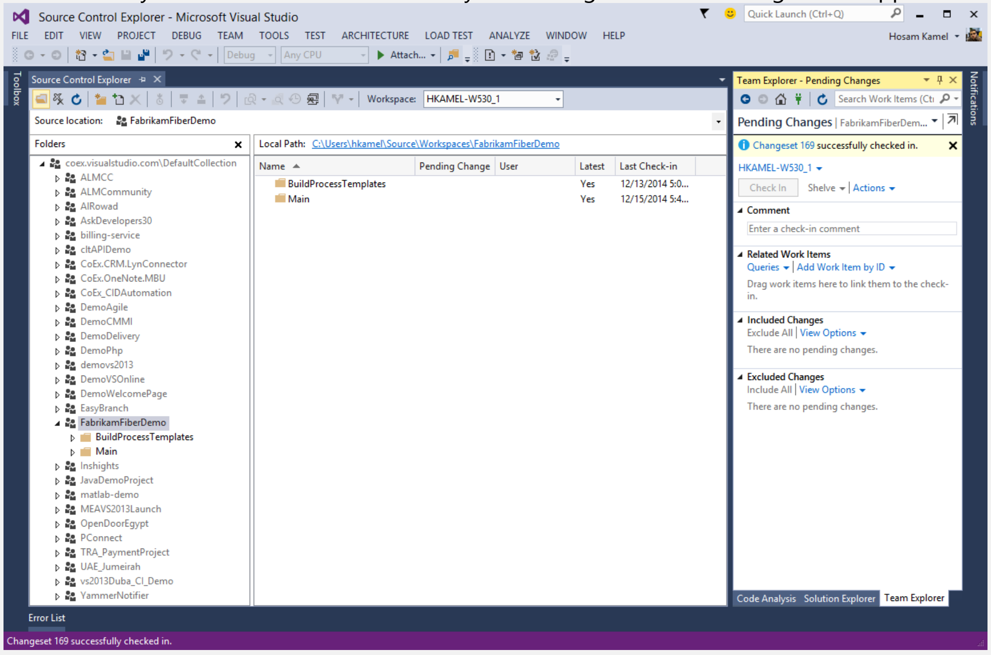
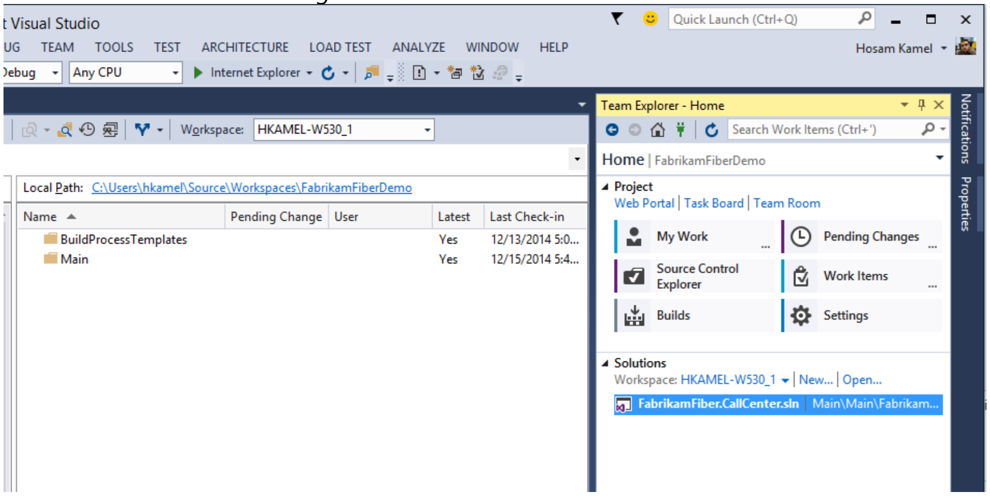
Task 4.3: Copy Code and Check-in

Step	Instructions
1 Open new workspace folder ☐ - Done	• Open Visual Studio. • Connect to Visual Studio Online project.
2 Copy unzipped version of main to workspace ☐ - Done	• On the top of Team Explorer click on the hyperlink that mapped to your hard disk folder.  • This will open the folder that is mapped to your workspace.

FabrikamFiber.CallCenter - Microsoft Visual Studio
FILE EDIT VIEW PROJECT BUILD DEBUG TEAM TOOLS TEST ARCHITECTURE LOAD TEST ANALYZE WINDOW HELP
Quick Launch (Ctrl+Q)
Hosam Kamel
Debug
Any CPU
Internet Explorer
Source Control Explorer
Workspace: HKAMEL-W530_1
Source location: FabrikamFiberDemo
Folders
Local Path: C:\Users\hkamel\Source\Workspaces\FabrikamFiberDemo
Team Explorer - Home
Search Work Items (Ctrl+')
Home | FabrikamFiberDemo
Project
Toolbox
Data Sou
Notifications

Step	Instructions
	• Copy the main folder (uncompressed version) to that folder.  FabrikamFiberDemo Hosam Kamel › Source › Workspaces › FabrikamFiberDemo Name | Date modified | Type | Size BuildProcessTemplates | 12/15/2014 4:22 PM | File folder Main | 12/15/2014 4:26 PM | File folder 2 items
3 Add files to your Visual Studio Online project ☐ - Done	• In Visual Studio Source Control window click on **Add Items to Folder** icon.  Source Control Explorer - Microsoft Visual Studio Workspace: HKAMEL-W530_1 Add Items to Folder Local Path: C:\Users\hkamel\Source\Workspaces\FabrikamFiberDemo • Select Main folder and click **Finish**  Add to Source Control Look in: C:\Users\hkamel\Source\Workspaces\FabrikamFiberDemo Select items to add to source control. Files already in version control are hidden. Name | Date modified | Type | Size BuildProcessTemplates | 12/15/2014 4:22:54 PM Main | 12/15/2014 4:26:47 PM Destination source control folder: $/FabrikamFiberDemo Advanced >> | Next > | Finish | Cancel

Step	Instructions
	• Main should be added now with pending changes icon.  Source Control Explorer - Microsoft Visual Studio Workspace: HKAMEL-W530_1 Source location: FabrikamFiberDemo Local Path: C:\Users\hkamel\Source\Workspaces\FabrikamFiberDemo Name | Pending Change | User | Latest | Last Check-in BuildProcessTemplates | | | Yes | 12/13/2014 5:0... Main | | | Yes | Team Explorer - Pending Changes HKAMEL-W530_1 Comment: Migrated version Included Changes (344)
4 Check-in your pending changes ☐ - Done	• Navigate to **Pending Changes** from Team Explorer, provide a comment and click **Check In**.  Source Control Explorer - Microsoft Visual Studio Workspace: HKAMEL-W530_1 Source location: FabrikamFiberDemo Local Path: C:\Users\hkamel\Source\Workspaces\FabrikamFiberDemo Name | Pending Change | User | Latest | Last Check-in BuildProcessTemplates | | | Yes | 12/13/2014 5:0... Main | | | Yes | Team Explorer - Pending Changes HKAMEL-W530_1 Checking in 344 items map1.png Comment: Migrated version Included Changes (344) • Wait until the check-in completes successfully.

Step	Instructions
	• You can verify the success of the check-in by confirming that a new changeset ID appears. 
5 Validate the code ☐ - Done	• Navigate to Team Explorer **Home** tab. • You will be able to see the migrated solution in the "**Solution**" sections.  • Double click to open the solution. • Navigate to Solution Explorer and make sure all of your projects are correctly bound to the Visual Studio Online project.

Source Control Explorer - Microsoft Visual Studio

Source location: FabrikamFiberDemo

Workspace: HKAMEL-W530_1

Local Path: C:\Users\hkamel\Source\Workspaces\FabrikamFiberDemo

Folders: coex.visualstudio.com\DefaultCollection — ALMCC, ALMCommunity, AlRowad, AskDevelopers30, billing-service, cltAPIDemo, CoEx.CRM.LynConnector, CoEx.OneNote.MBU, CoEx_CIDAutomation, DemoAgile, DemoCMMI, DemoDelivery, DemoPhp, demovs2013, DemoVSOnline, DemoWelcomePage, EasyBranch, FabrikamFiberDemo (BuildProcessTemplates, Main), Inshights, JavaDemoProject, matlab-demo, MEAVS2013Launch, OpenDoorEgypt, PConnect, TRA_PaymentProject, UAE_Jumeirah, vs2013Dubai_CI_Demo, YammerNotifier

Name	Pending Change	User	Latest	Last Check-in
BuildProcessTemplates			Yes	12/13/2014 5:0...
Main			Yes	12/15/2014 5:4...

Team Explorer - Pending Changes | FabrikamFiberDem...

Changeset 169 successfully checked in.

HKAMEL-W530_1 — Check In | Shelve | Actions

Comment: Enter a check-in comment

Related Work Items: Queries | Add Work Item by ID — Drag work items here to link them to the check-in.

Included Changes: Exclude All | View Options — There are no pending changes.

Excluded Changes: Include All | View Options — There are no pending changes.

Changeset 169 successfully checked in.

Team Explorer - Home | FabrikamFiberDemo

Project: Web Portal | Task Board | Team Room

My Work · Pending Changes · Source Control Explorer · Work Items · Builds · Settings

Solutions — Workspace: HKAMEL-W530_1 | New... | Open...

FabrikamFiber.CallCenter.sln   Main\Main\Fabrikam...

Conclusion

NOTE This walkthrough performed a simple migration, using out-of-the-box tools, as recommended by **Understanding TFS migrations from on-premises to Visual Studio Online – Part 1: Concepts**. It is important that you understand the limitations, as well as implications if you wish to migrate more.

Let us review a brief migration retrospective with Willy-Peter, our hypothetical user, and our migration experts Martin, Hosam, Wouter, and Josh.

Willy-Peter is very happy with the migrated team project, but has many questions:

Question	Response
At a first glance Work Items and version control data looks great, thanks guys. What has ***not been migrated****, and why?*	**Josh**: Test cases, steps, and data are not migrated, along with check-in/Work Item links, build definitions, and version control history. **Wouter:** The things Josh mentioned are not migrated because we are doing a snapshot migration. This means that we only take the current point in time. Queries do not allow us to query for the whole Work Item history, making it impossible to copy with Excel. To migrate the version control history, more advanced tooling is necessary. **Martin:** We can additionally migrate Build Definitions, Area Path, Iteration Path, Test Cases, Shared Steps, Test Data, Test Plans, and Test Suites which would require code and significant additional time. We would, however, be unable to migrate Test Results, Builds, and Code Coverage as this is not possible. **Hosam:** It is doable but not through this approach. Moving Work Items with tracking history will require significant time and special migration consideration,
We invested a lot of time linking check-ins to Work Items. ***Why are the links missing*** *and what would the implications be to migrate them as part of a migration to Visual Studio Online?*	**Josh**: The links are missing because the changeset IDs and Work Item IDs are automatically generated, and there is no way to recreate those IDs when migrating using the standard toolsets. Migrating these into VSO would require a substantial amount of time, as those links would have to be recreated manually. **Wouter:** Without any custom tooling support all those links need to be created by hand. This is very time consuming since the IDs are not the same as in your on-premises version. **Martin:** As we did not bring across each changeset (the history) and instead have one changeset that represents the current state of the code there are no individual changesets to associate with the Work Items. We could associate every current Work Item that did have a link with that single changeset but that would provide little value. **Hosam:** we did the migration in two steps: Work Items and Source Code. They are totally disconnected steps which mean we lost any relationship between code and Work Items. Since we are migrating the history you have only one version of your code "The Latest" and the default new state for your Work Items.
Our build teams are going to ask about their build definitions and what needs to be done to ***migrate the builds*** *to Visual Studio Online.*	**Josh**: They can be migrated, but it requires work to get the configuration bits moved over. **Wouter:** Your build definition templates are migrated as a part of your source control migration. The build definitions can be recreated with those templates. You need to manually copy all configuration settings from your on-premises definition to VSO. **Martin:** We could create a script that would migrate the build definitions across, which would take time. If you have 10 builds it is probably not worth it, if you have 1000, then it may be worthwhile. **Hosam:** I agree that we migrated the artifacts related to the build in terms of build definition templates, but you do have to manually create the build. We are not migrating any previous build history or output. One point to mention is that even though we clone the build you have to manually check the configuration since it will be changed if you have different source control paths and branches. Also, refer to VSO build agent capabilities to understand if your application will required any additional software or will work fine with the hosted build controller http://www.visualstudio.com/get-started/hosted-build-controller-vs
We discussed history in our planning workshops and agreed that it is not worth migrating. Can you please reiterate the ***key reasons for not migrating history****?*	**Josh**: It is very time and labor intensive to migrate history. The return on investment for what the history provides is rather low when compared to what is required to perform that detailed migration. In addition, typical use cases around viewing code history tend to settle around figuring out when something changed (or who changed it), and that can be done from the original instance—at a much lower time/labor cost—if absolutely necessary.

Question	Response
	Wouter: This all comes down to a cost/benefit. Migrating history is very time consuming and error prone. Instead, you could keep the on-premises version around as an archive for whenever someone needs to look at the history. **Martin:** I agree with the above and would add that in most cases the use of history is very low. Developers mostly do not look at history. **Hosam:** I agree, the use of history is very low and is not worth the effort to move it.
*You mentioned custom migration tools in your secret **migration toolbox**? What are they and when should we consider them?*	**Josh**: OpsHub, streamlines migration of standard items from TFS to VSO. Custom .NET code leverages the TFS and VSO APIs, for when you are feeling spunky and want fine-grained control over migration options. **Wouter:** OpsHub is an option for migrating from on-premises to VSO. You can also use the simple migration strategy you have seen in this walkthrough and supplement it with some .NET code that leverages the TFS APIs but you can understand why that is more time consuming. **Martin:** For most folks, the TFS Integration Tools are the only option for large scale migrations, with history. However these tools are incomplete and incredibly error prone. If you can find a commercial tool you would be better with that but the cost is usually prohibitive. **Hosam:** Whenever you see value bringing the history along during your migration, then you have to consider a tool. Every tool has limitations, so you have to pick what really gives you maximum value with minimum tradeoffs. OpsHub, TFS Integration tool, and Tasktop are all good tools to consider.
*If we wanted to add some history and especially the links, would we have to **re-do the migration** or could we **morph the new team project** on Visual Studio Online?*	**Josh**: You would be able to morph the new team project if those items are essential. Though it would be advisable to weigh how much of that information needs to be migrated as the time spent morphing the project may outweigh the overall benefit. **Wouter:** Morphing is an option but it is time consuming. **Martin:** You would have to redo the migration as history as in the past and you are already at a particular point in time. In order to add history, you would need to wipe out your Source Code and start again with the oldest version that you want to keep. **Hosam:** I agree, with the responses above,
*If we wanted to move to **another Process Template** on Visual Studio Online, for example CMMI, what would be your response?*	**Wouter:** Migrating the Source Code is not an issue since that is not linked to the Process Template. Migrating Work Items is another story. If you really want to migrate Work Items while changing the Process Template, you should first change the Process Template on-premises by using command-line tools like witadmin. This is not easy to do, but it is possible. **Martin**: This is a fairly straight-forward process that involves first morphing your on-premises project to be the same as the one that you want to use in VSO: Upgrading your Process Template in Team Foundation Server **Josh**: I agree with Wouter and Martin. It is not a simple process, but it is attainable. **Hosam:** The simple migration approach we used is just mapping Excel rows and cells, taking into consideration the data validation coming from VSO project. This is achievable by just mapping fewer fields containing the main information in Excel. In the end we are moving to an initial state and the data fields can be easily mapped.
*Developers have mentioned an interest in dogfooding Git. We migrated from TFVC to TFVC, would it be feasible to migrate from **TFVC to Git**?*	**Wouter:** This is absolutely possible. Instead of creating a Team Foundation Version Control (TFVC) based project on VSO, you create one based on Git. After cloning the repository locally, you copy your sources to it and do your first commit and push. **Martin**: However, at this time you cannot have more than one source control type per Team Project. If you plan on moving to Git eventually, then you would have to create a new Team Project and migrate your Work Items again. **Josh**: I agree with the points above, noting that the one source control per team project is especially important.

Question	Response
	Hosam: I agree, with the responses above and you may want to have a new project created on VSO just for dogfooding.
Is the mapping of users an Excel specific problem?	**Peter:** No, TFS Integration Platform and other tools operating on WIT are also similarly affected by inconsistencies of user information. Display names are strings, which need to match up, for data to end up on the right identities. I would treat this as a general migration problem, not an excel only issue.

Thanks for taking the time to read this and keep a look out for more articles from the ALM Rangers[4].

Reference Information

- Migration and Integration Solutions[5]
- TFS Integration Tools Blogs and Reference Sites[6]
- TFS Planning, Disaster Avoidance, and Recovery Guide[7]
- Import Excel data into TFS with History[8]
- Migrating from an On-premises Team Foundation Server to Team Foundation Service Preview Using the TFS Integration Tools[9]

Martin Hinshelwood is an independent consultant with over 14 years of software development experience. He currently specializes in ALM from Scrum and EBMgt to TFS and Visual Studio. He is a Microsoft ALM MVP and ALM Ranger. He has extensive migration experience and a number of custom tools to help you with migrations.

You can reach Martin via his blog at nakedalm.com/blog. You can also follow him on Twitter at twitter.com/MrHinsh.

Hosam Kamel is a Senior Premier Field Engineer (PFE) at Microsoft, and a Visual Studio ALM Ranger specializing in providing field-level support for Visual Studio Application Lifecycle Management (ALM) and Team Foundation Server. He focuses on helping software professionals and organizations build better applications and solutions using Microsoft Application Lifecycle Management technologies, practices, and tools. He works with development teams, supporting them, removing the traditional silos between development, testing, and project management to establish cohesive processes with the Visual Studio ALM tools. His experience with Team Foundation Server and Visual Studio started with the beginning of the Visual Studio Team System (VSTS) and its product family nearly seven years ago. He is also an active Visual Studio ALM Ranger with lots of projects contributions. He has authored several articles and spoken at various user groups, events, and conferences. Prior to joining Microsoft, Hosam worked as a Regional Technology Solution Professional for MEA Center of Expertise.

Wouter de Kort started with software development when he was 7 years old. He now works as a Microsoft Lead ALM Consultant at Ordina. Wouter helps organizations to stay on the cutting edge of software development on the Microsoft stack. He focuses on Application Lifecycle Management and Software Architecture for web applications. He loves solving complex problems and helping other developers to grow. Wouter authored several books, is a Microsoft Certified Trainer, and an ALM Ranger. You can find him on Twitter (@wouterdekort) and on his blog at http://wouterdekort.blogspot.com.

Josh Garverick is a software architect, developer, and ALM enthusiast who is one of the newer members of the ALM Rangers. He has broad cross-platform experience from developing applications to setting up build and deployment environments, including on-premises and cloud-based solutions. He is a contributor to the .NET wrapper for the Docker remote API (Docker.DotNet). You can find his other OSS contributions at github.com/jgarverick, and follow him on Twitter at twitter.com/jgarverick.

THANKS to the following technical experts for reviewing this article: Bill Heys, Mario Rodriguez, Peter Antal, Wendell Phillips, and Willy-Peter Schaub.

[4] http://aka.ms/vsarunderstand

[5] http://msdn.microsoft.com/en-us/vstudio/bb840033

[6] http://aka.ms/vsartoctip

[7] http://aka.ms/treasure5

[8] http://nakedalm.com/import-Excel-data-into-tfs-with-history/

[9] http://msdn.microsoft.com/en-us/magazine/jj130558.aspx