Cordova: Fast and Easy D365F&O TFVC DevOps

Administration & User's Guide Version 1.0.11

for Microsoft Dynamics 365 for Finance and Supply Chain Management

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Atlantic Oak LLC.
5 Concourse Parkway
Suite 3000
Atlanta, GA 30328
United States of America
Phone: +1 (470) 582-0912
E-Mail: support@atlantic-oak.com
Website: https://atlantic-oak.com

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Version History

Version	Software Version	Date	Description
001.000.001	001.000.064.000	04/11/2024	First public release.
001.000.001	001.000.066.000	04/12/2024	Fixed issues related to SQL referential integrity.
001.000.003	001.000.066.000	04/16/2024	Updated documentation to 1.0.66 standards.
001.000.004	001.000.068.000	05/08/2024	Microsoft work account integrated login. Microsoft AppSource integration.
001.000.005	001.000.071.000	05/14/2024	Improved login experience.
001.000.006	001.000.071.000	05/15/2024	Added troubleshooting section.
001.000.007	001.000.072.000	05/16/2024	Fixed issues with the merge log.
001.000.008	001.000.074.000	05/29/2024	Automatic 30-day trial without registration. Microsoft model auto-detection. Atlantic Oak licensing outside AppSource.
001.000.009	001.000.075.000	05/30/2024	Trial extension renewal dialog.
001.000.010	001.000.080.000	07/22/2024	Changes to the solve conflicts dialog, undo or check in form improvements, database versioning error.
001.000.011	001.000.083.000	08/08/2024	Updates to the settings forms.

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Introduction

The Cordova system was created to make it easy to promote Dynamics 365 for Finance and Operations source code between TFVC (Team Foundation Version Control) code branches.

Cordova will also make it easy for you to communicate those code promotions to your team.

Cordova has powerful auditing capabilities that will allow you check when and how those code promotions have been made.

Cordova will also allow you to test the compilation of the remote repositories after a code promotion to make sure that your Azure Pipelines will execute successfully.

Cordova will significantly cut the time you spend doing DevOps work for Dynamics 365 for Finance and Operations.

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Trial Period

You can download the latest version of the product from https://atlantic-oak.com/Downloads/D365FO_Cordova_TFVC.

You can test trial Cordova for a period of 30 days. No registration required. You can request extensions to this trial period.

During the evaluation period, prospective clients are entitled to the same level of support as our regular customers.

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Support

If you require assistance, experience problems or if you have any questions or comments send us an e-mail to support@atlantic-oak.com.

Our support services include answering questions about the existing functionality of our software, general suggestions and expedited bug fixing. Regular support requires competency in the technology and development environment being used (Dynamics 365 for Finance and Operations, Visual Studio and Azure DevOps).

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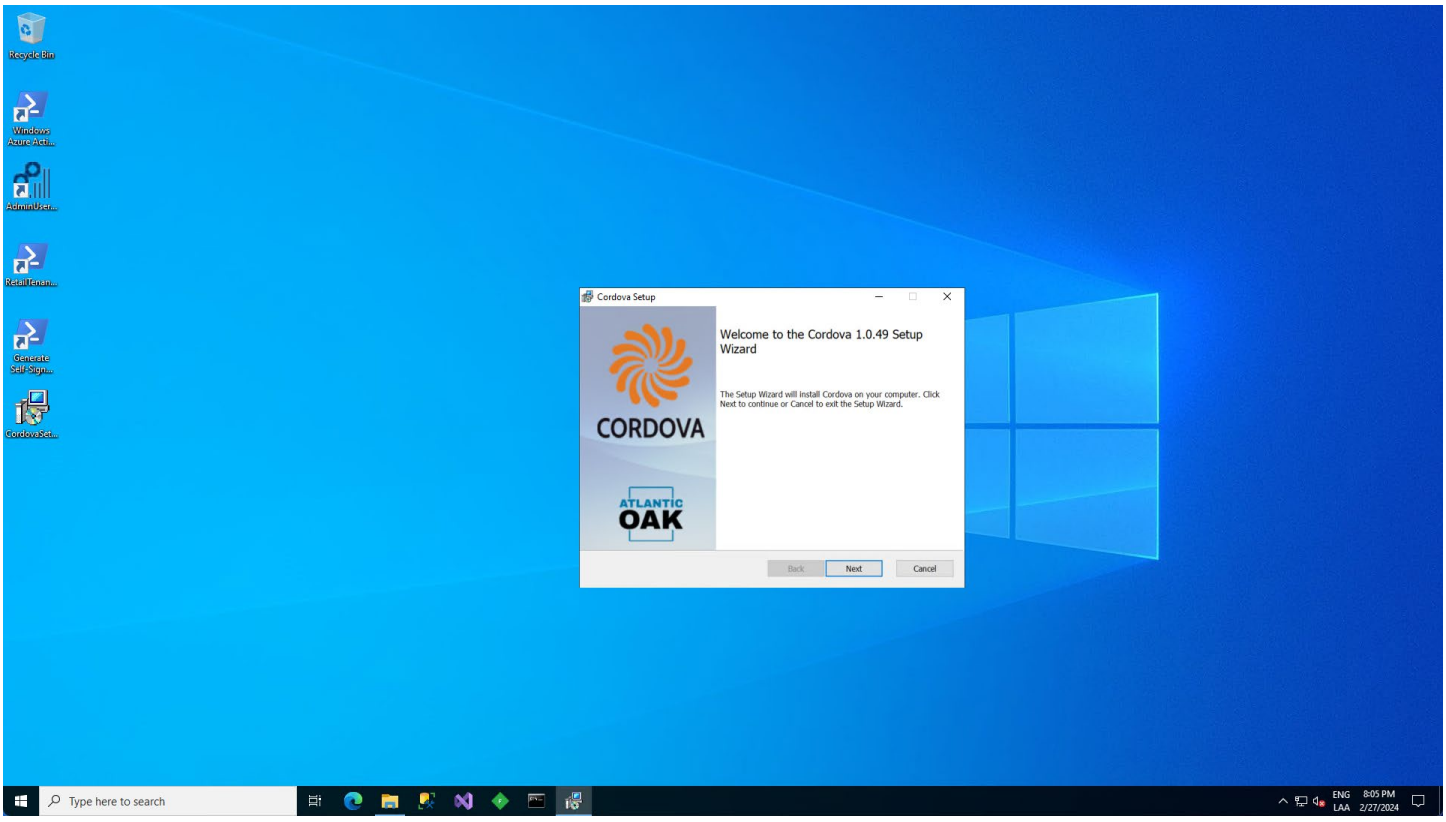
Installation Instructions

Cordova can be installed in any Windows system. Since Cordova requires SQL Server and access to the TFVC repositories, plus the x++ compilers, it makes sense to install Cordova on a D365F&O one box environment. The one box environment can be a local or cloud hosted environment. The install program will search for earlier versions of Cordova and will remove them if present. There is no need to uninstall them first.

Once you have downloaded the installation package from our website at:

https://atlantic-oak.com/Products/D365FO_Cordova_TFVC_Management_System

Important: you must unblock the .zip file. Extract and double click on the CordovaSetup_V_XXX.XXX.XXX.XXX.msi file contained in the zip file. It will launch the setup wizard.



Click on the **Next** button.

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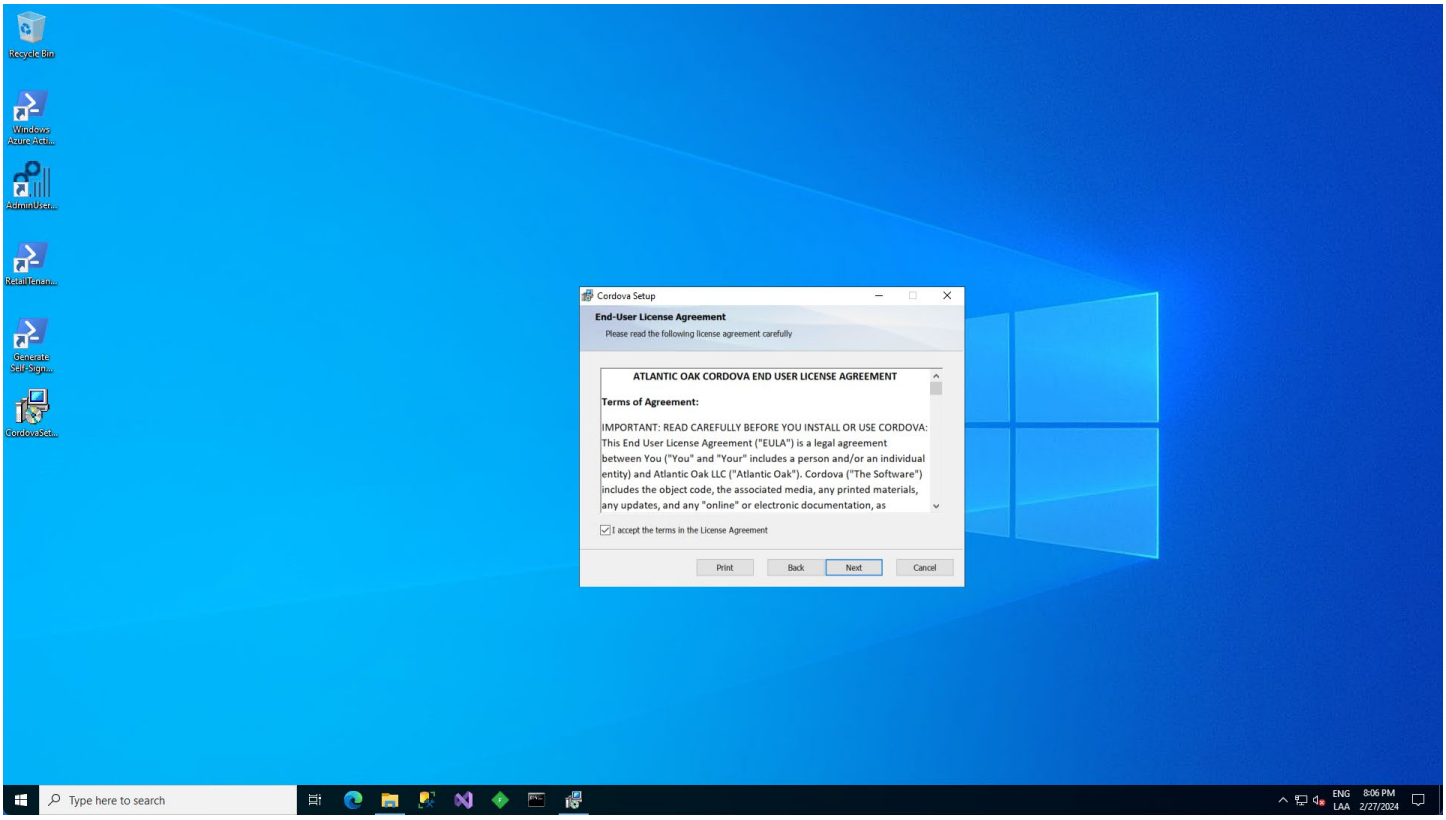
Read the Atlantic Oak Cordova End User License Agreement. Once you have finished, mark the **"I accept the terms in the User Agreement"** check box.



Click on the **Next** button.

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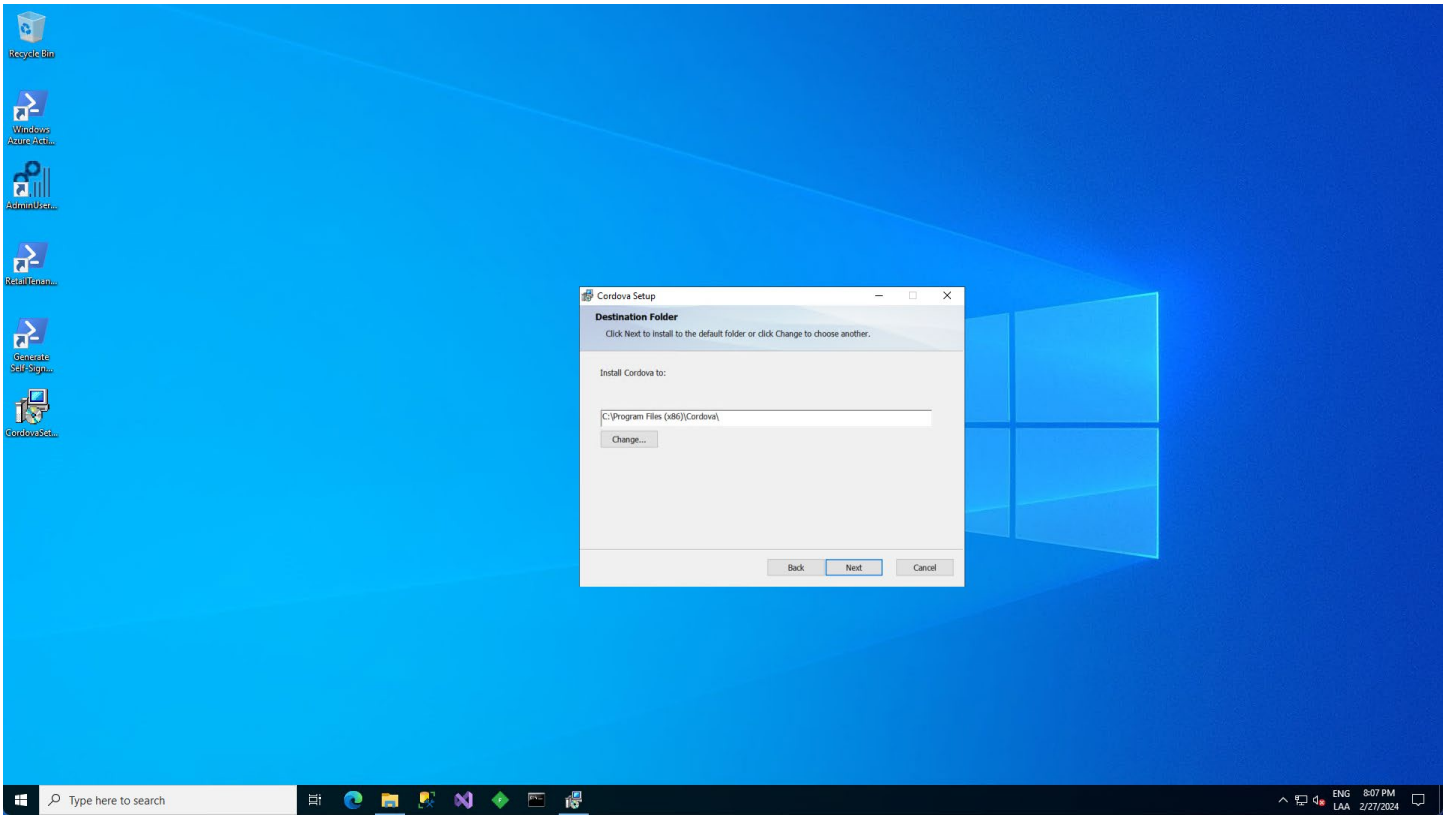
Select the install directory or leave the default selection (recommended).



Click on the **Next** button.

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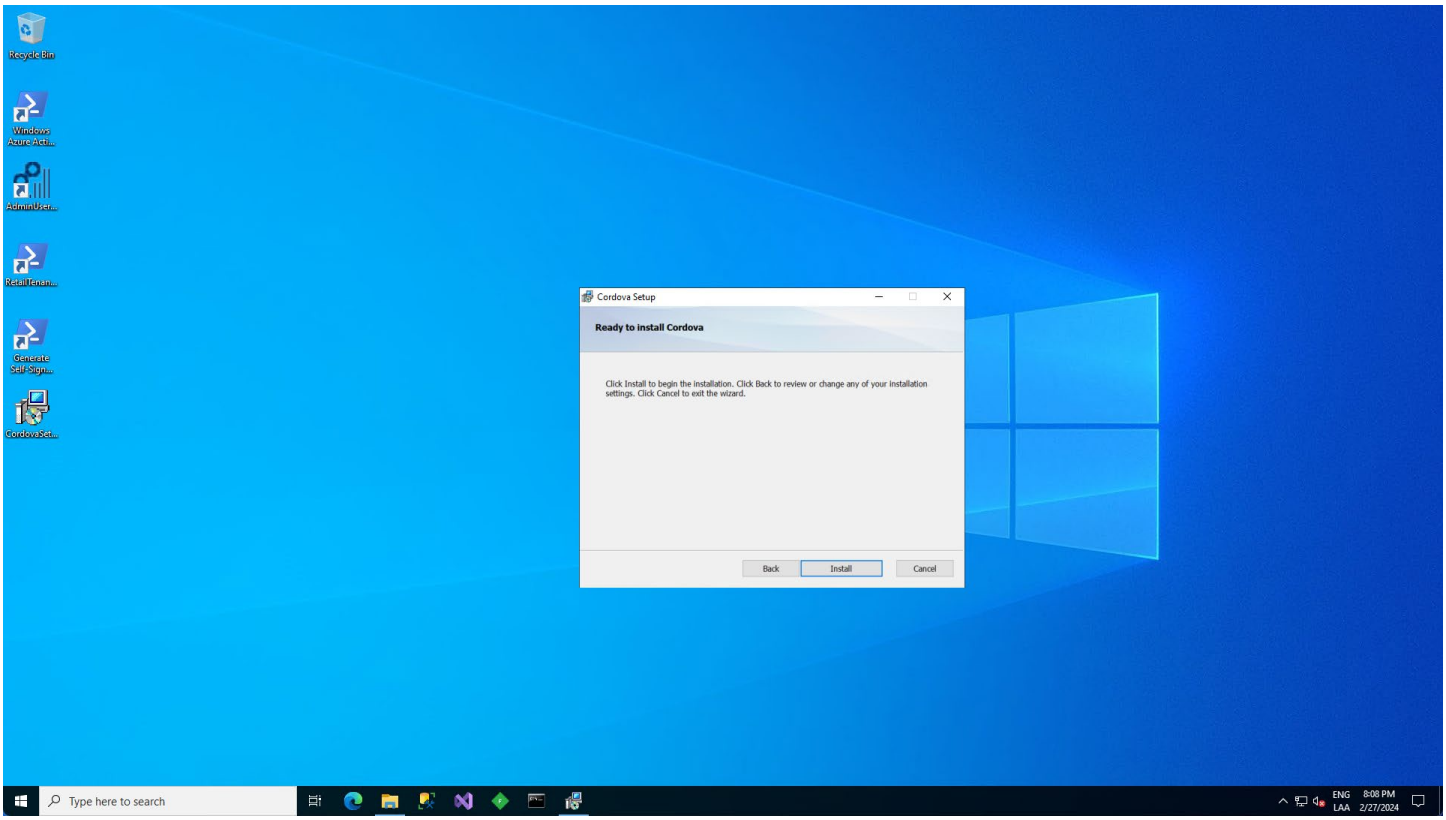

Click on the **Install** button to continue.

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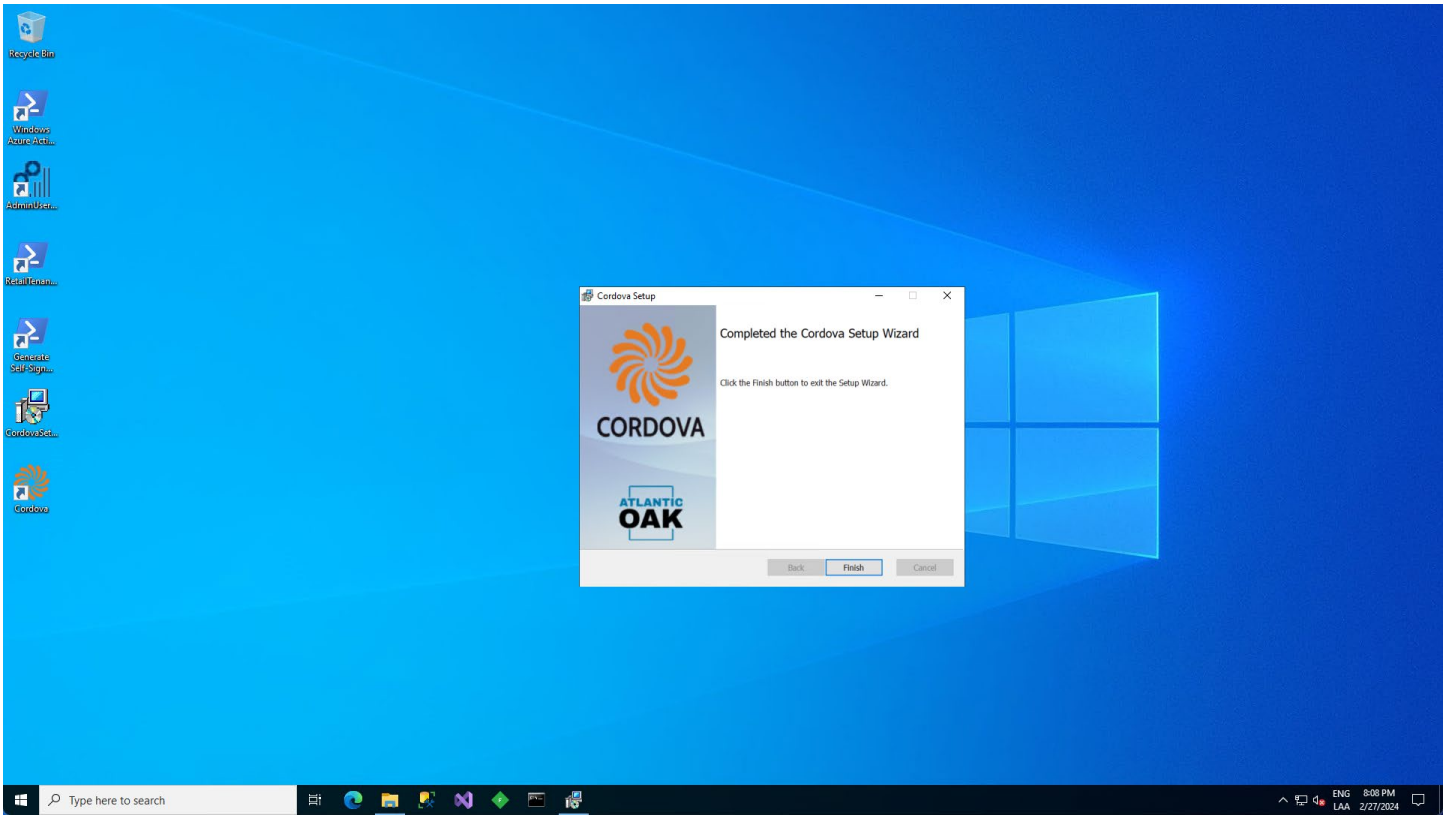
Once the install has finished successfully you will see the completion screen.



Click on the **Finish** button to exit the setup wizard.

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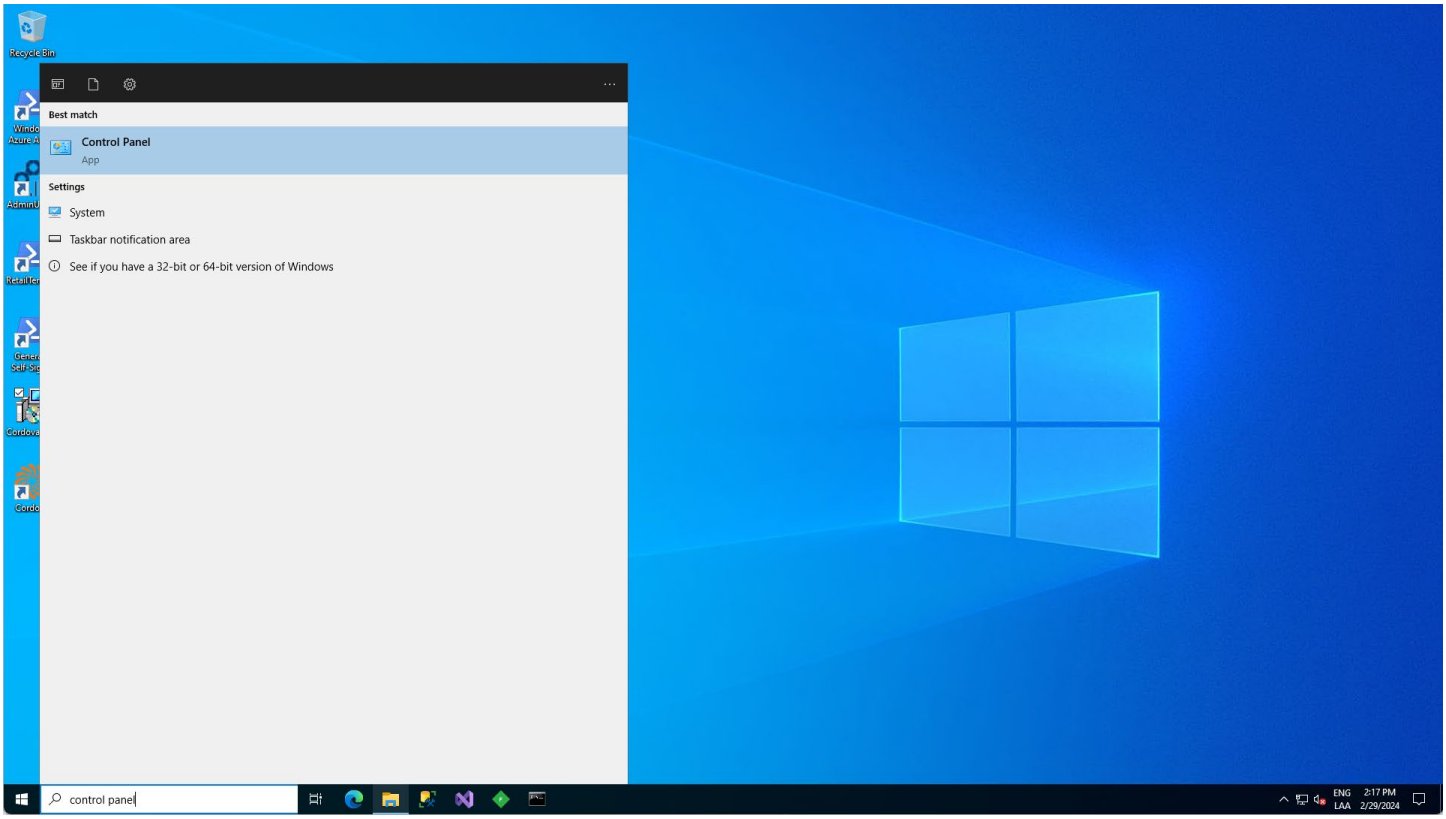
Uninstall Instructions

Type **“control panel”** in the Cortana search bar at the lower left-hand side of the windows environment.



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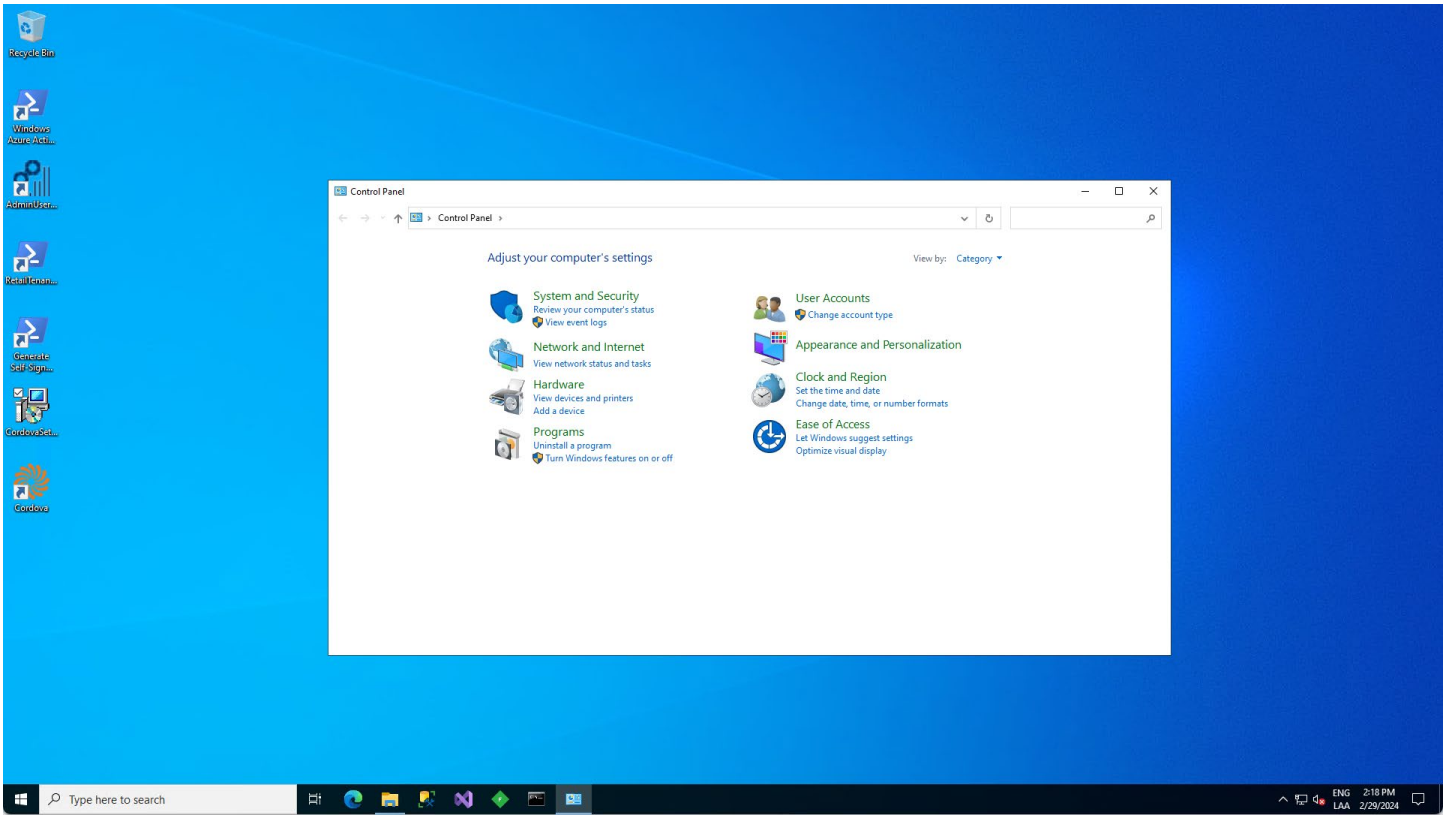
Click on **“Uninstall a program”** under **Programs**.



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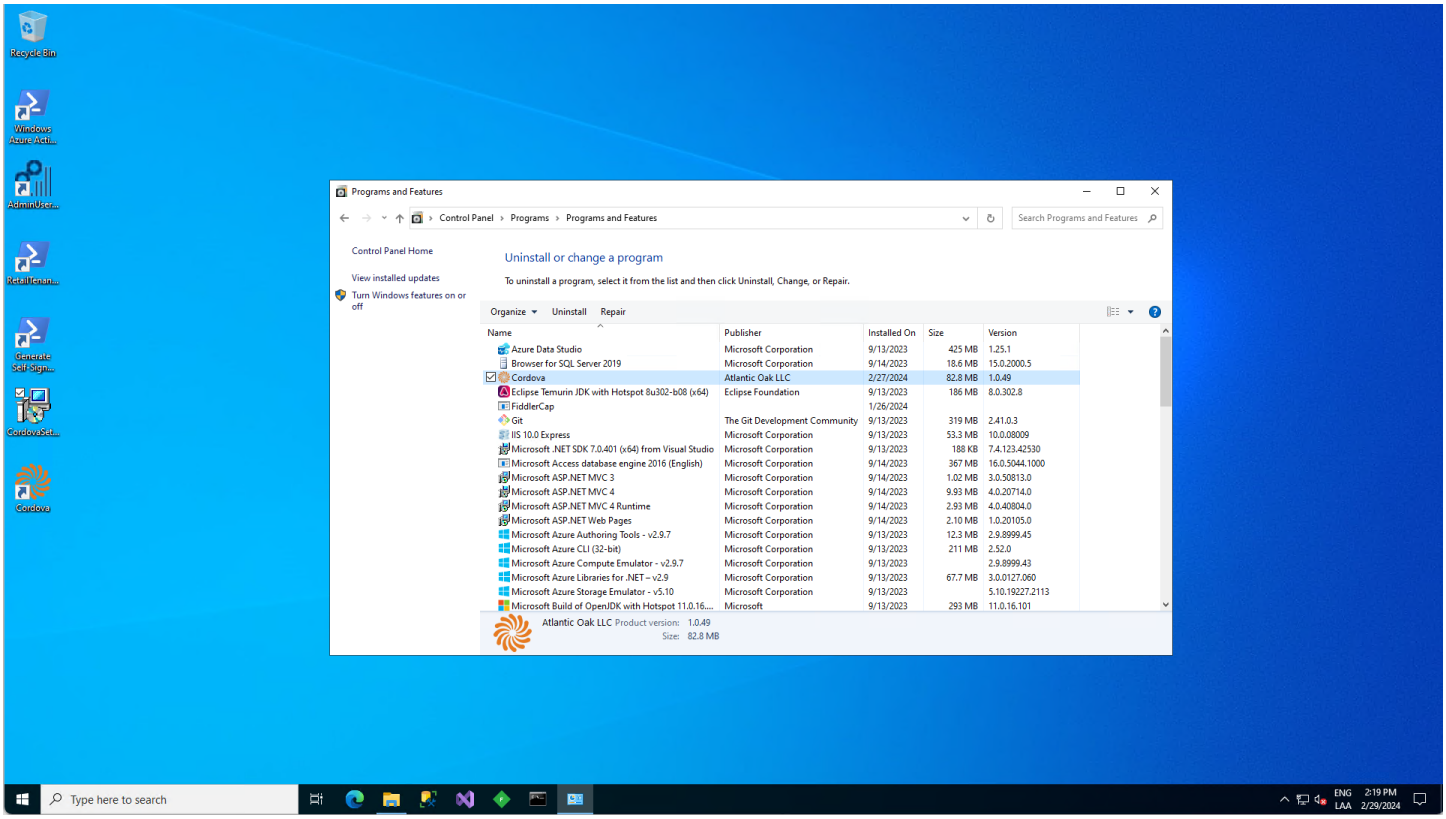
Select **Cordova** and click on the **Uninstall** button.



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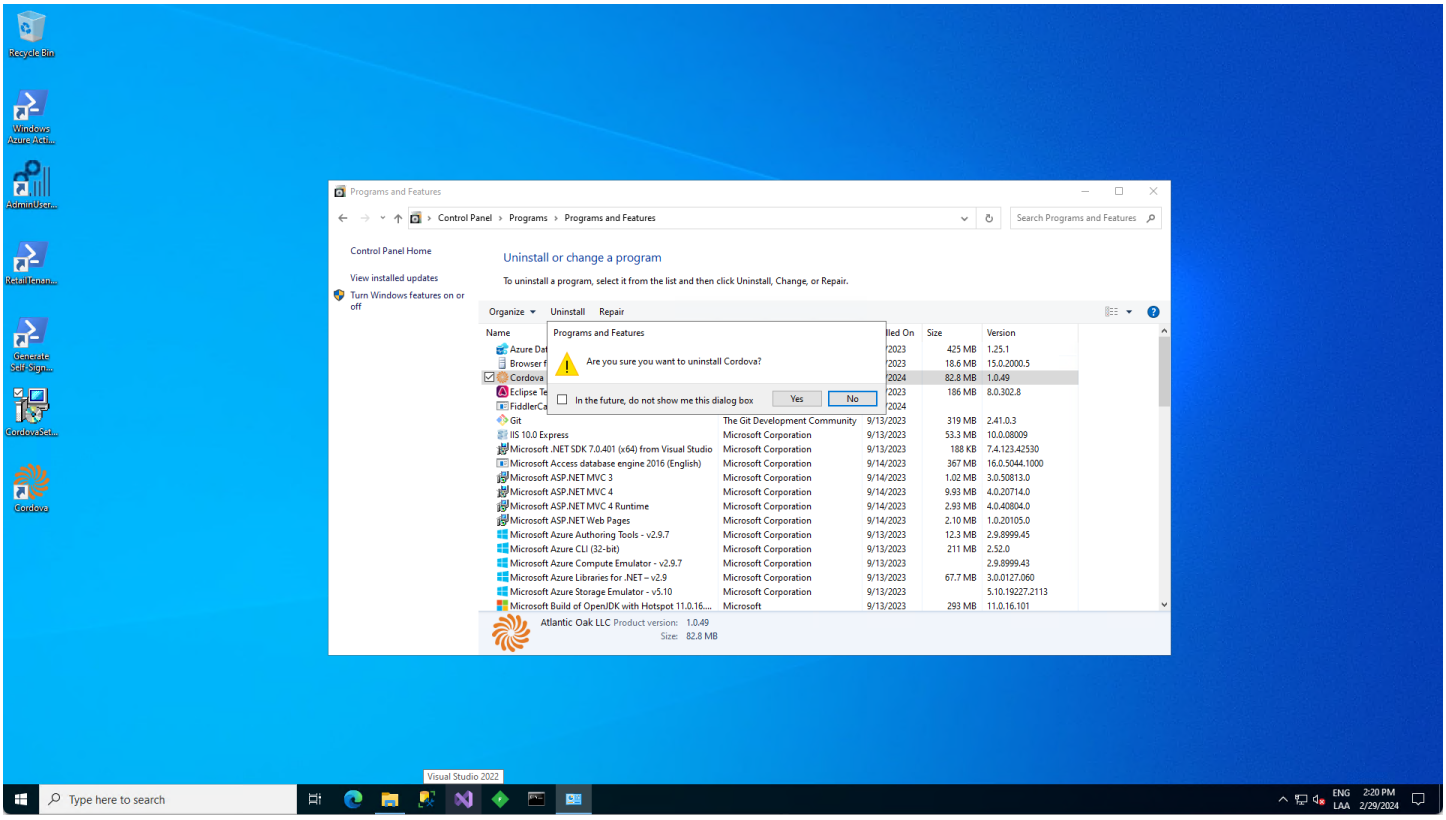
The system will prompt you: **“Are you sure you want to uninstall Cordova?”,** click on the **Yes** button.



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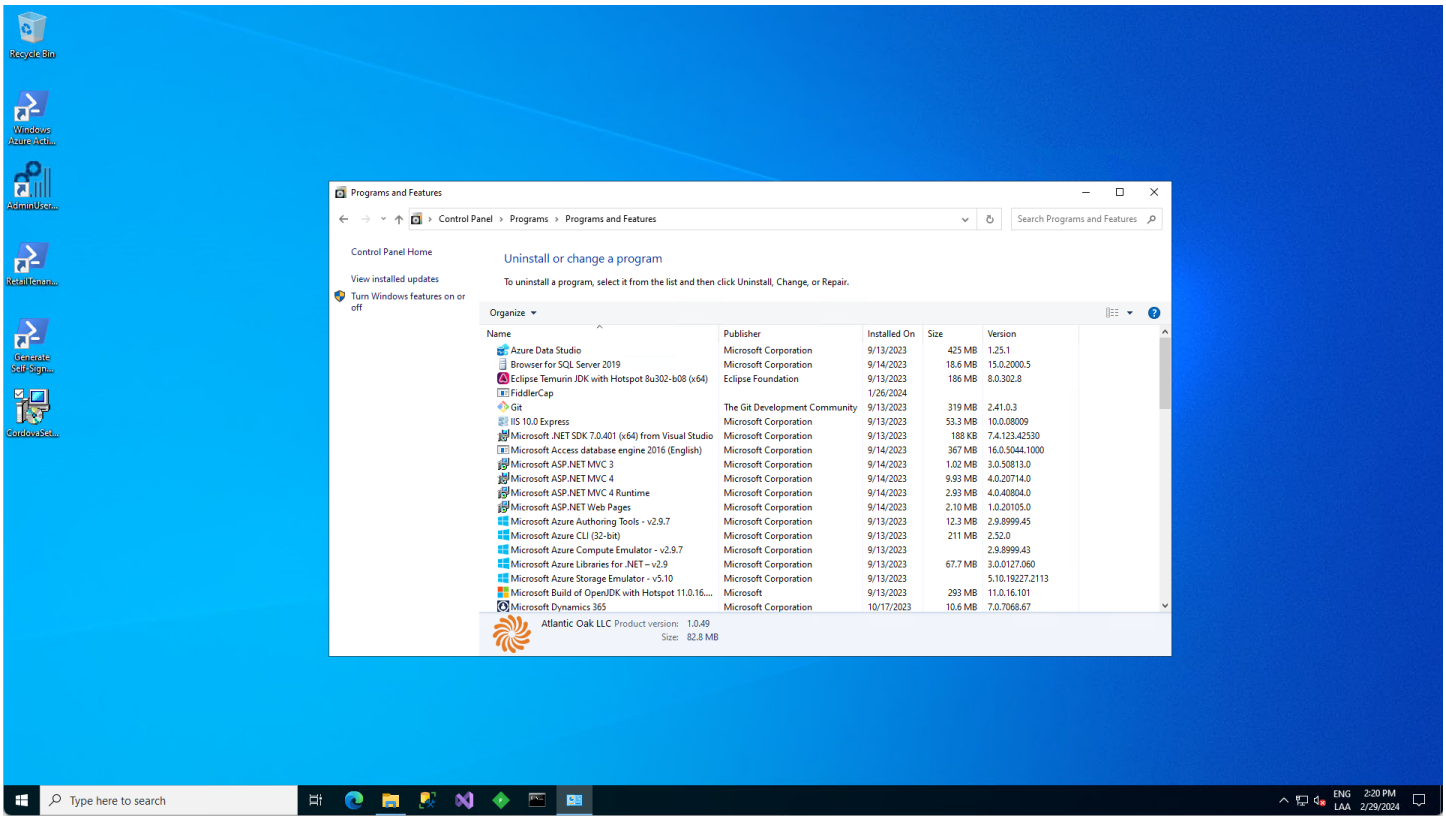
After a few seconds **Cordova** will be uninstalled from your system.



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Setup

To begin setup, after successfully installing the product, click on the Cordova desktop icon that was created on your desktop during the install process.

After the initial 30-day trial period, the system will ask the user to login using their Microsoft Work Account. In order to log in, the user must then have a valid Cordova license.

License

After the initial 30-day trial period, each user will require a license. You can purchase licenses in Microsoft AppSource:

https://appsource.microsoft.com/en-us/product/web-apps/atlanticoakllc16193044214 51.96150ef4-9f0e-40b3-abbd-3ef0a50ea60c?tab=Overview

By creating a subscription in AppSource you are automatically granted a 1-month trial period. You can cancel anytime during this trial period.

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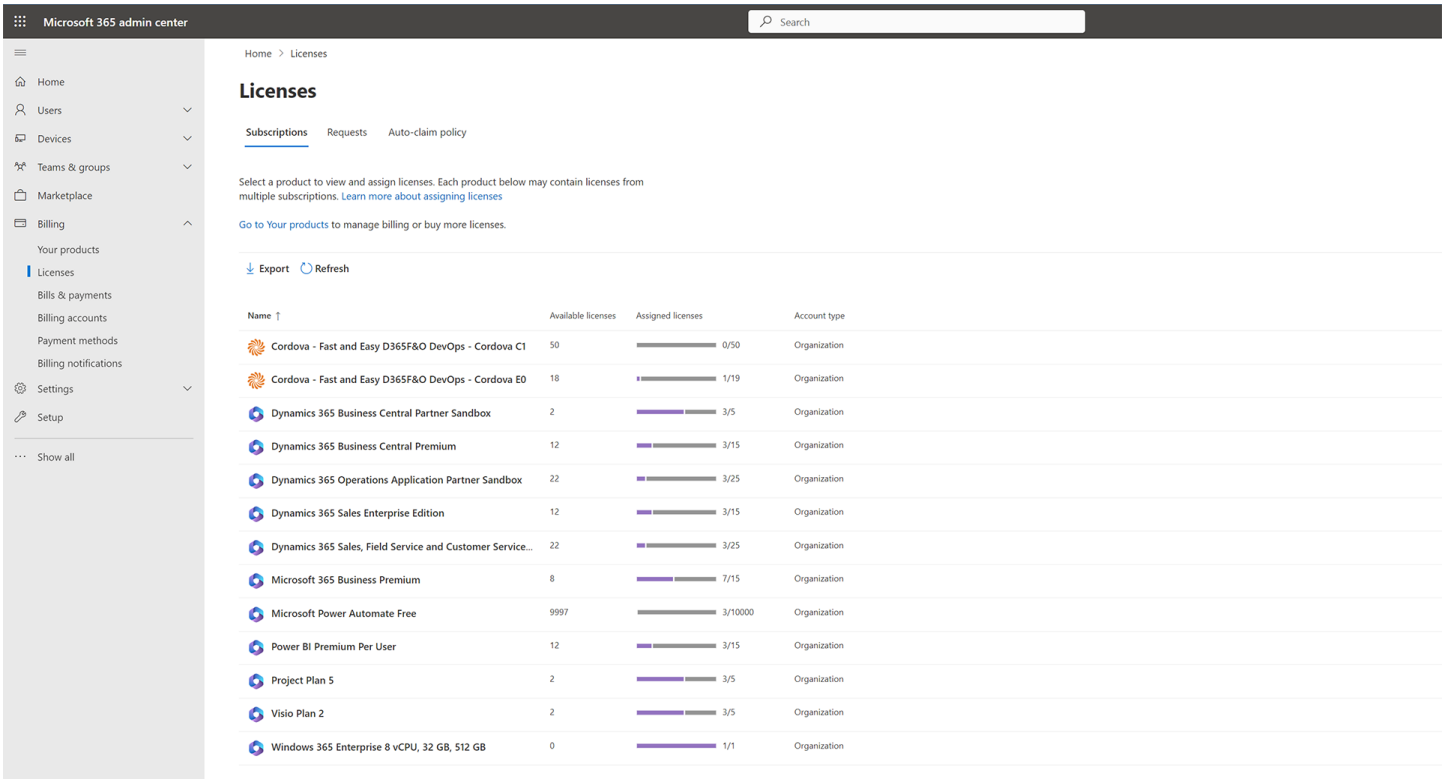
After purchasing licenses, you can assign them to users in your organization by going to the Microsoft 365 Admin Center:

https://admin.microsoft.com/Adminportal/Home#/licenses



Users will need asigned licenses if they are going to use Cordova beyond the 30-day trial period.

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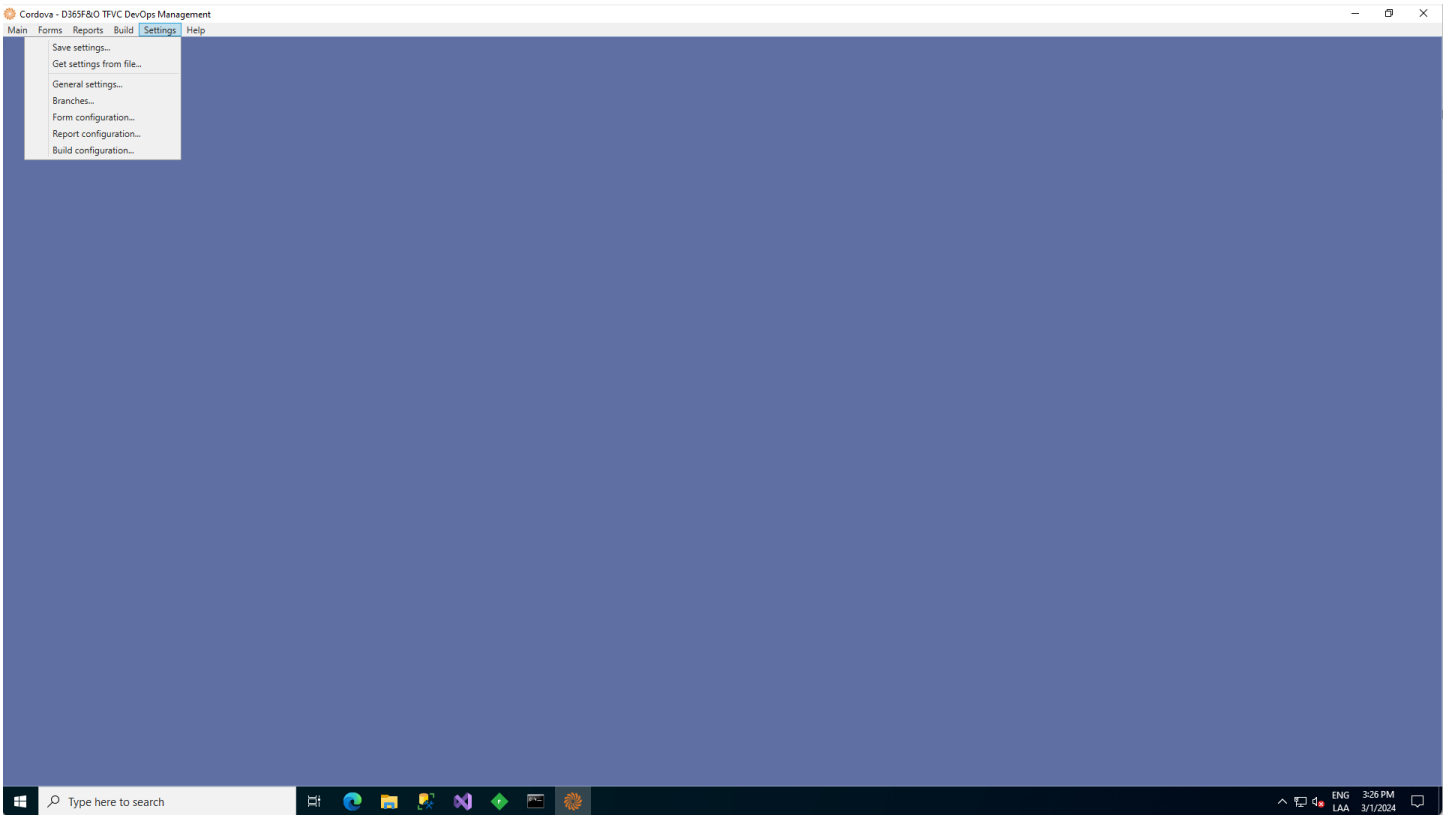
When Cordova loads for the first time, you must configure all the settings in the system.



There are five different configuration screens:

- General settings.
- Branches.
- Form configuration.
- Report configuration.
- Build configuration.

General settings should be configured first, followed by branches.

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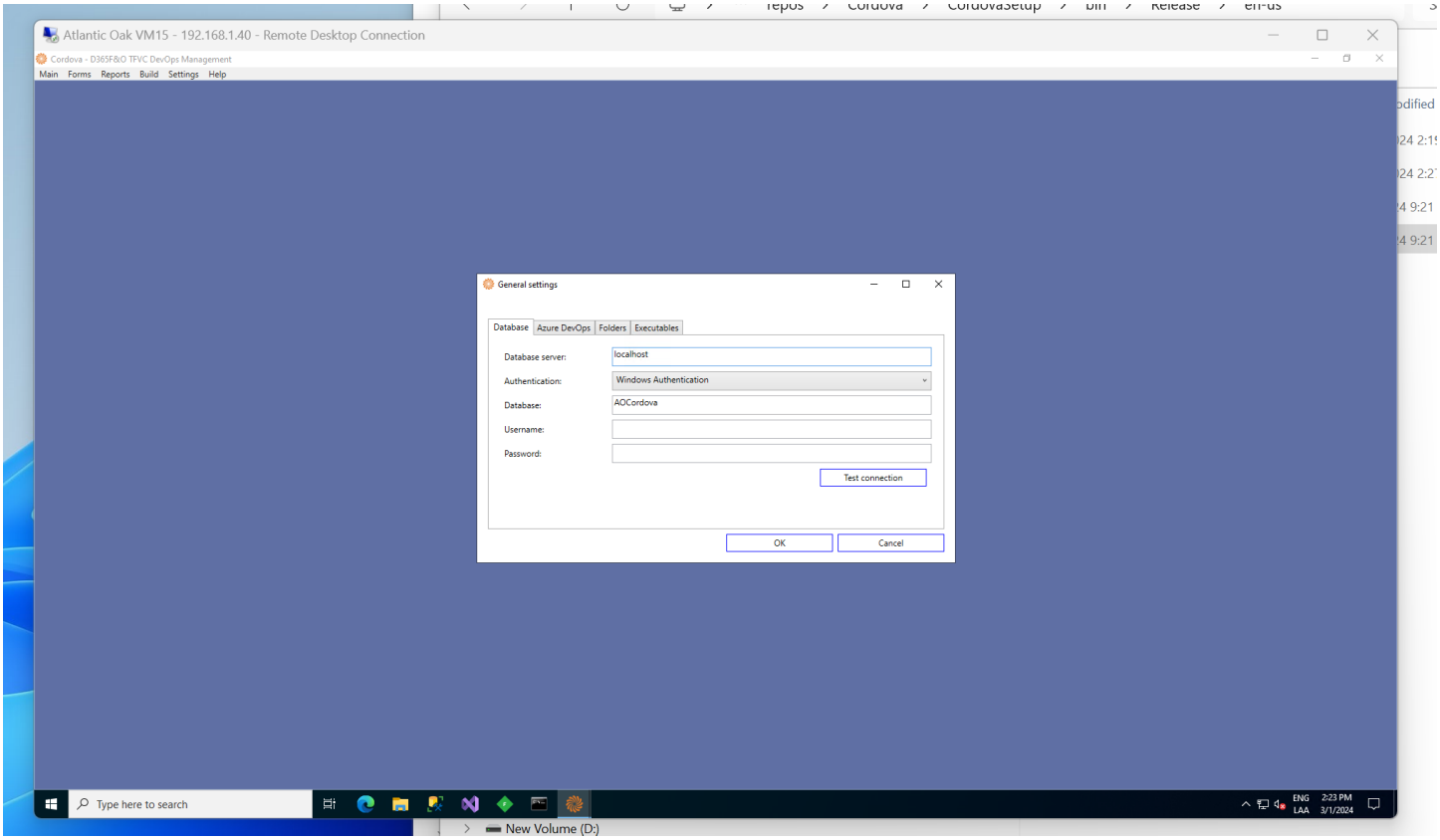
General Settings

The General settings dialog is divided into four tabs:

- Database
- Azure DevOps
- Folders
- Executables

The Database tab is used to specify Sql Server connection information to the Cordova database that is created on system startup. **In a one box environment the settings are populated by default. They should not be changed, unless needed.**



Tab controls:

Database server: The SQL database server name. Generally **localhost** for one box environments. It can also be an IP address, or **.\SQLExpress** for SQL express installs for example.

Authentication: Windows Authentication or SQL Server Authentication.

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Database: The name of the Cordova database. On initial startup Cordova will create a database called AOCordova.

Username: The SQL server administrator username.

Password: The SQL server administrator password.

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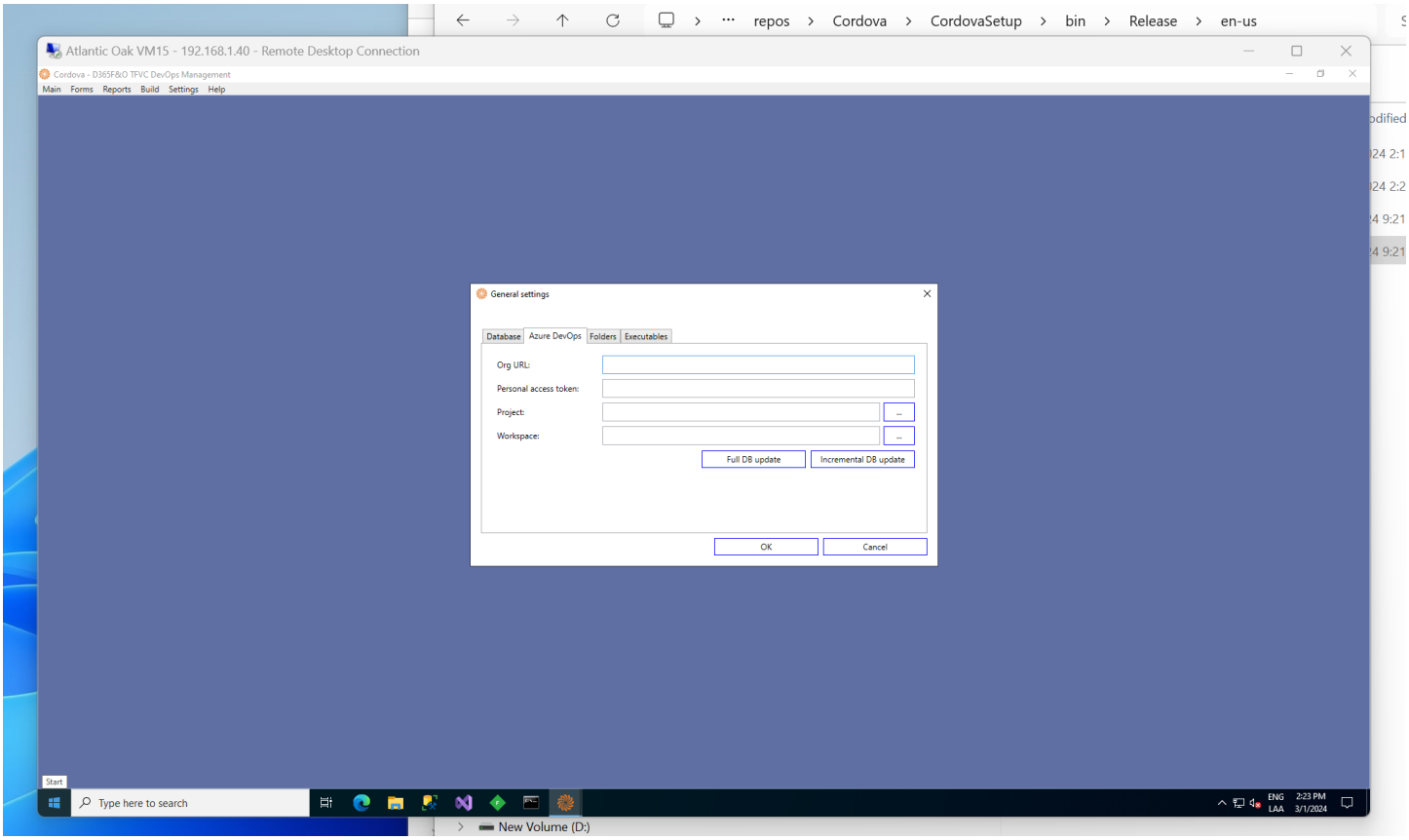
In the Azure DevOps tab, you must enter the settings to connect to the Azure DevOps instance that is being used by your organization,



Tab controls:

Org URL: It is generally of the form https://dev.azure.com/YourOrganizationName. If in doubt, ask your system administrator or contact us at support@atlantic-oak.com.

Personal access token: The personal access token created in Azure DevOps to allow third party software access. You can navigate to: https://learn.microsoft.com/en-us/azure/devops/organizations/accounts/use-personal-access-tokens-to-authenticate for more information.

Project: The name of the project that contains Dynamics 365 for Finance and Operations code. An organization can have several projects so ask your system administrator or contact us at support@atlantic-oak.com. Use the button on the left (the one with three dots) to bring up the project selector dialog.

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Workspace: The workspace that contains the branch mappings, you can get this information from Visual Studio. You might have more than one workspace in your system, and the rule of thumb is to use the workspace that has any number of mappings. Unused workspaces will have 0 mappings. If in doubt, ask your system administrator or contact us at support@atlantic-oak.com. Use the button on the left (the one with three dots) to bring up the workspace selector dialog.

Once you have configured all the above values click on the **"Full DB update"** button. Cordova will begin querying Azure DevOps and copying data to the local database. Depending on the size of the database this operation might take a few minutes or longer.

The **"Incremental DB update"** button can be clicked when you feel like the local DB needs an updated dataset. But generally, Cordova takes care of updating the DB automatically.

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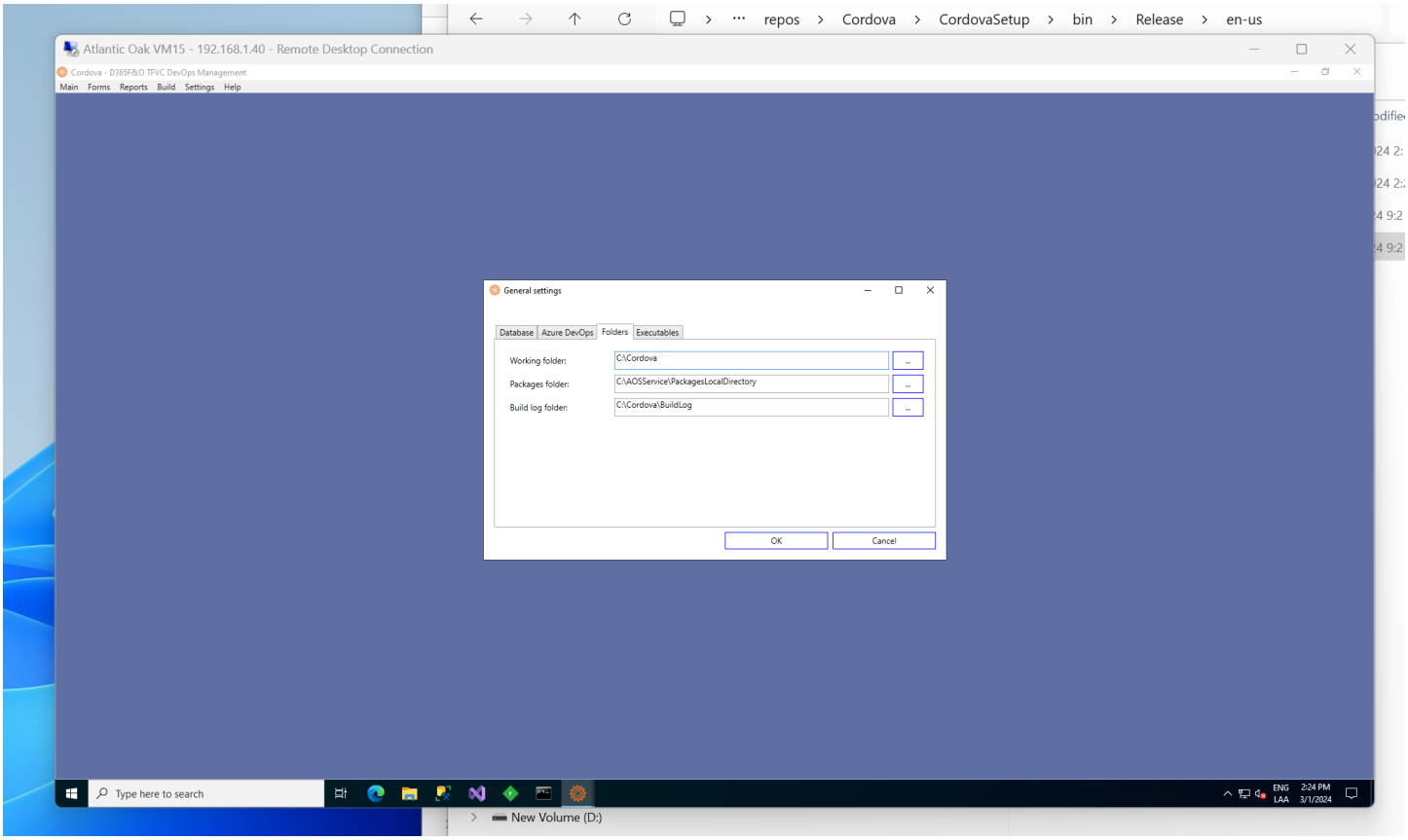
The folders tab is populated with values by the system by default. These folders are used to keep temporary and other files, such as reports, that are generated by the Cordova system.



Tab controls:

Working folder: The path to the working folder for the system. This folder will store several files such as reports.

Packages folder: The packages folder on one box systems. Will be blank if Cordova is running on a system that is not a one-box.

Build log folder: Will contain temporary files created during build processes.

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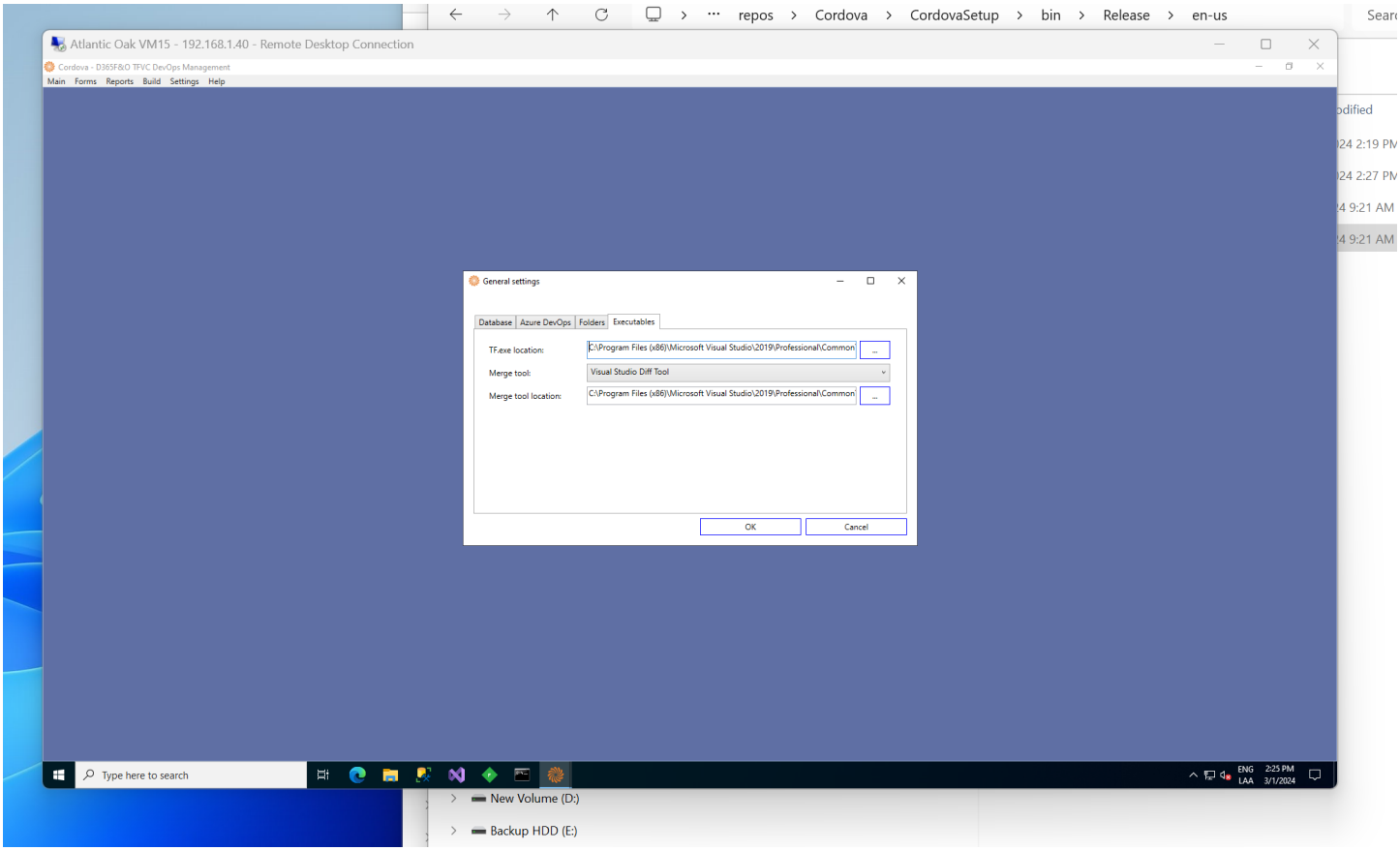
The executables tab is populated with values by the system by default. It contains path information for executables that are invoked within the Cordova system.



Tab controls:

TF.exe location: Path to the TF.exe executable.

Merge tool: Merge tool type. Currently the only valid option is “Visual Studio Diff Tool”.

Merge tool location: Path to the executable for the merge tool.

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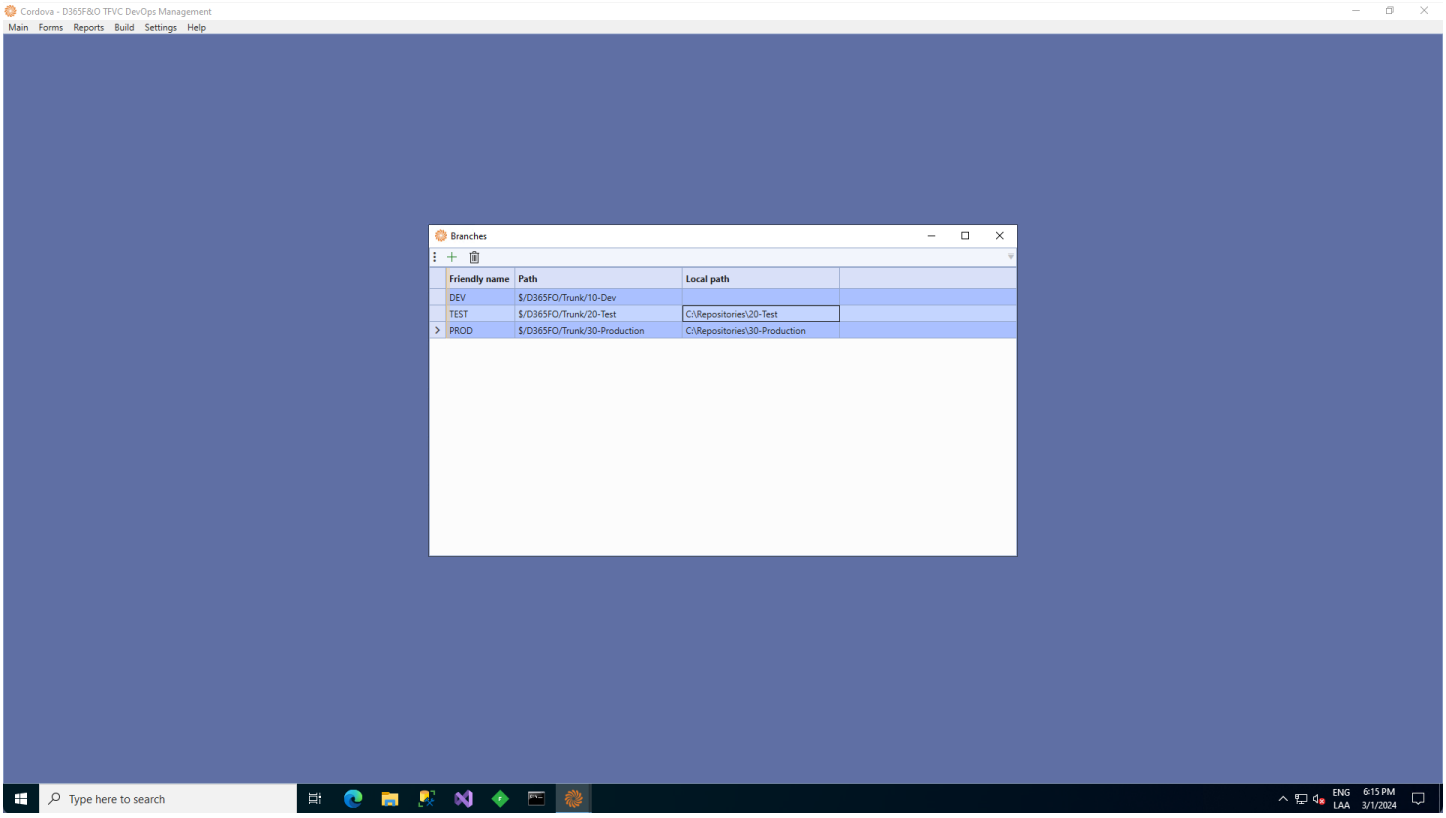
Branches

The branches screen will allow you to specify which code branches of your project you wish to have as origins or destinations of merge operations.

Toolbar buttons:

Add a branch.

Remove a branch.



Grid columns:

Friendly name: A short description to identify the branch. Will show up in reports instead of the repository path.

Path: The complete path of the branch in the Azure DevOps code repository.

Local path: (Optional) The mapping to the local machine. Will only be used by the TF.exe script generation process.

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Form Configuration

The form configuration dialog will allow you to specify the merge or history operations that you execute frequently and want to keep handy. A history form will allow you to view the history of the changesets for a given branch and perform changes to the check in comments or change the associated Azure DevOps tasks. A merge candidates form will allow you to merge two branches.

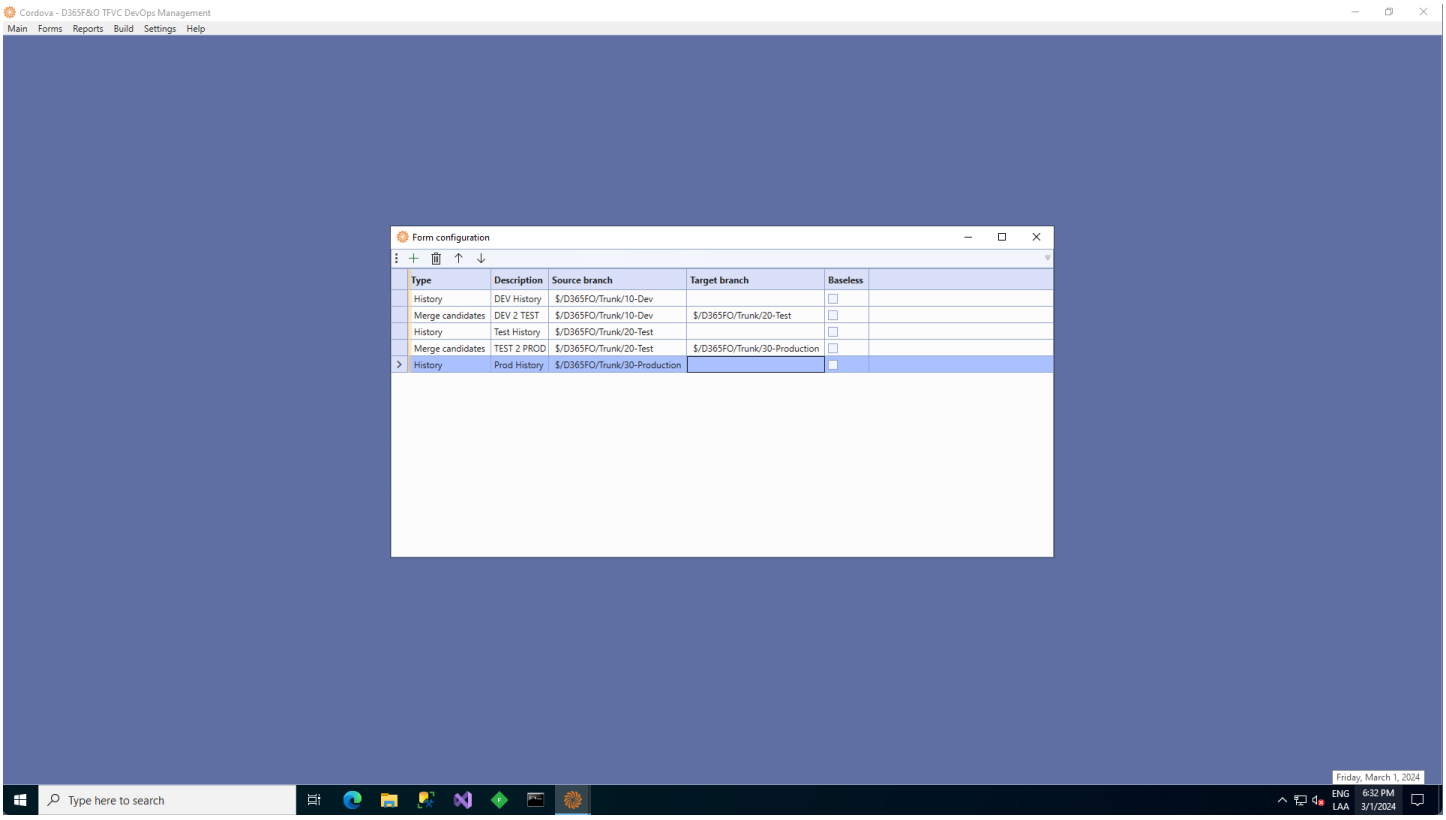
Toolbar buttons:

Add a form configuration line.

Remove a form configuration line.

Move line up.

Move line down.



Grid controls:

Type: History or **Merge candidates**.

Description: A short description.

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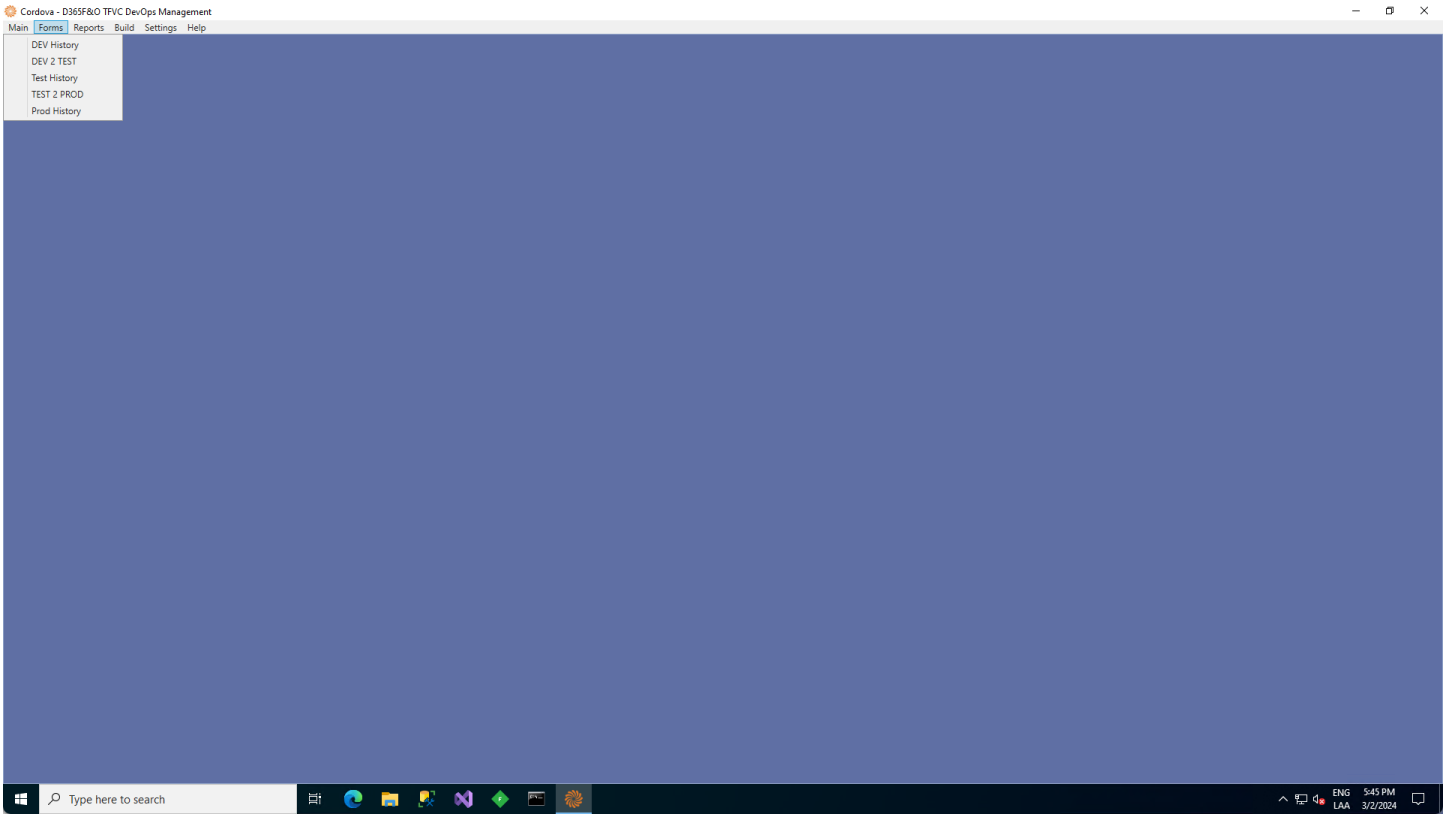
Source branch: The source branch of the merge, or the main branch for history.

Target branch: The destination branch. Only required for type **Merge candidates**.

Baseless: When you want to perform baseless merges mark this checkbox.

Once the forms have been configured they will show up in the **Forms** menu.



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Report Configuration

The Cordova system can produce excel style reports of changeset history and merge candidates that you can distribute to your team. The system can store several reports.

Toolbar buttons:

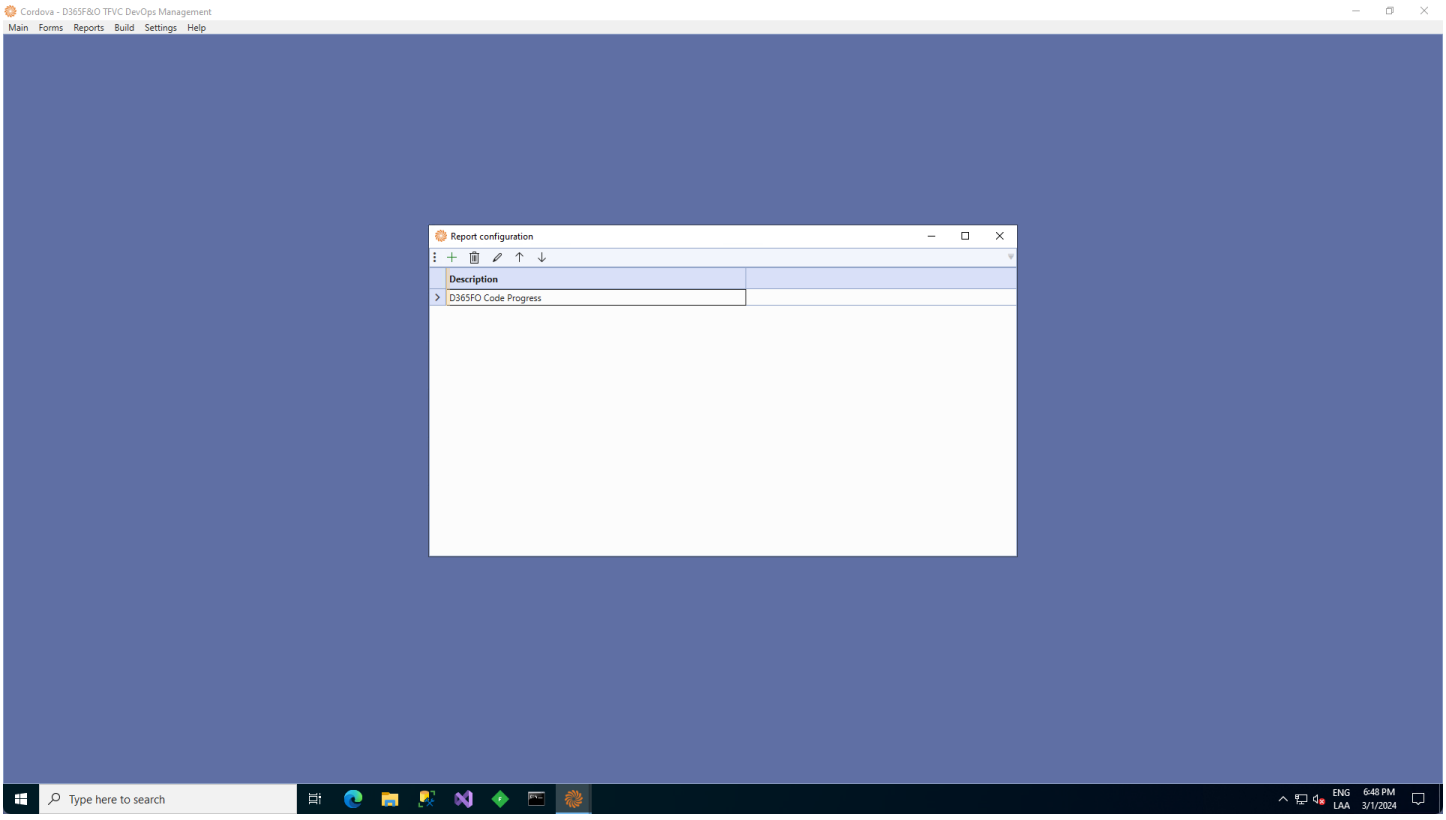
Add a report configuration line.

Remove a report configuration line.

Edit selected report configuration line (go to report details).

Move line up.

Move line down.



Grid controls:

Description: A short description used to identify the report.

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Once you are in the report details dialog you can specify the tabs that the report will have. A tab can be a history or a merge candidates tab.

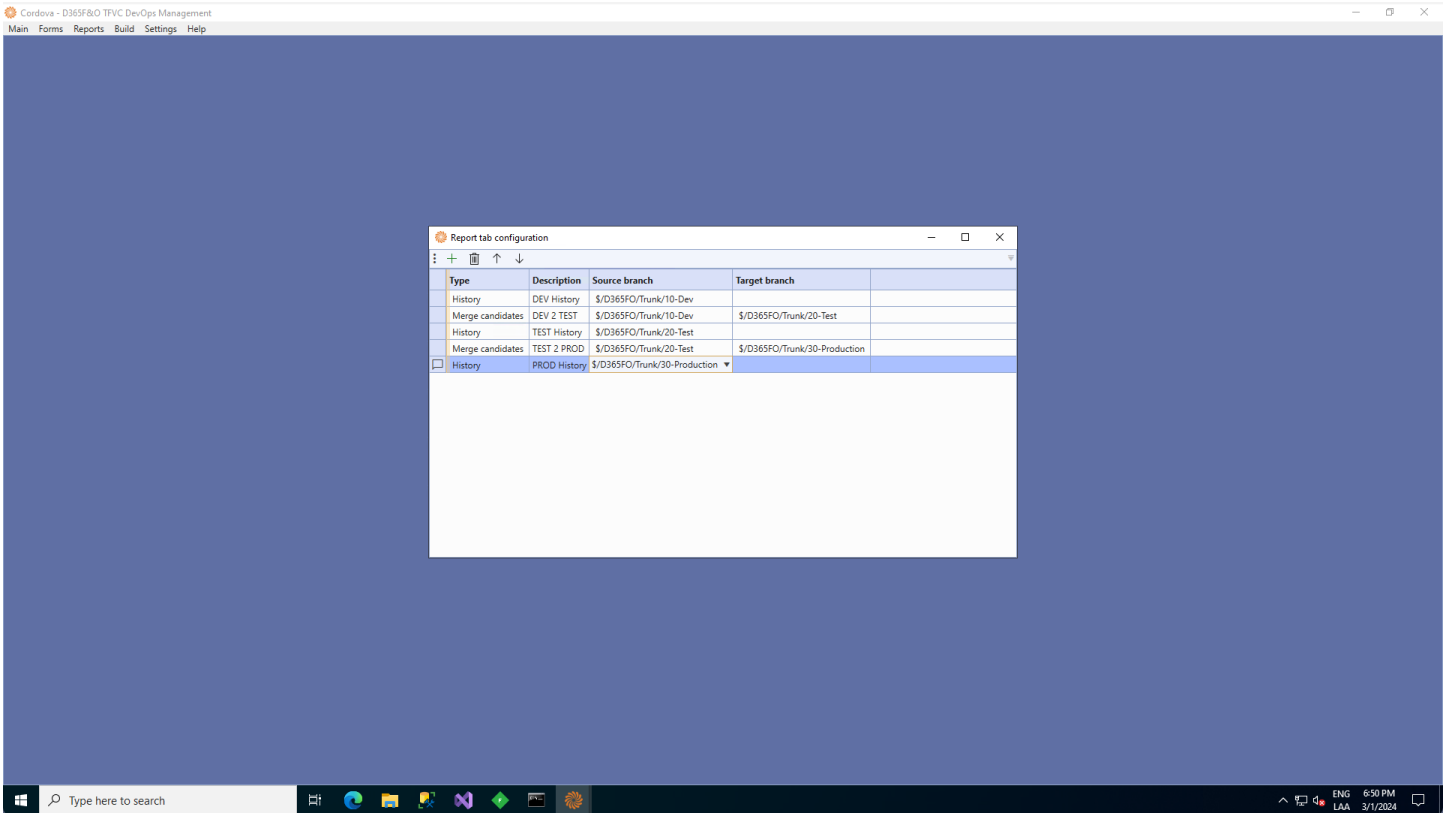
Toolbar buttons:

Add a report tab configuration line.

Remove a report tab configuration line.

Move line up.

Move line down.



Grid controls:

Type: History or Merge Candidates.

Description: A short description.

Source branch: The source branch of the merge or the branch for history.

Target branch: The destination branch. Only required for type Merge Candidates.

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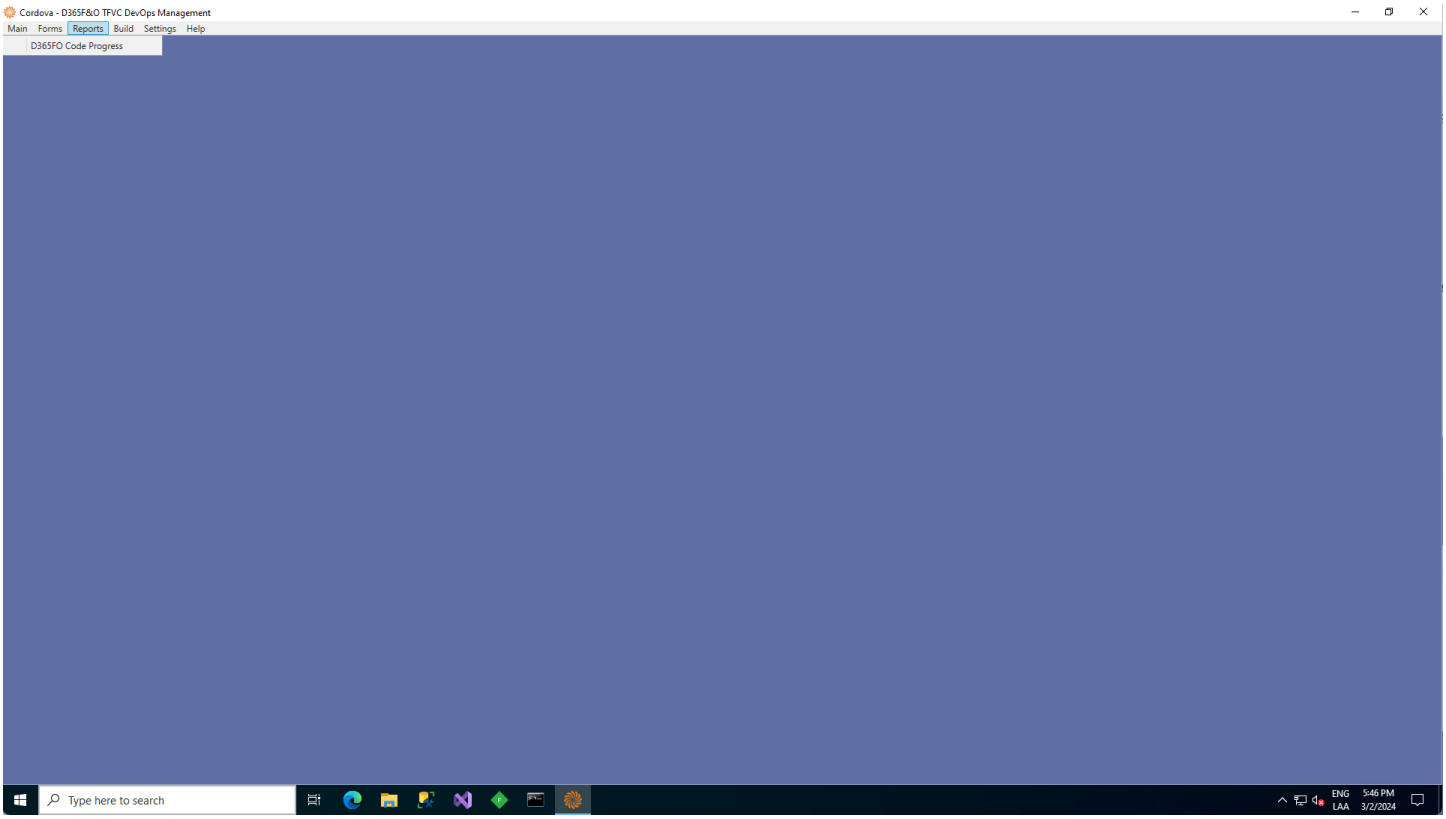
Once the reports have been configured, they will show up in the Reports menu.



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Build Configuration

After doing merge operations you can check to see if a branch is compiling correctly. You can do this for several branches using a single one-box. The build configuration allows you to specify which branches you wish to compile.

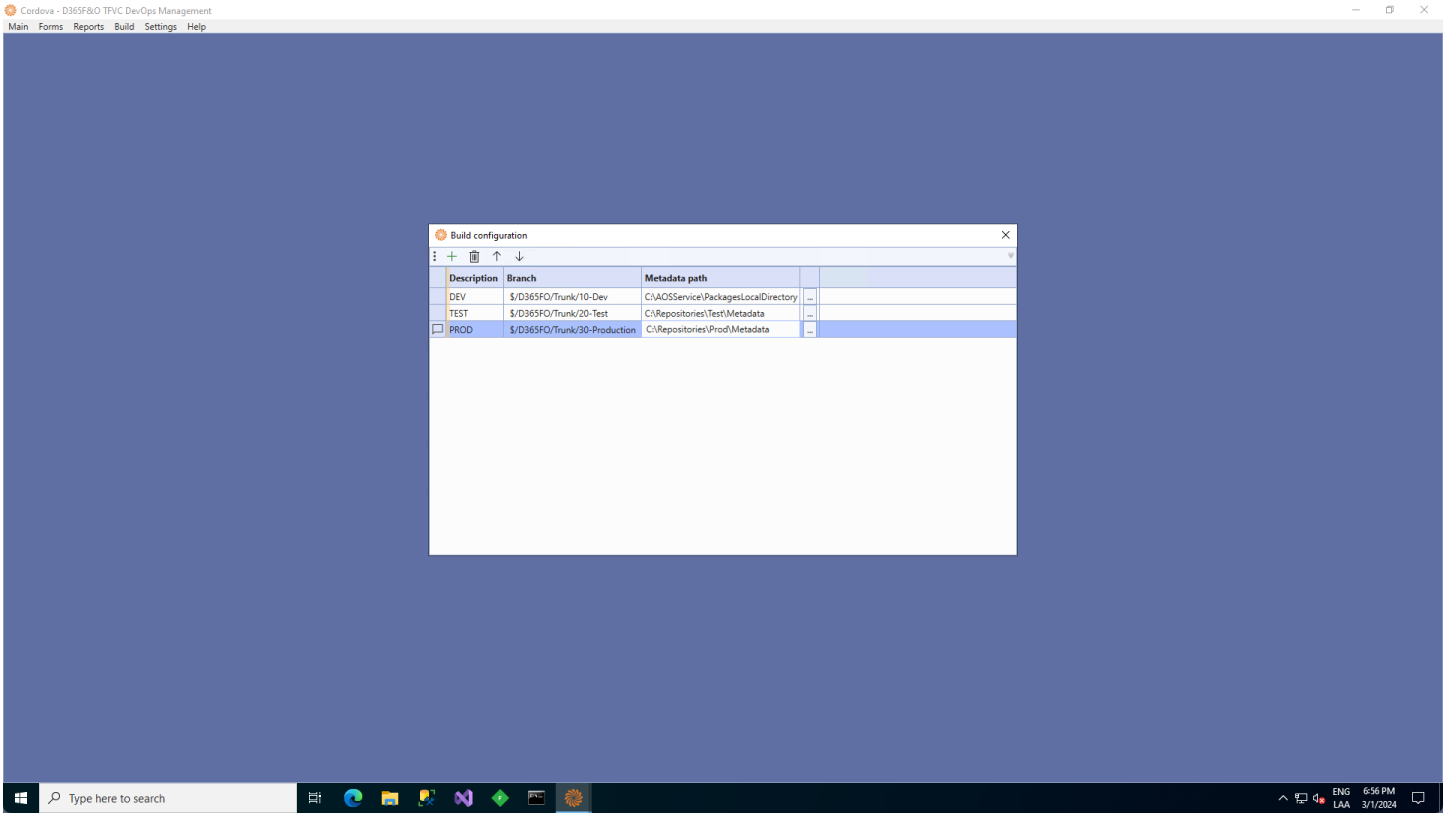
Toolbar buttons:

Add a build configuration line.

Remove a build configuration line.

Move line up.

Move line down.



Grid controls:

Description: A short description that will be visible in the top menu area.

Branch: The branch that will be compiled. Note: only metadata branches can be compiled. Project branches do not contain x++ code.

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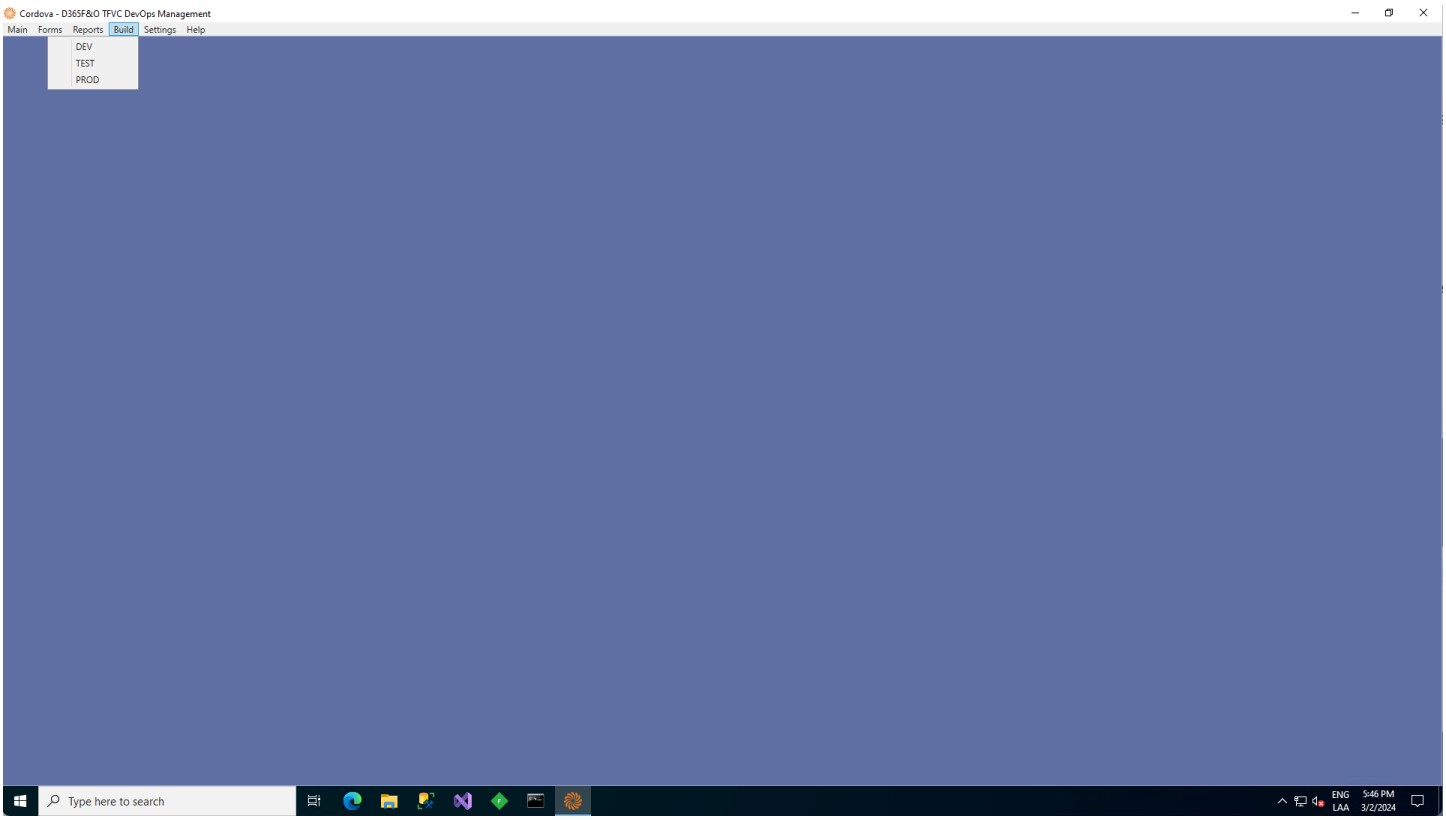
Metadata path: The local path to the metadata path.

Once the builds have been configured they will show up in the Build menu.



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Troubleshooting

If your Cordova instance will not start because of a configuration error, you can start the application in maintenance mode.

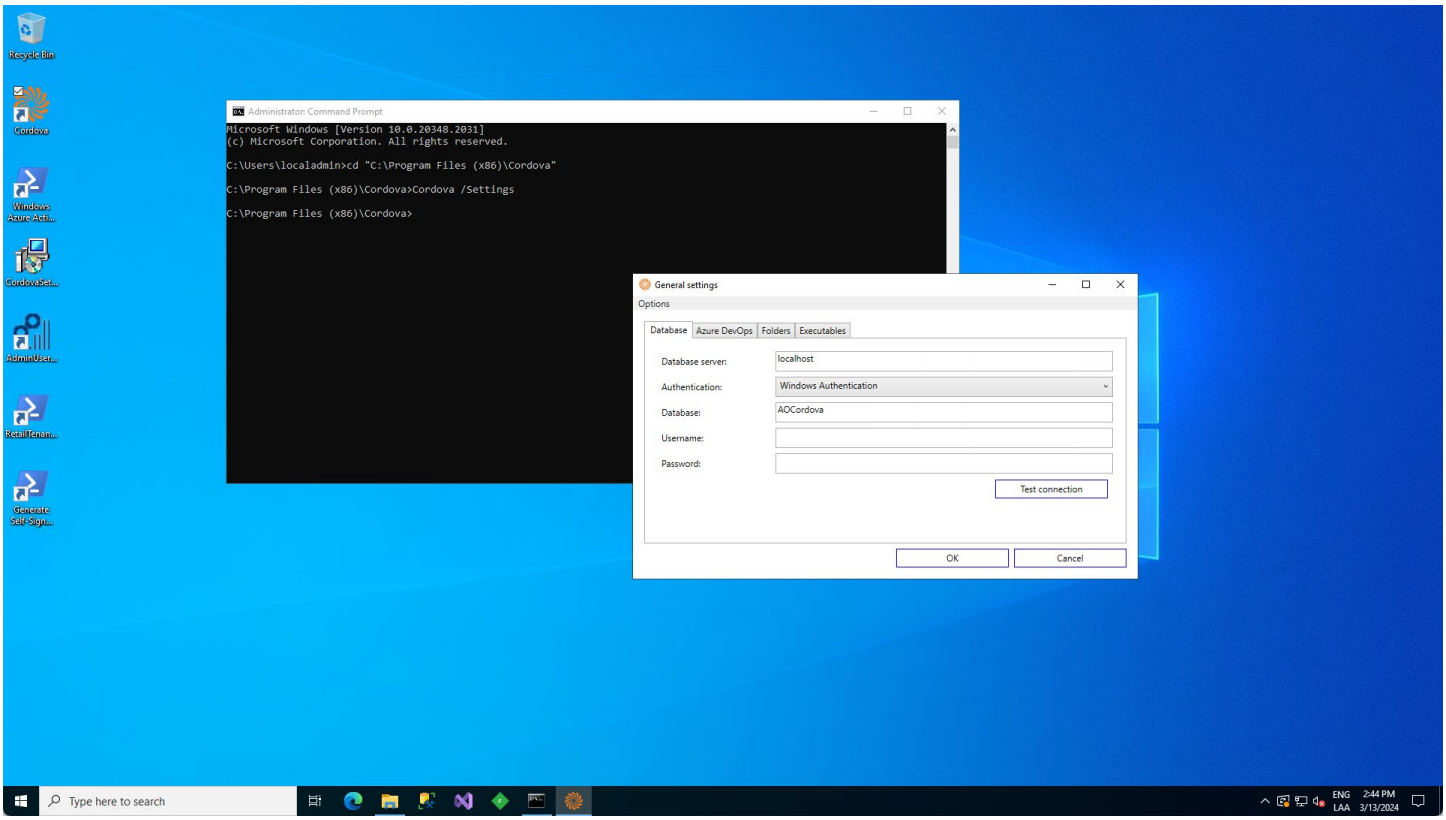
Open a command prompt with elevated privileges. Type:

cd “C:\Program Files (x86)\Cordova”

Which is generally the path to the Cordova executable, unless it was modified when installing the product. Then type:

Cordova /Settings

Cordova will then take you to the General Settings screen.



When you are finished doing the corrections you can close the dialog, all your new settings will be saved, and start Cordova.

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Forms

History Forms

A history form will allow you to view the history of the changesets for a given branch and perform changes to the check in comments or change the associated Azure DevOps tasks.

Toolbar buttons:

Changeset properties.

Files in changeset.

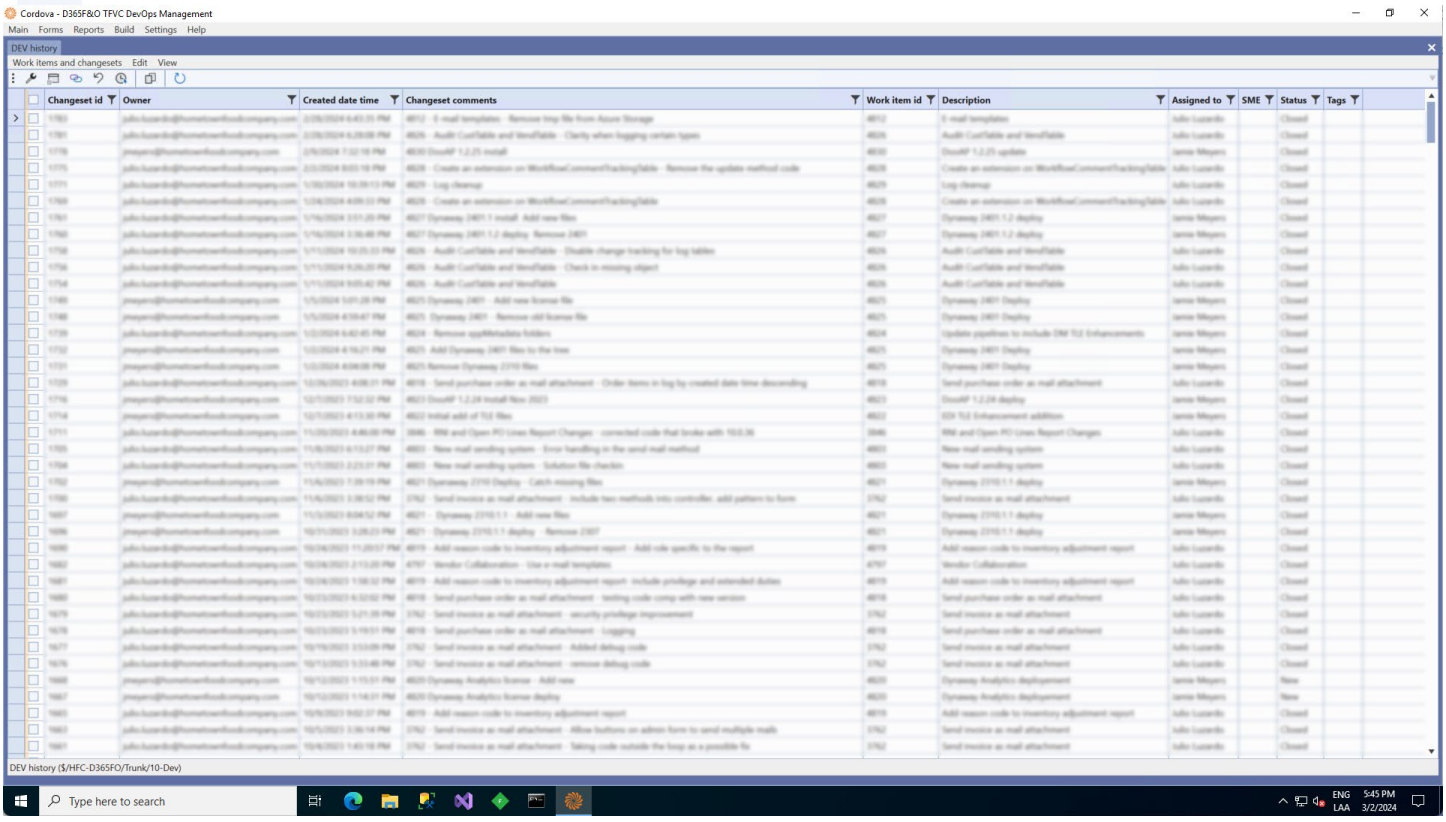
Link changeset(s) to work item.

Rollback changesets.

Pending changes.

Copy as table.

Refresh



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Grid columns:

Changeset Id: The id of the changeset.

Owner: username of the person that created the changeset.

Created date time: changeset creation date/time.

Changeset comments: changeset comments.

Work item id: the associated work item id.

Description: the work item description.

Assigned to: person responsible for the changeset.

SME: subject matter expert.

Status: status.

Tags: tags associated with the work item.

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Merge Candidate Forms

A merge candidates form will allow you to merge two branches.

Toolbar buttons:

Changeset properties.

Files in changeset.

Link changeset(s) to work item.

Copy as table.

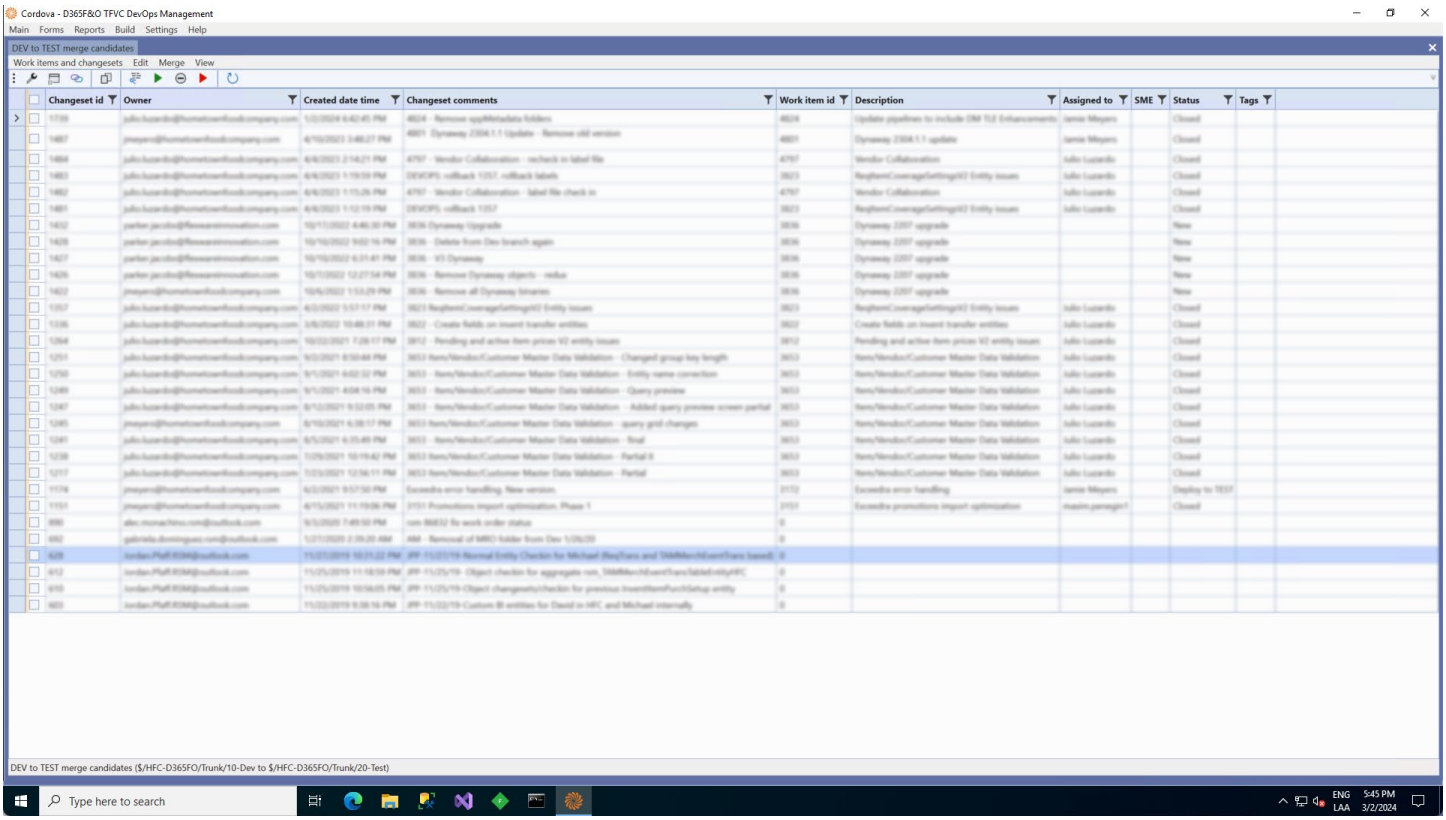
Preview merge script.

Batch merge/check in.

Remove changeset(s) from list.

Force merge.

Refresh.



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Grid columns:

Changeset Id: The id of the changeset.

Owner: username of the person that created the changeset.

Created date time: changeset creation date/time.

Changeset comments: changeset comments.

Work item id: the associated work item id.

Description: the work item description.

Assigned to: person responsible for the changeset.

SME: subject matter expert.

Status: status.

Tags: tags associated with the work item.

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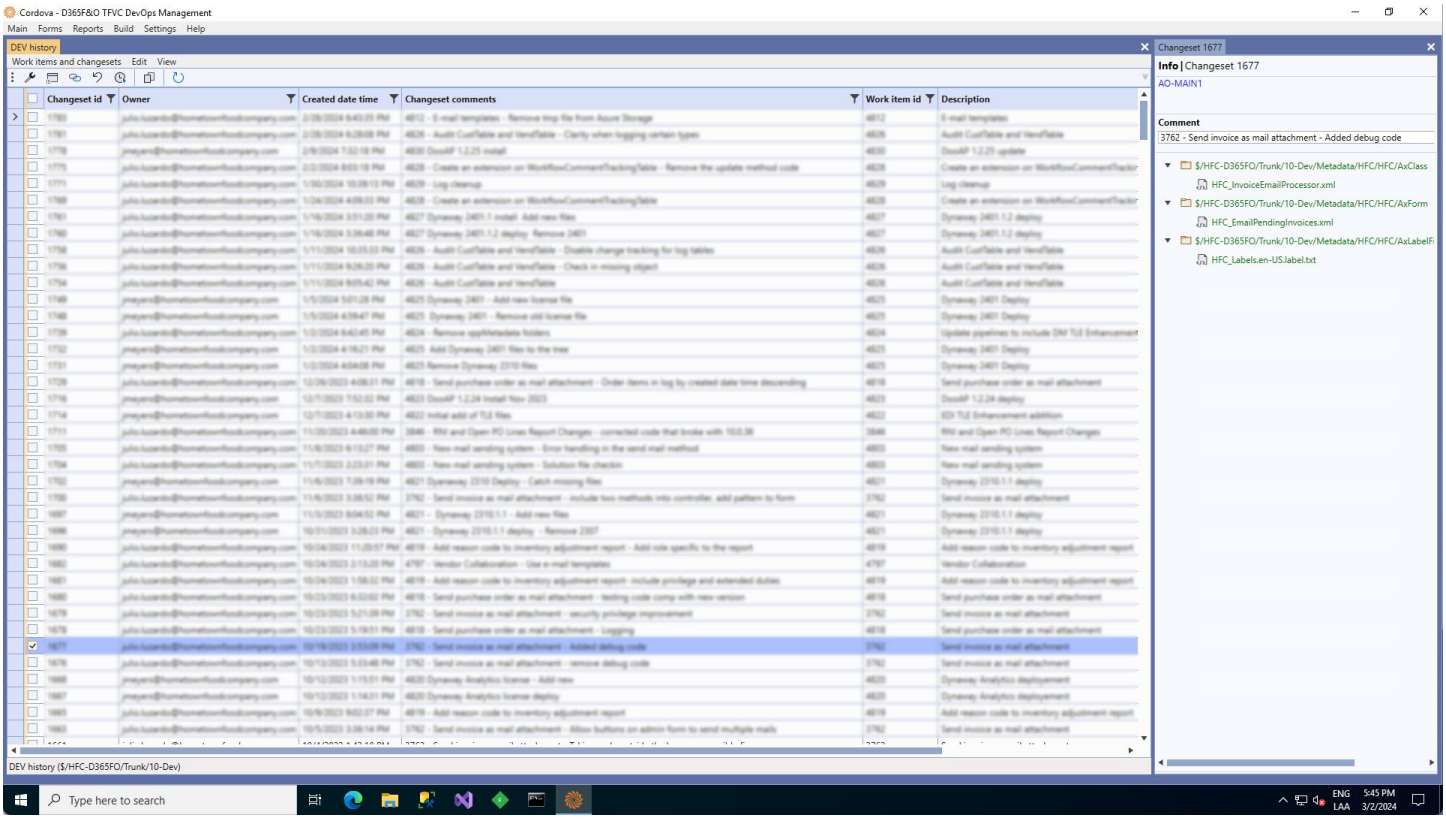
Changeset properties

Displays a right pane with the files that are contained in the changeset.

The **changeset properties** command can be invoked in history and merge candidate forms by clicking this icon:



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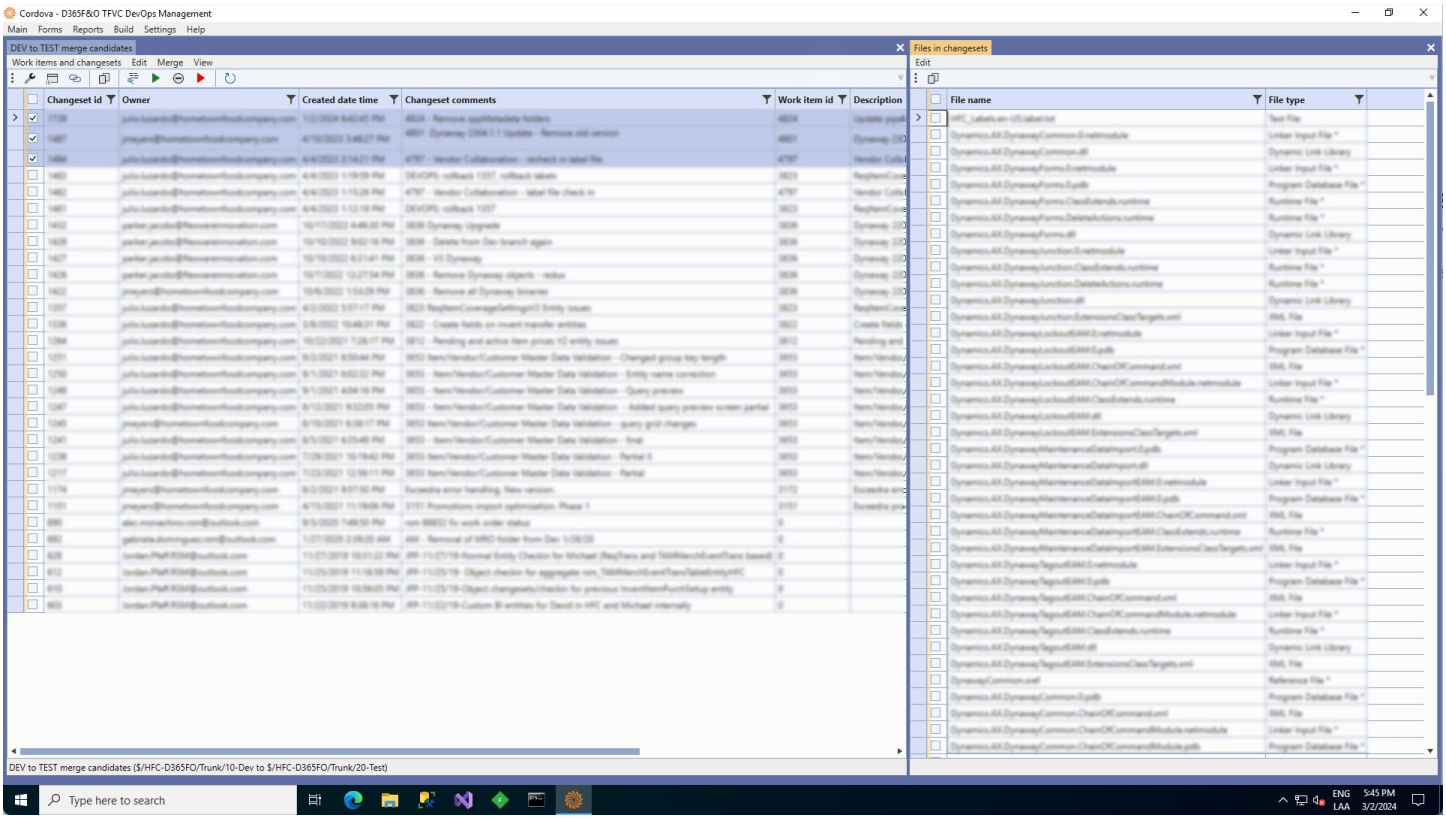
Files in changeset

Displays a simplified list of all the files in the changeset or changesets that have been selected by marking the checkbox on the left.

The **files in changeset** command can be invoked in history and merge candidate forms by clicking this icon:



Toolbar buttons:

Copy as table.

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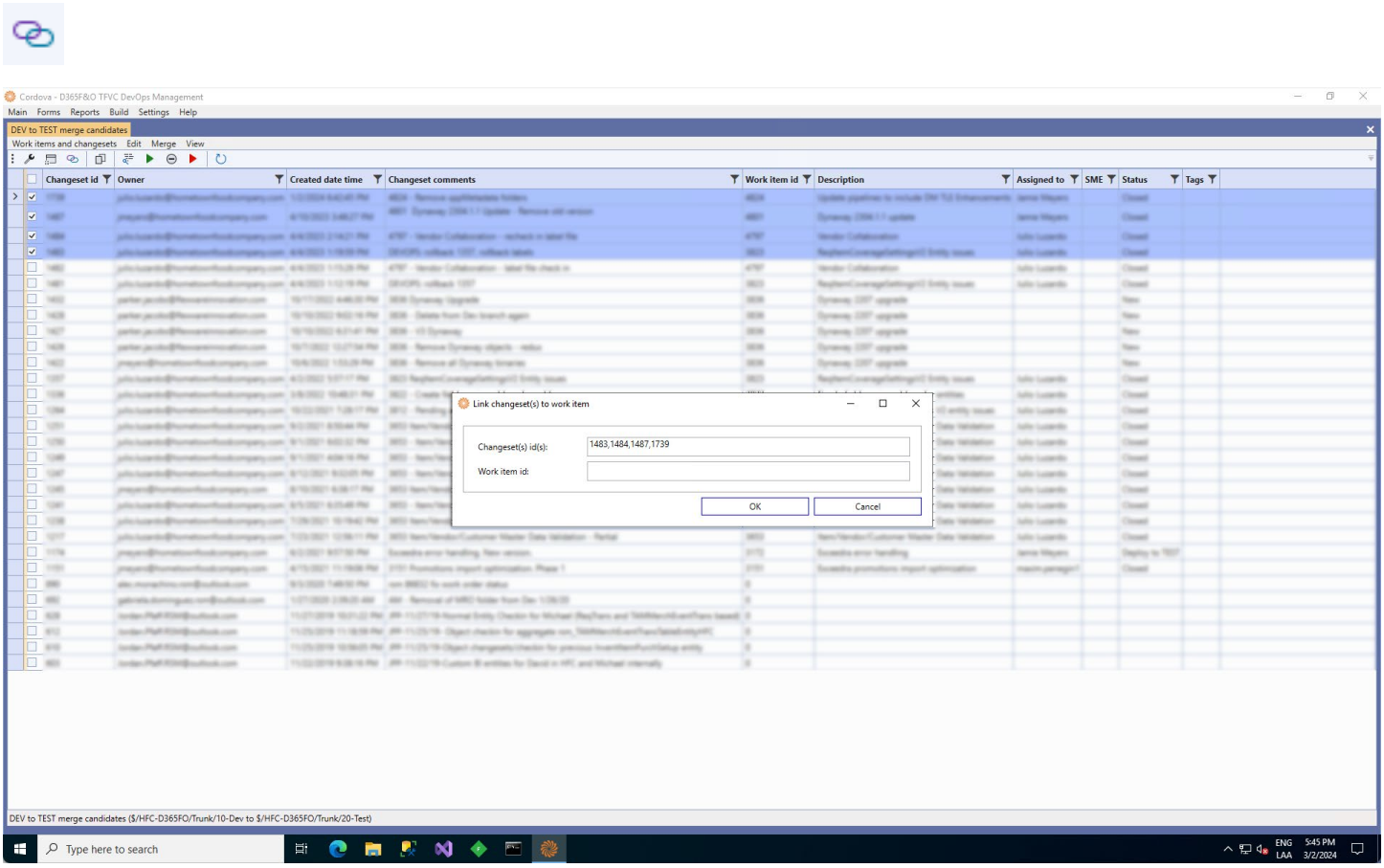
Link changeset(s) to work item

Links a changeset or changesets to an existing work item.

The **link changeset(s) to work item** command can be invoked in history and merge candidate forms by clicking this icon:



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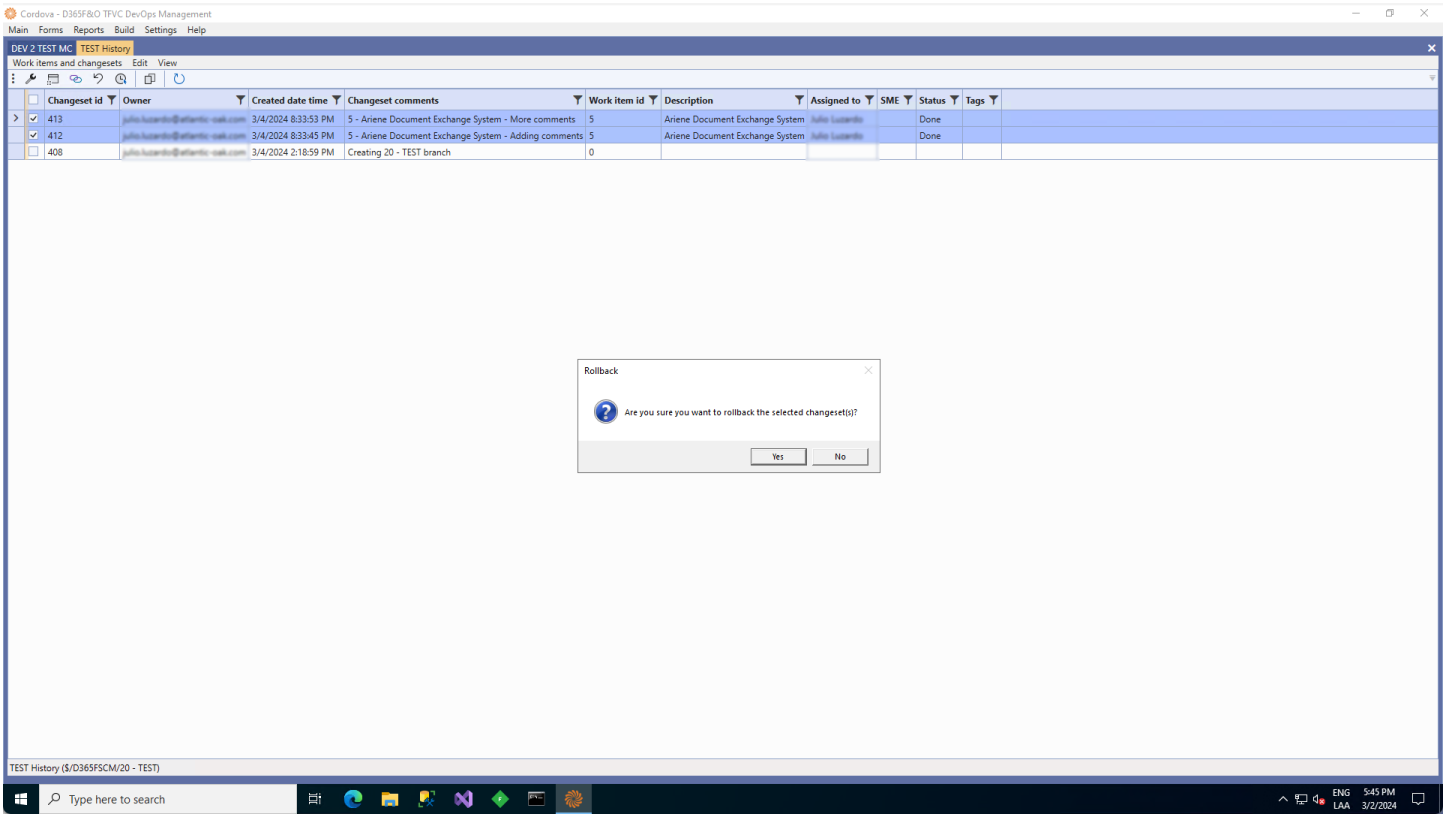
Rollback changesets

Rolls back changesets that have been selected by marking the checkbox on the left.

The **rollback changesets** command can be invoked in history forms by clicking this icon:



Once you initiate a rollback operation, the system will prompt you to confirm the rollback of the selected changesets.

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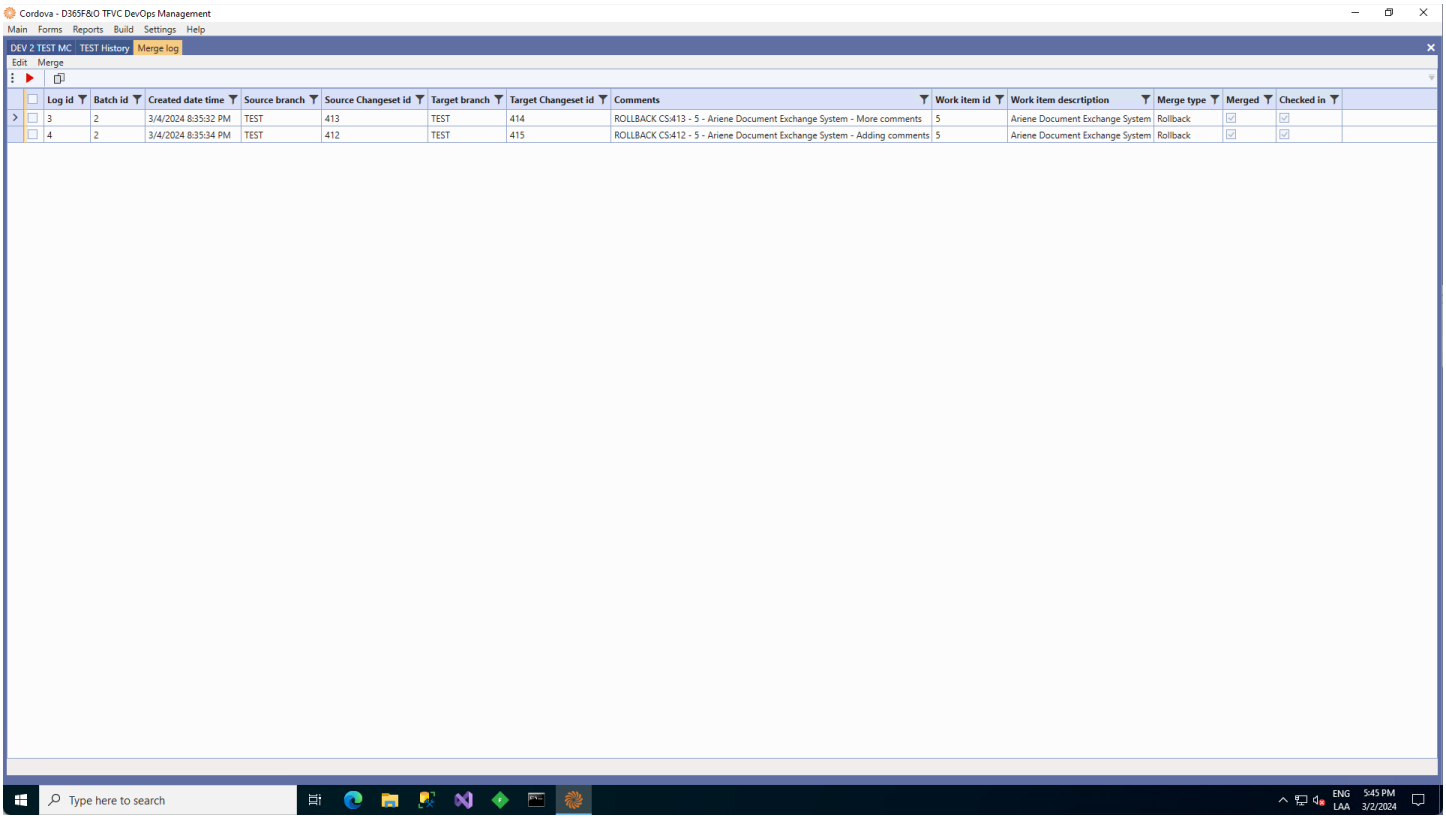
Once the rollbacks have been finished the system will show you the merge log of the operation.



The system will automatically check in the comments for the rollback. A “ROLLBACK” text in capital letters followed by CS and the changeset number that was rolled back plus the original description of the changeset.

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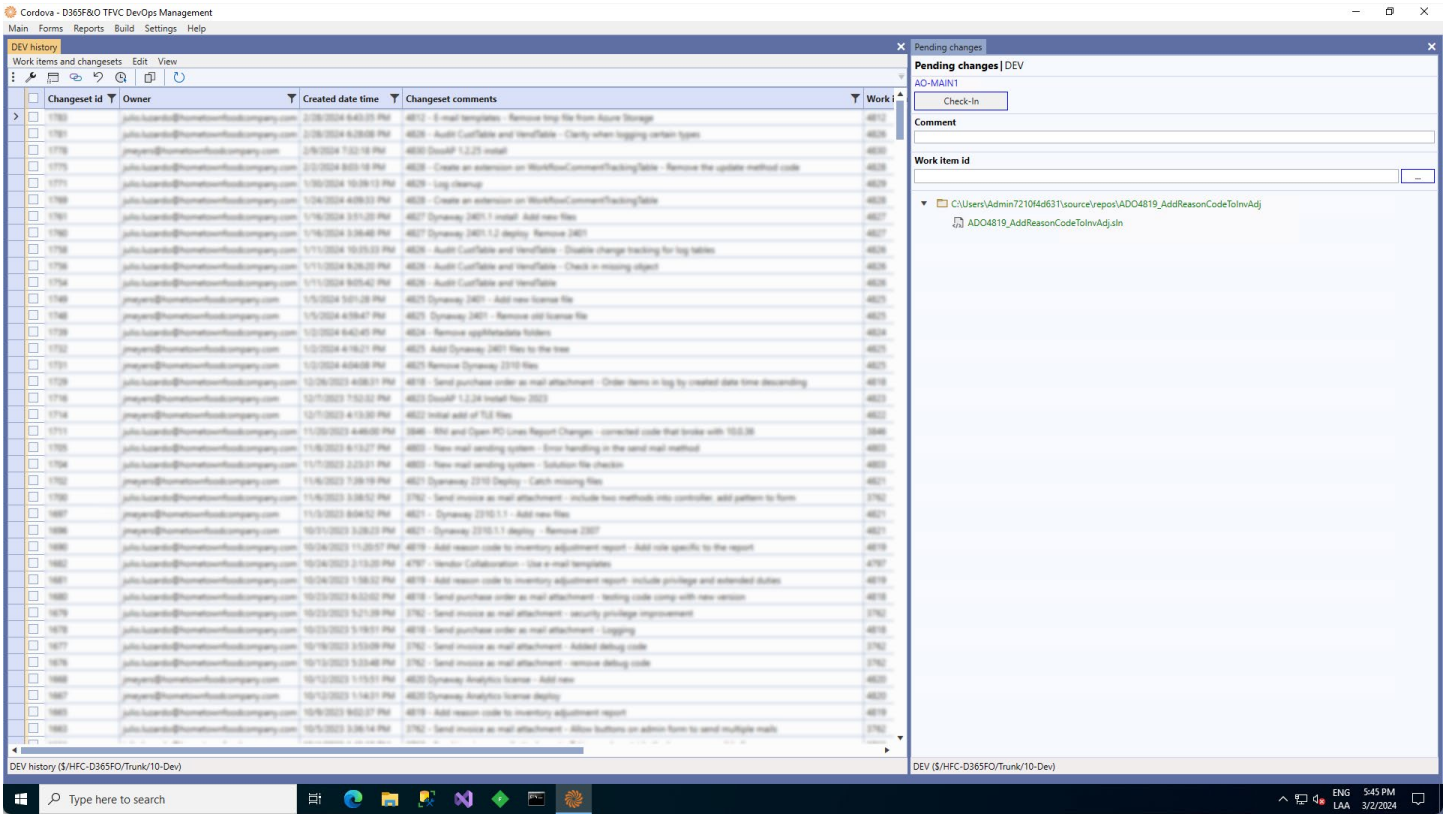
Pending changes

Displays a right pane with a hierarchical list of all the pending changes in the workspace.

The **pending changes** command can be invoked in history forms by clicking this icon:



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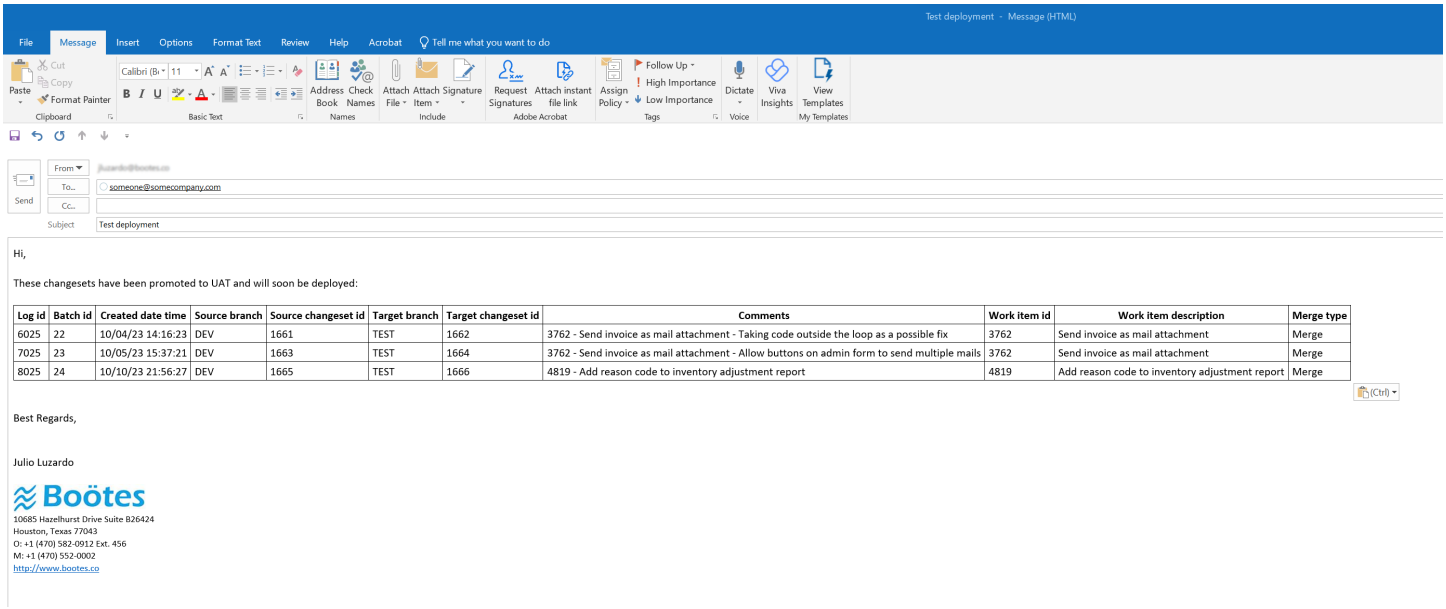
Copy as table

Copies an HTML table representation of the changesets that have been selected by marking the checkbox on the left. Useful for communicating code promotions to your team as the HTML table can be pasted into e-mails.

The **copy as table** command can be invoked in several types of forms forms by clicking this icon:



Hi,

These changesets have been promoted to UAT and will soon be deployed:

Log id	Batch id	Created date time	Source branch	Source changeset id	Target branch	Target changeset id	Comments	Work item id	Work item description	Merge type
6025	22	10/04/23 14:16:23	DEV	1661	TEST	1662	3762 - Send invoice as mail attachment - Taking code outside the loop as a possible fix	3762	Send invoice as mail attachment	Merge
7025	23	10/05/23 15:37:21	DEV	1663	TEST	1664	3762 - Send invoice as mail attachment - Allow buttons on admin form to send multiple mails	3762	Send invoice as mail attachment	Merge
8025	24	10/10/23 21:56:27	DEV	1665	TEST	1666	4819 - Add reason code to inventory adjustment report	4819	Add reason code to inventory adjustment report	Merge

(Ctrl)

Best Regards,

Julio Luzardo

Boötes
10685 Hazelhurst Drive Suite B26424
Houston, Texas 77043
O: +1 (470) 582-0912 Ext. 456
M: +1 (470) 552-0002
http://www.bootes.co

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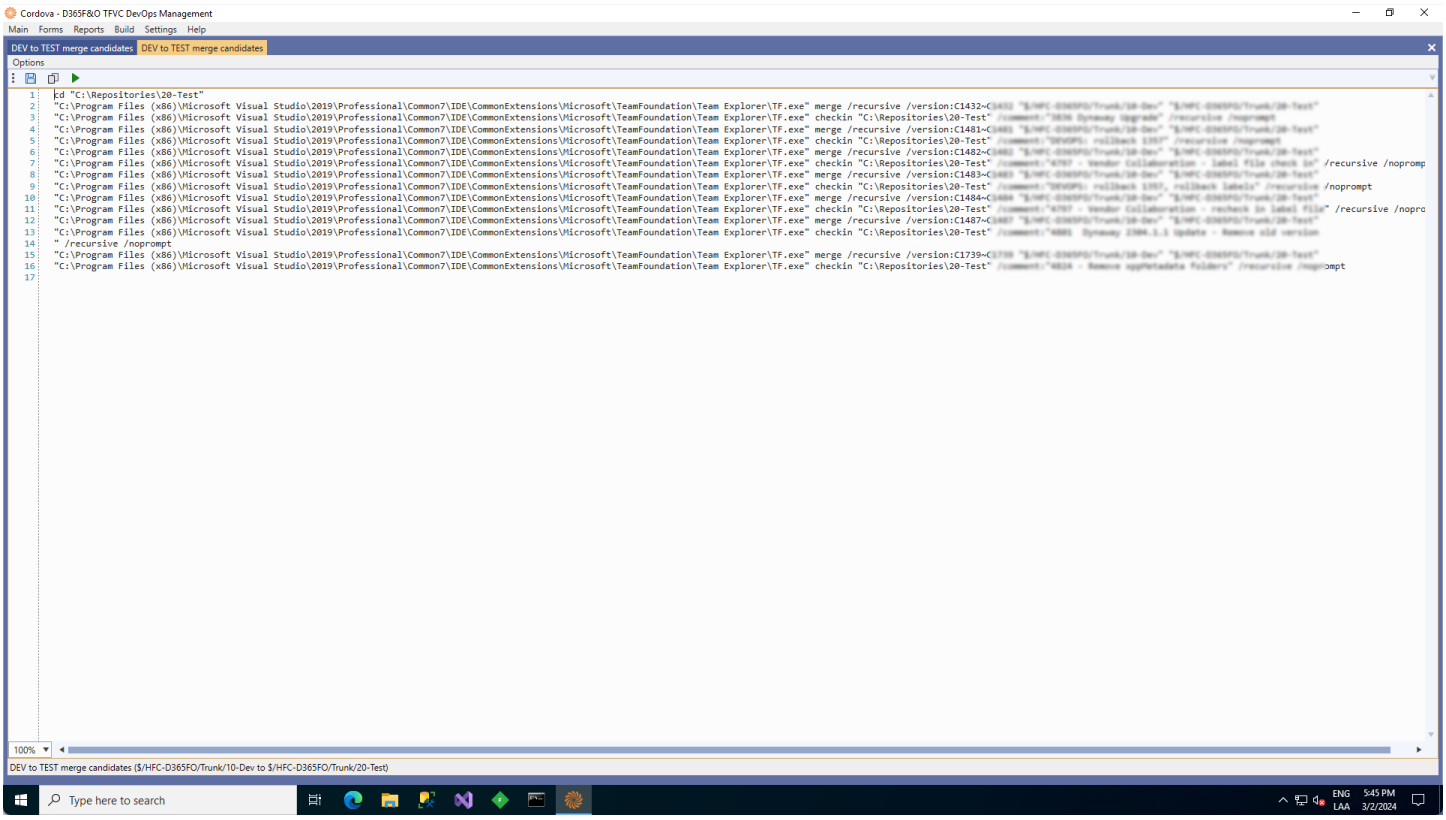
Preview merge script

Allows you to preview a TF.exe merge and check in script that you can copy or save. Useful if you want to run the script using TF.exe.

The **preview merge script** command can be invoked in merge candidate forms by clicking this icon:



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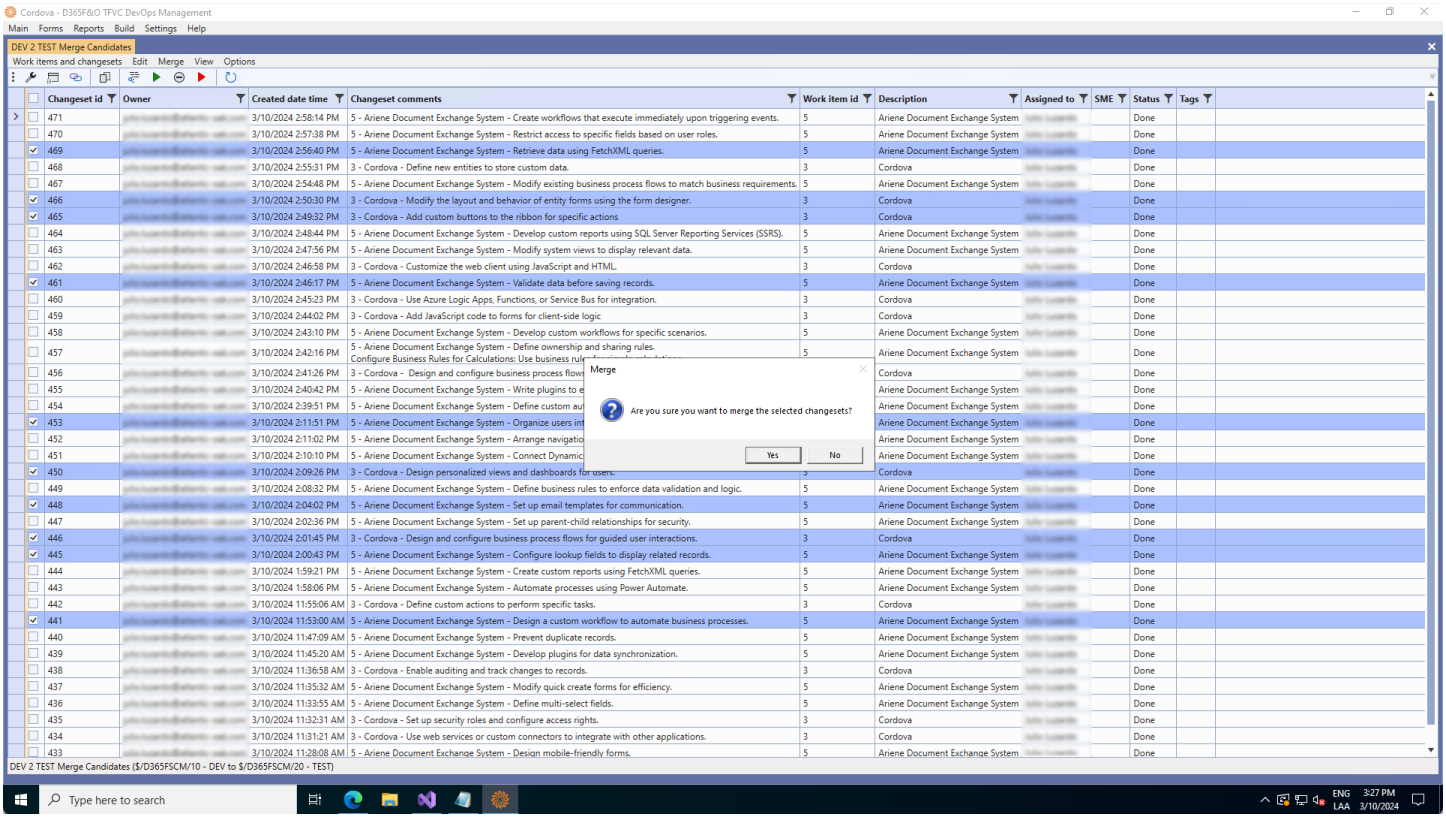
Merge

Allows you to quickly merge and check in a changeset or several changesets at once.

The **merge** command can be invoked in merge candidate forms by clicking this icon:



The system will prompt you: **“Are you sure you want to merge the selected changesets?”.**

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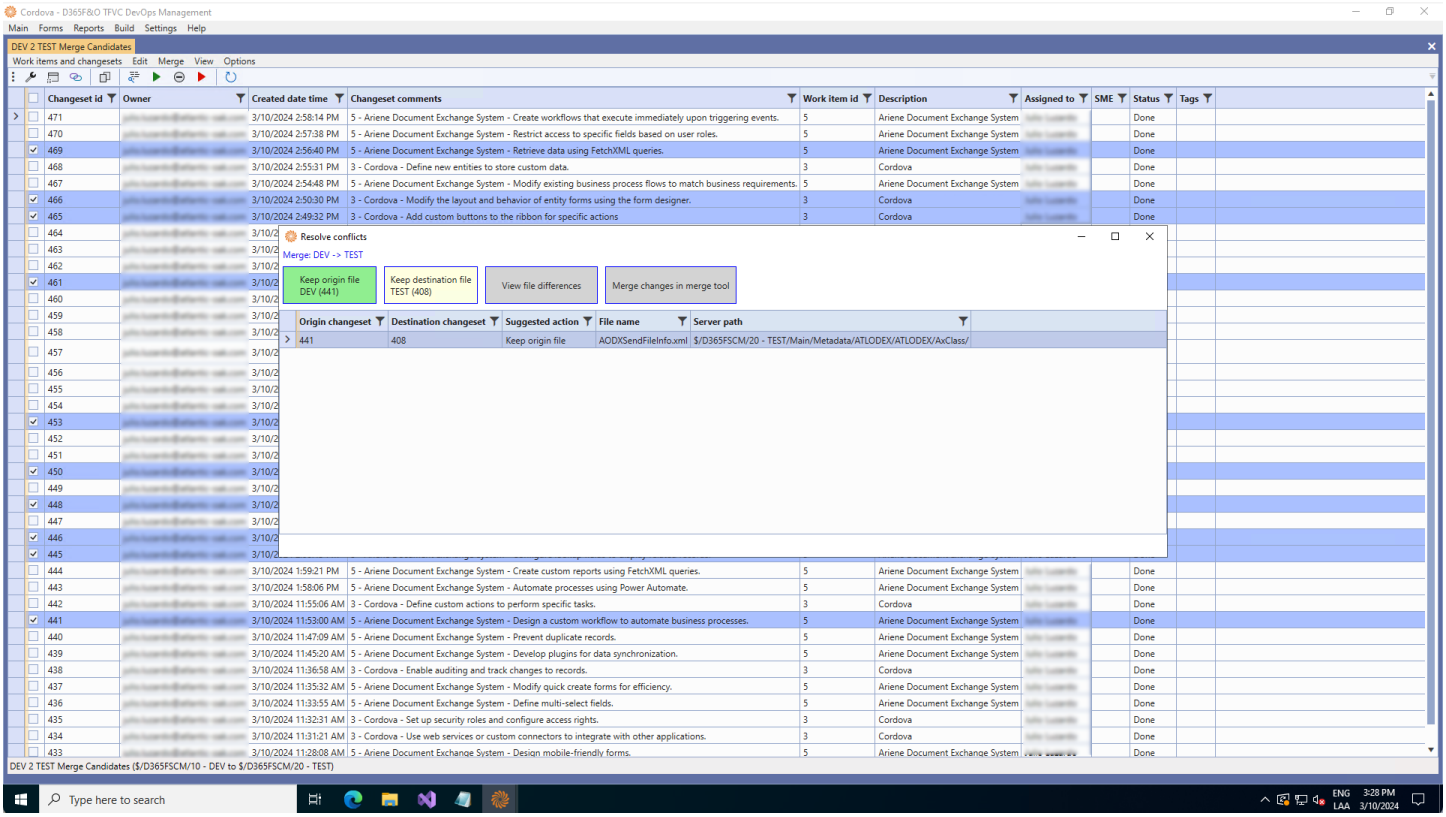
If the system detects a conflict during the merge, you will be presented with this screen.



It will suggest which file to keep and mark the corresponding button in green. You can also click on the **View the differences button** or use a merge tool to do a three-way merge (Merge changes in merge tool).

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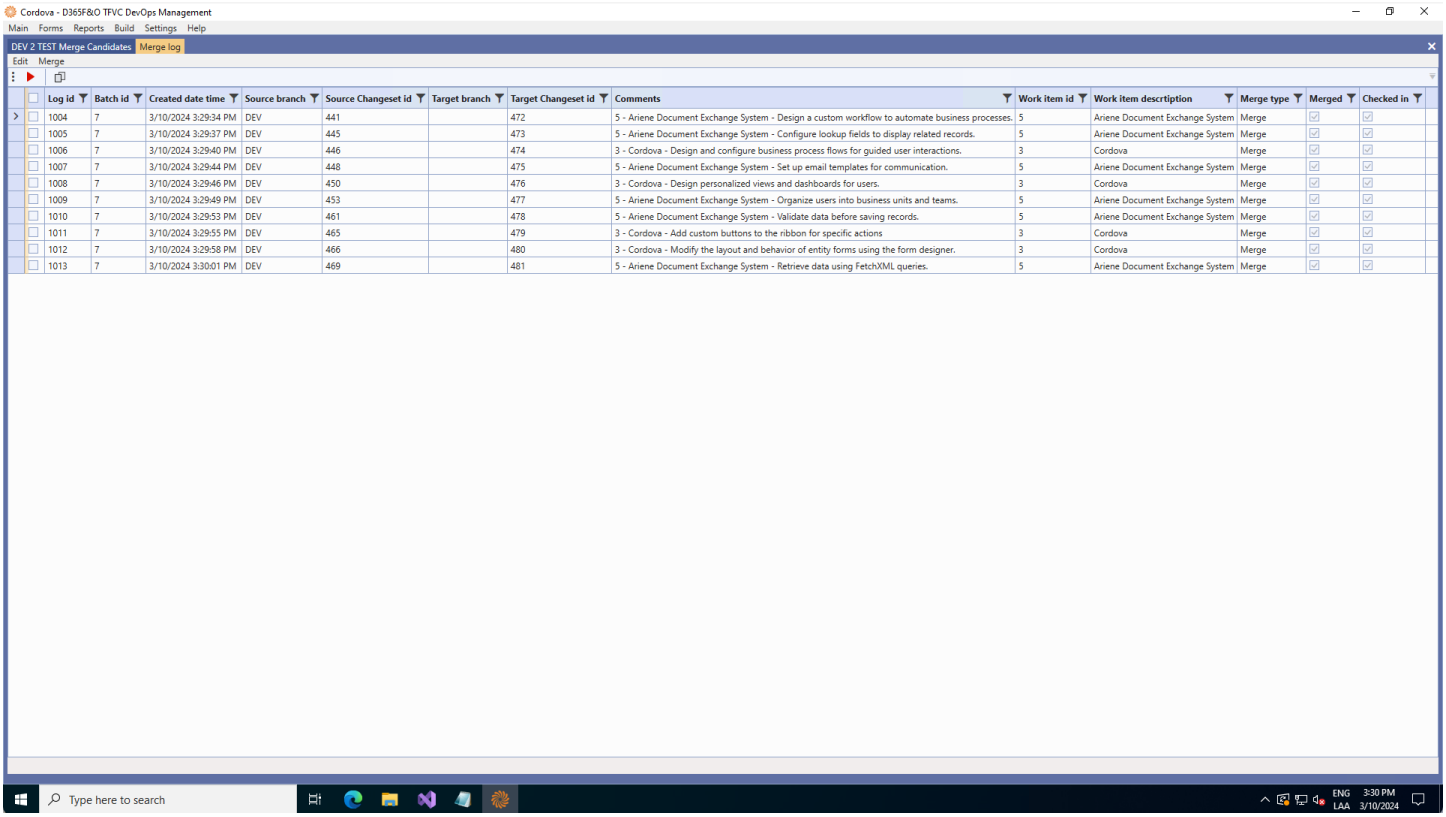
Once the operation has completed successfully you will be presented with a merge log screen.



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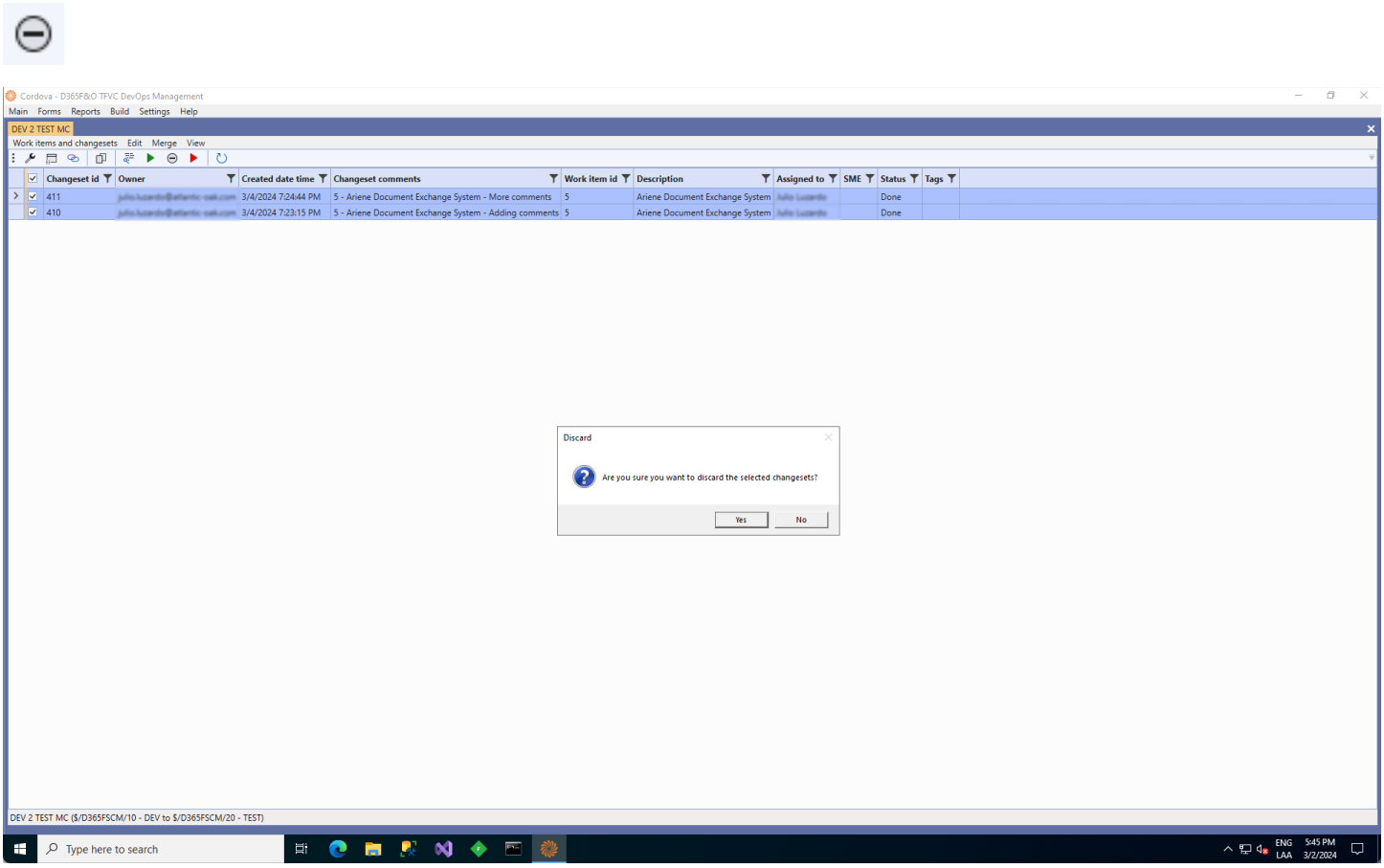
Remove changeset(s) from list

Removes the marked changesets from the merge candidates list.

The **remove changeset(s) from list** command can be invoked in merge candidate forms by clicking this icon:



The system will prompt you: **“Are you sure you want to discard the selected changesets?”.**

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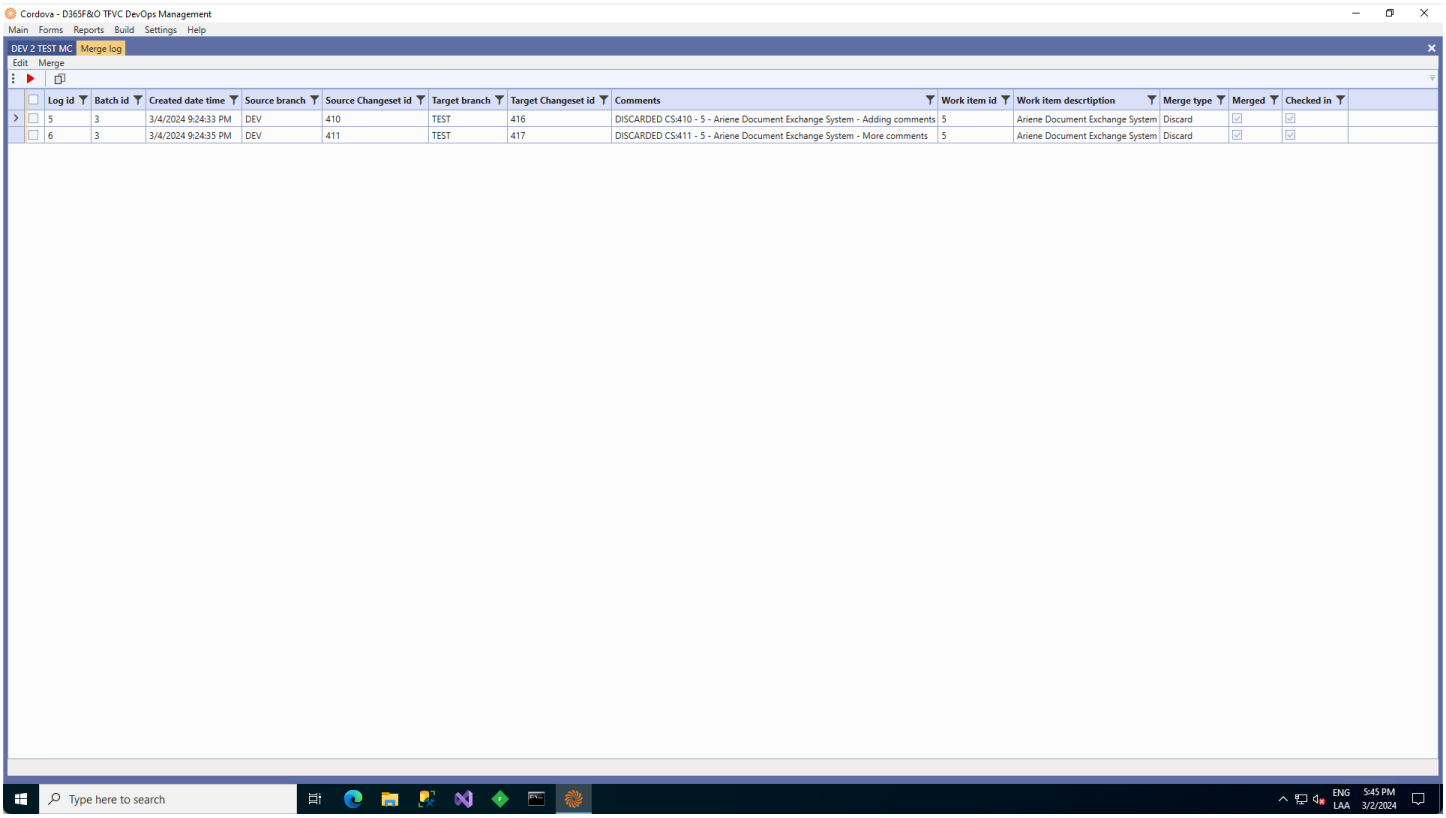
Once the operation has completed successfully you will be presented with a merge log screen.



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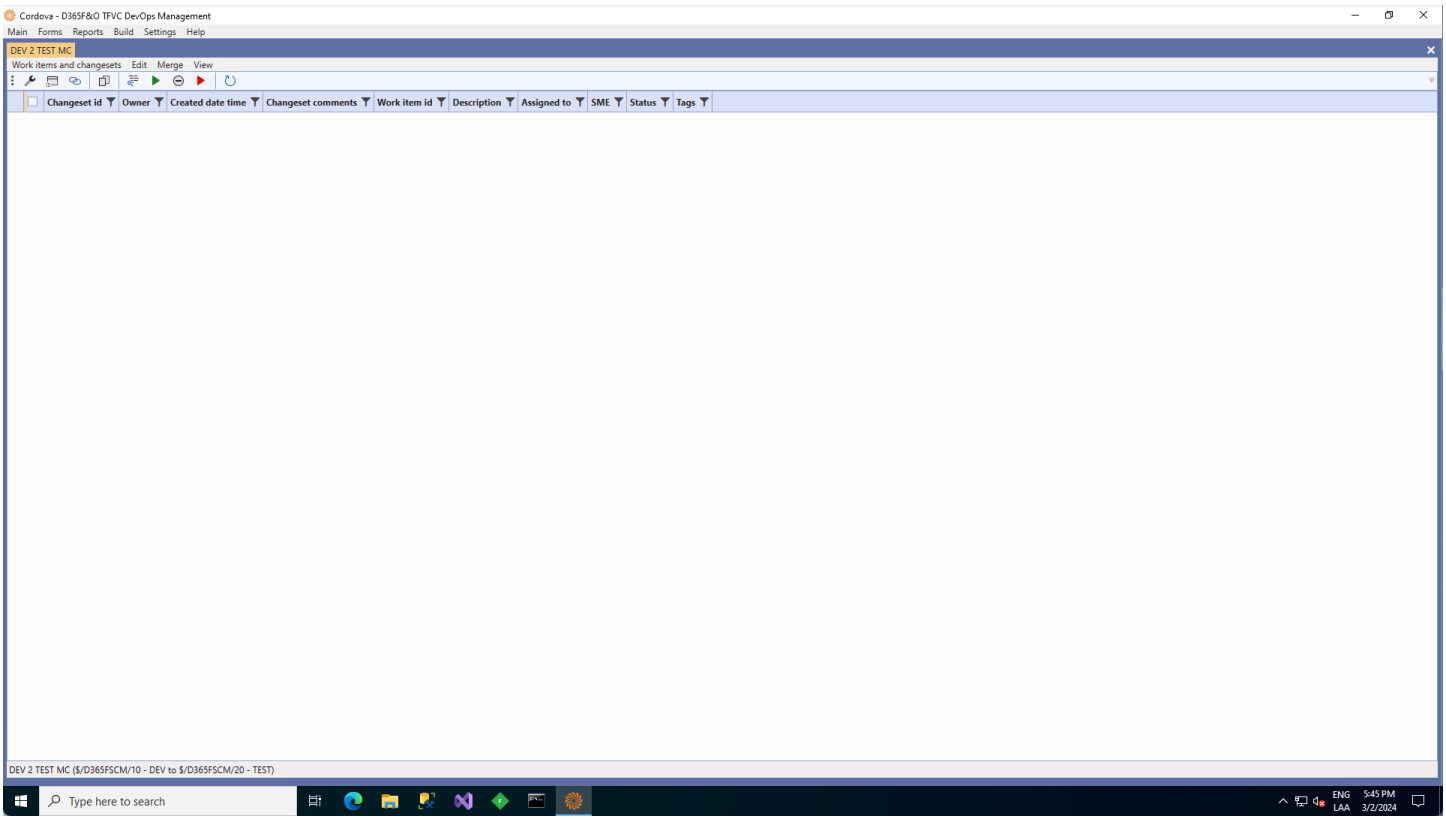
You can check the merge candidates screen and verify that your changesets are no longer in the list.



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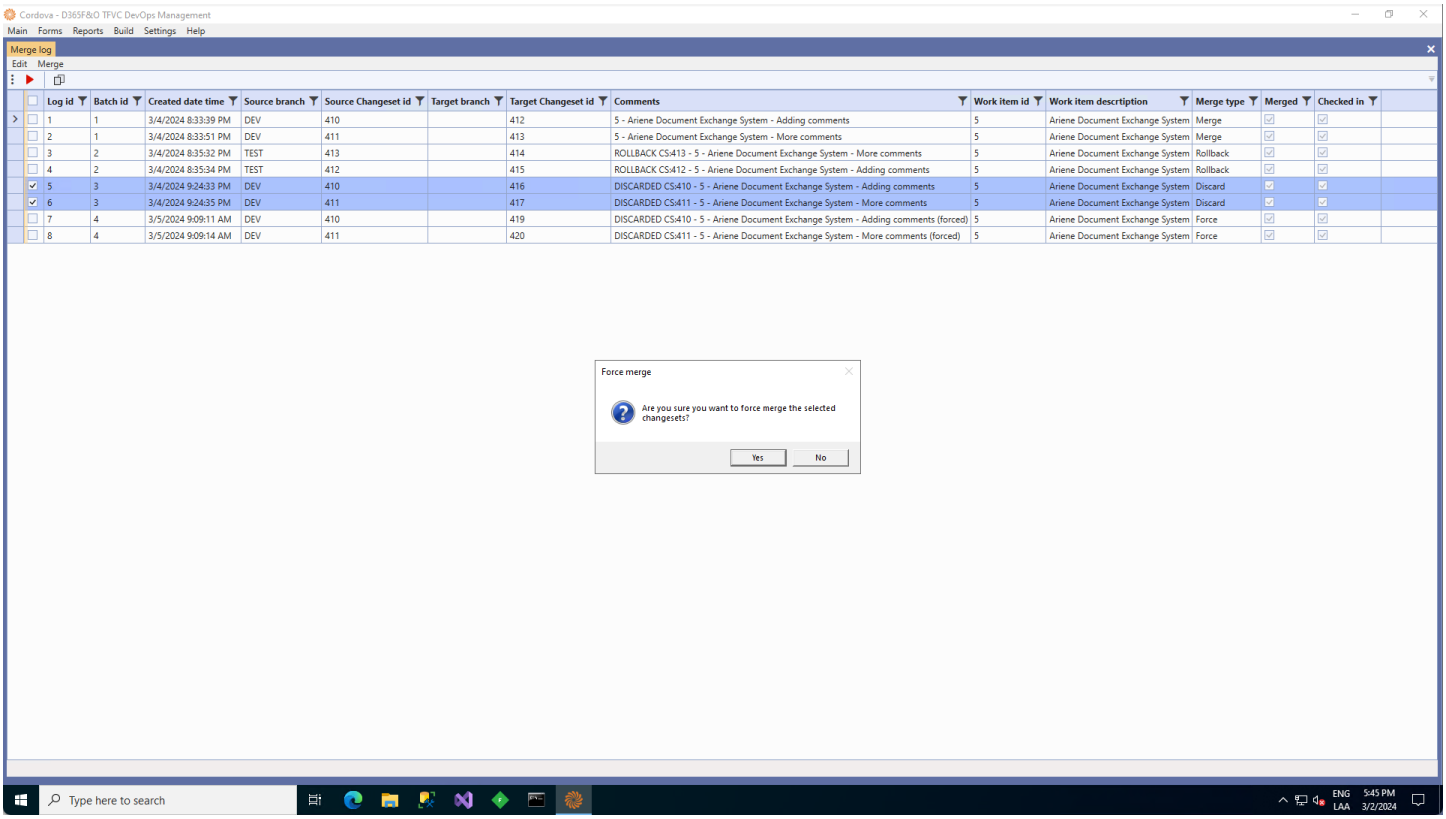
Force merge

Force merges the changesets that are marked. A force merge can be used to promote changesets that have been discarded. Force merge is available from the merge log and is also available from any merge candidates form.

The **force merge** command can be invoked in merge candidate forms and the merge log by clicking this icon:



The system will prompt you to confirm that you want to force merge the marked changesets.

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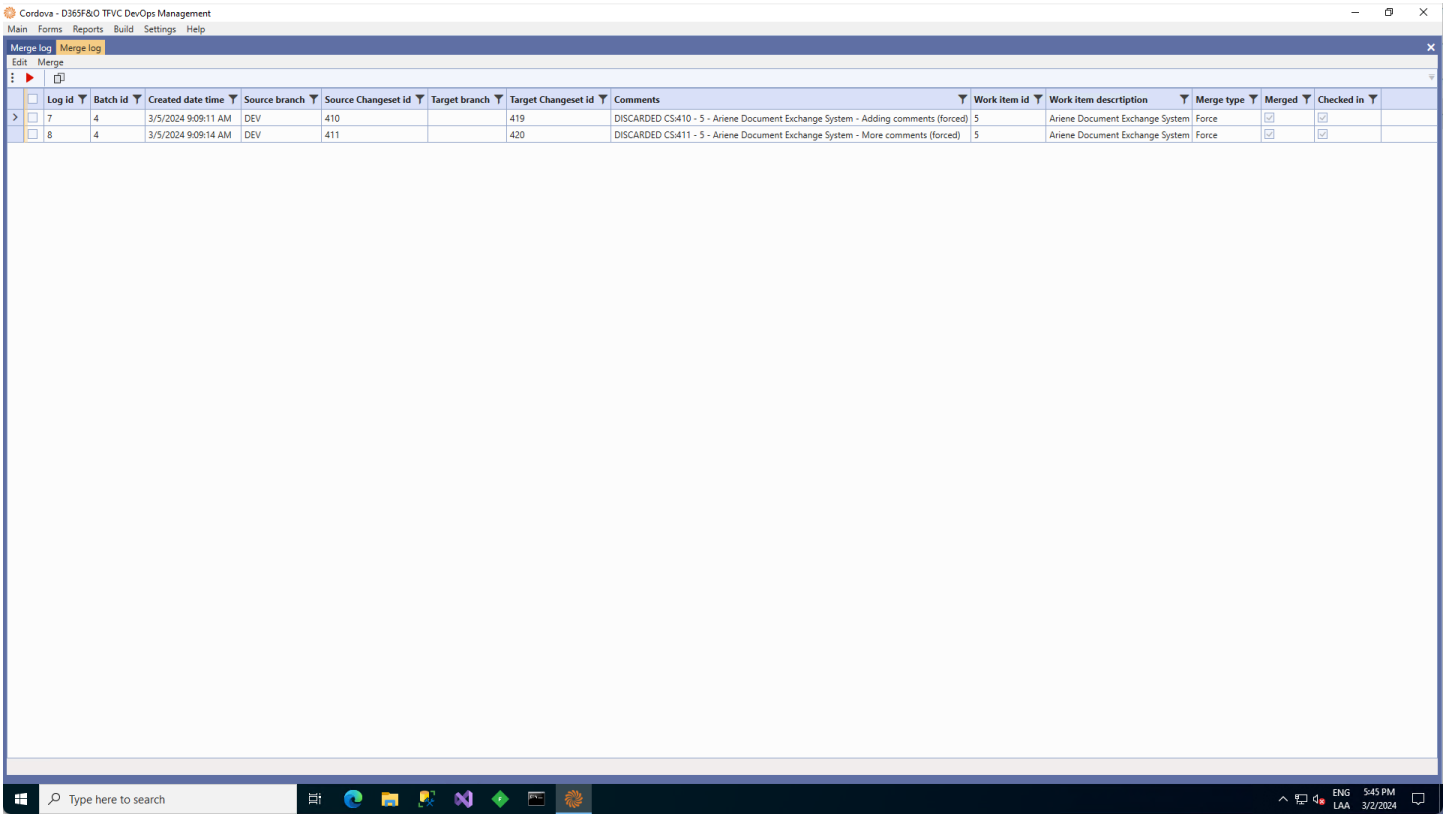

After the force merge is complete the system will bring up a merge log window with the resulting operation.

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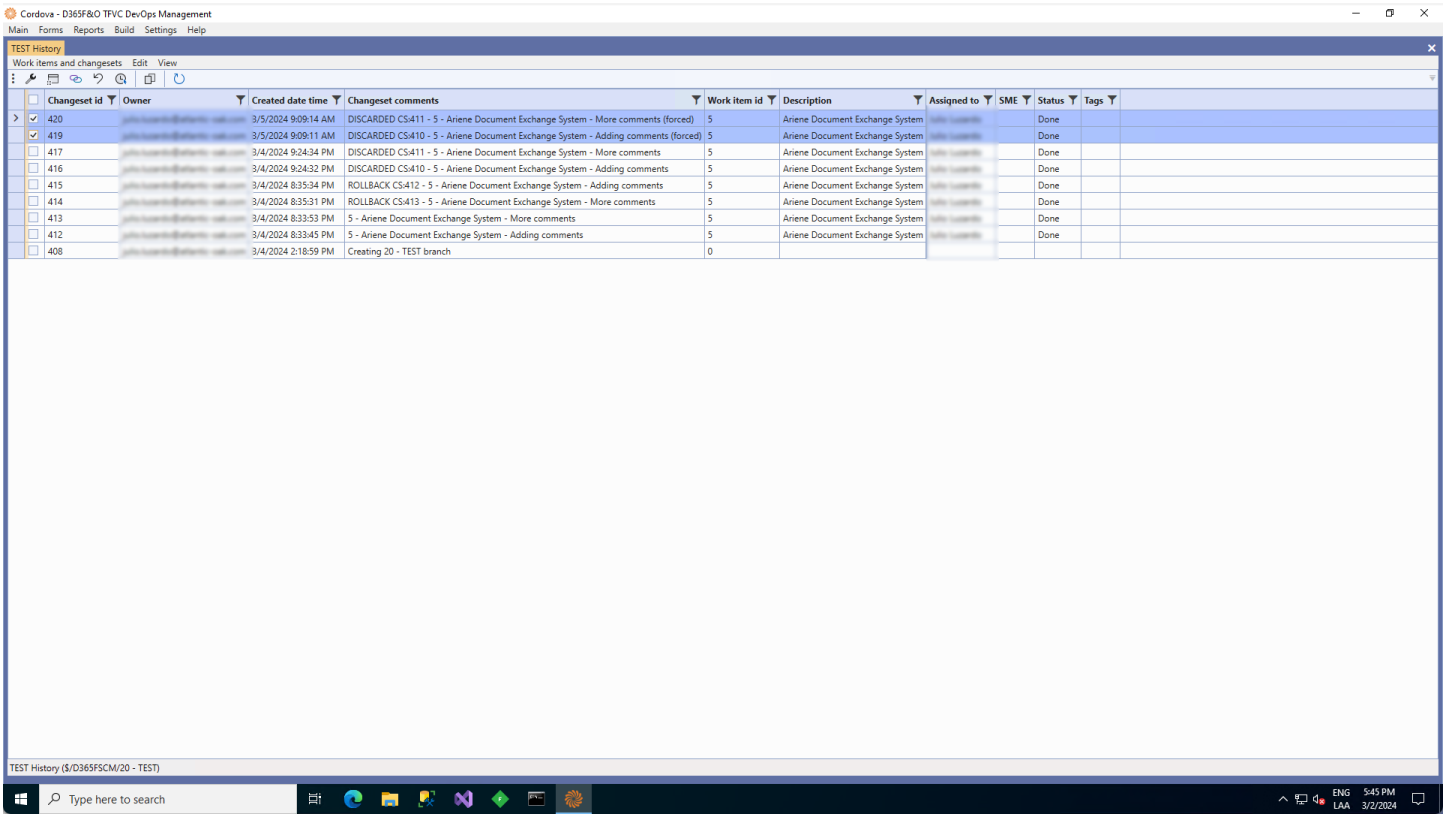

If you decide to promote changesets after they have been discarded, this is the way to do so.

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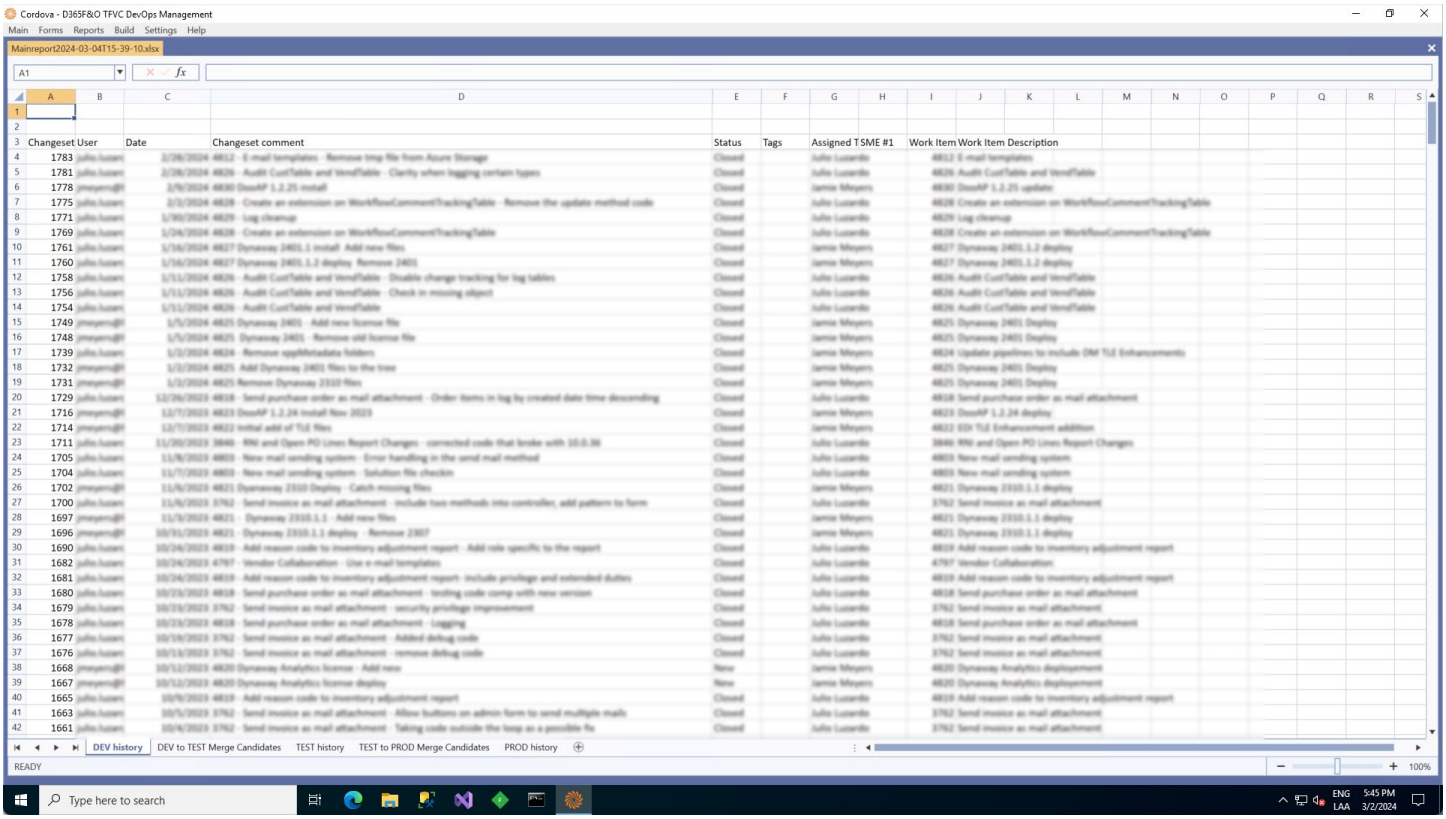
Reports

Cordova can produce excel reports that contain a snapshot of the history and merge candidates of the repositories in your system. Team members that do not have access to Visual Studio or Cordova, can use them to determine the promotions that have taken place or should take place.

History Tabs

A history tab will show the complete history for a repository.



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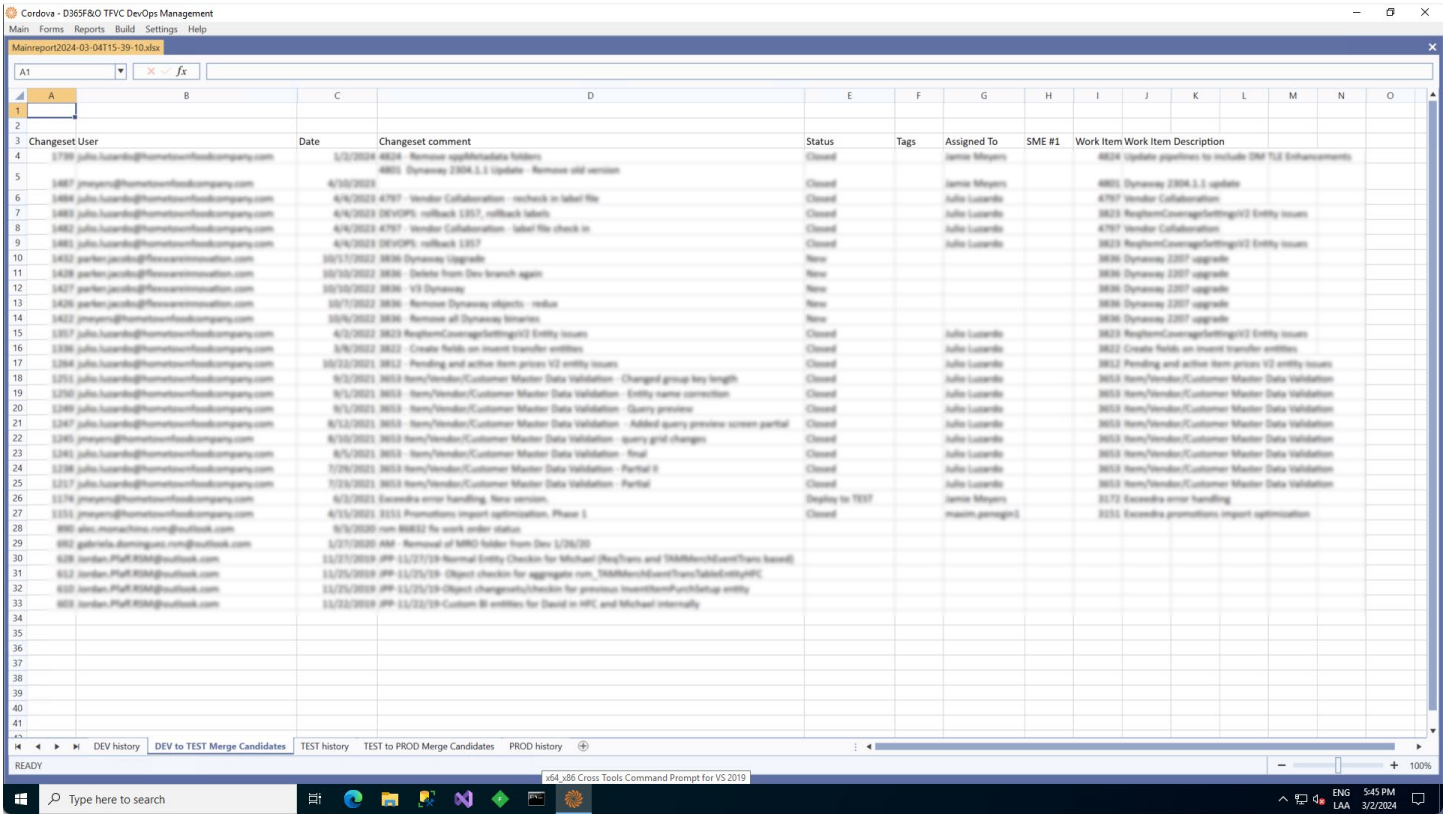
Merge Candidates Tabs

A merge candidates tab will show which changesets can be promoted from the origin repository to the target repository.



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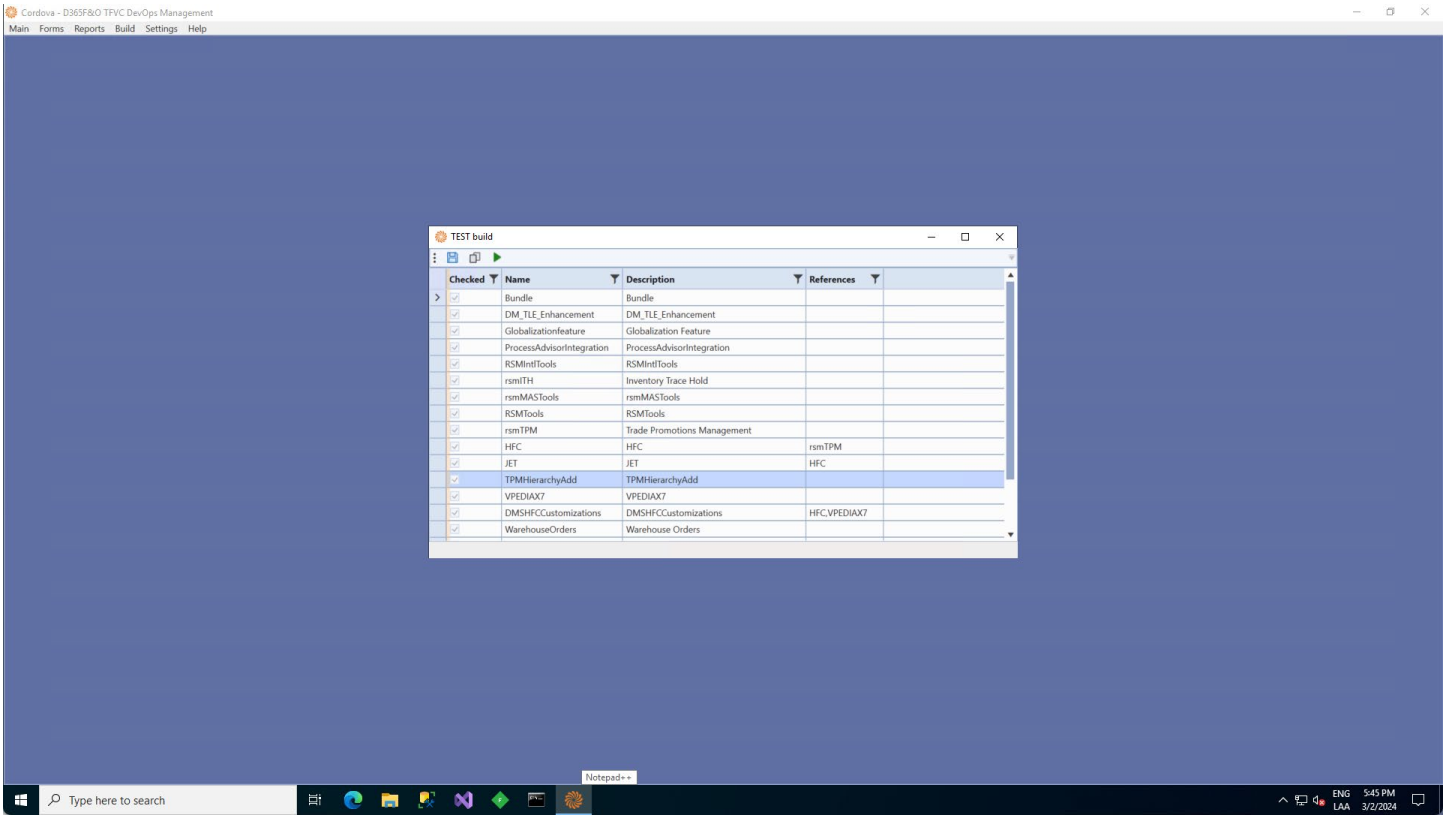
Build

The build screens allow you to do a compilation of several repositories without having to remap settings in team explorer and without the need for several one box environments.



Toolbar buttons:

Save build script to file.

Copy build script to the clipboard.

Batch merge/check in.

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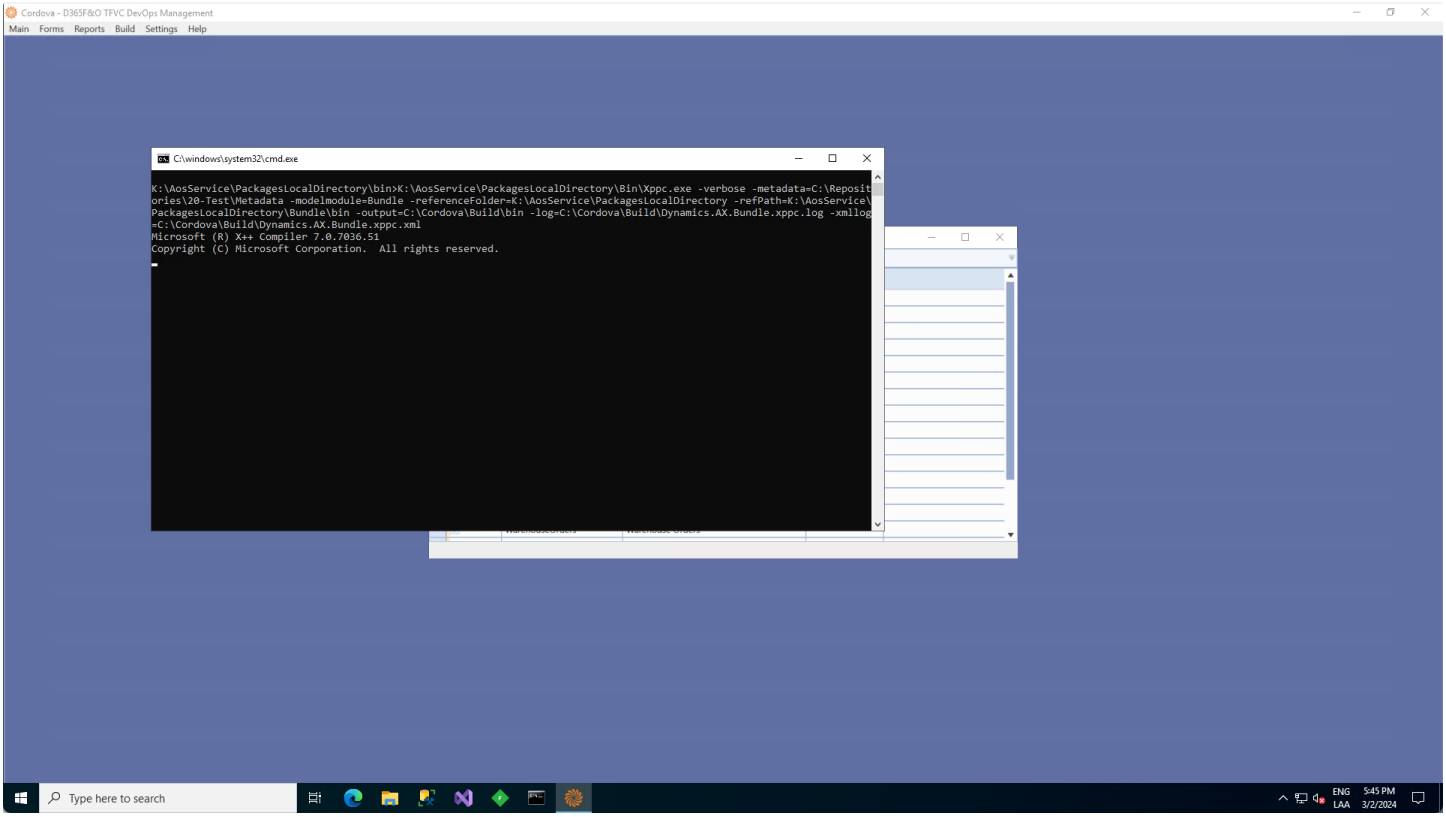
Once you begin a build, Cordova will automatically calculate the customized models and will start compiling them.



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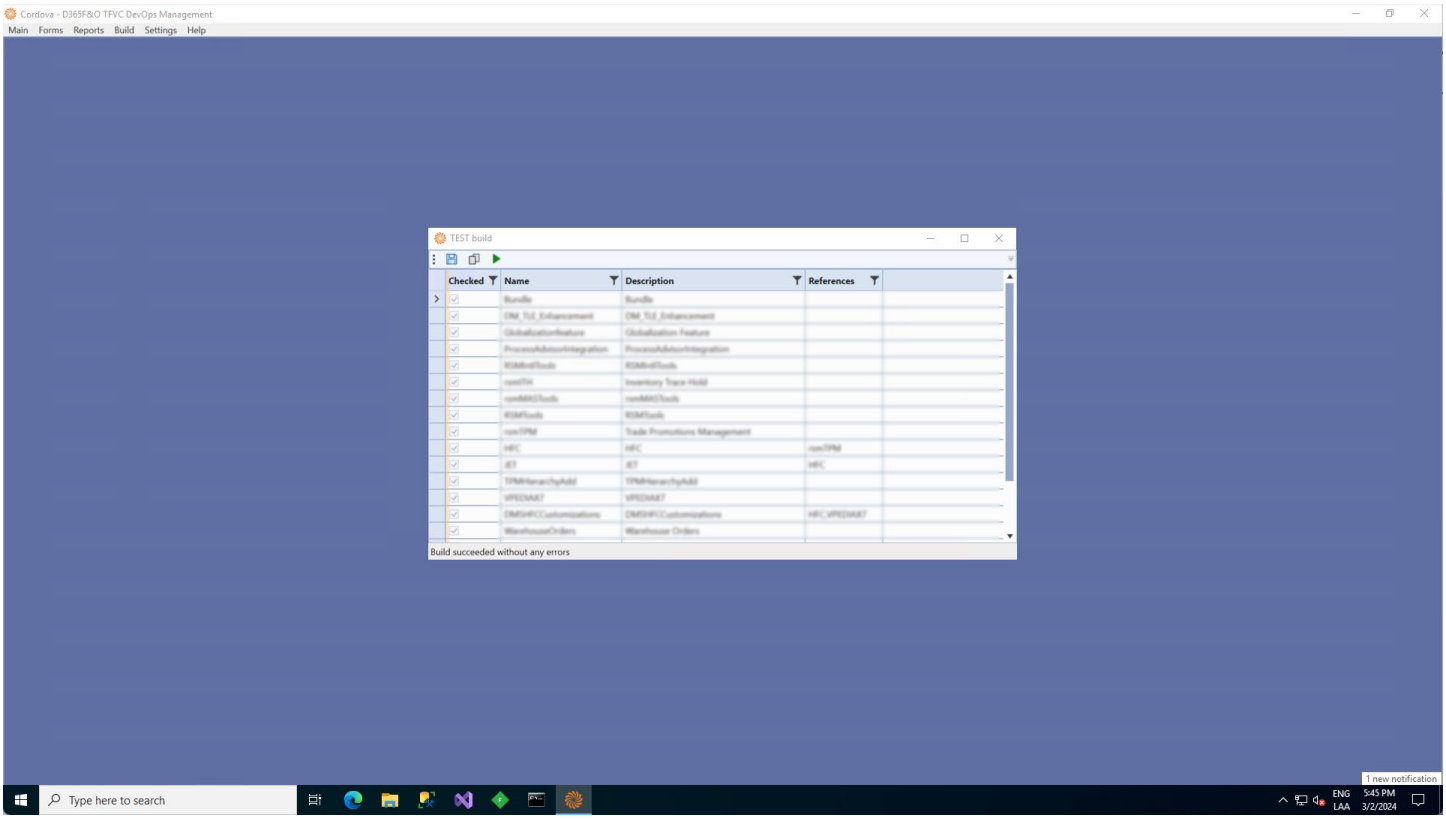
Once the build is finished, it will display the list of errors or a build successful notification.



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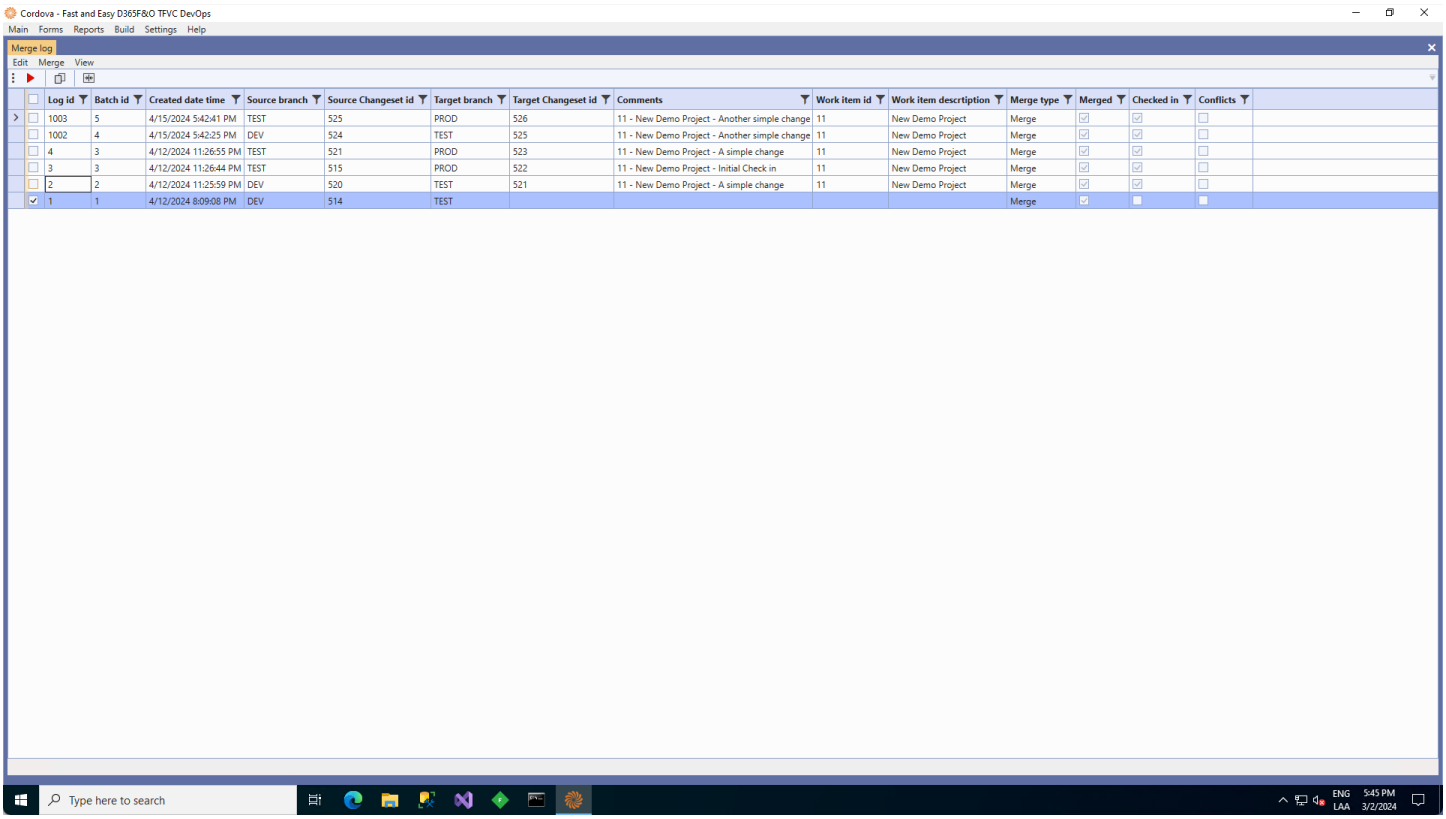
Merge log

The merge log keeps a record of all operations in Cordova.



Toolbar buttons:

Force merge.

Copy as table.

Open conflicts form

Grid columns

Log id: A consecutive number that uniquely identifies the merge operation.

Batch id: All merge operations that have the same batch id, occurred during the same batch process (rollback, merge/check in, force merge).

Created date time: date and time of the merge operation.

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Source branch: The source branch descriptor.

Source changeset id: the source changeset id.

Target branch: The target branch descriptor.

Target changeset id: The target changeset id.

Comments: The changeset comments.

Work item id: The associated work item id in Azure DevOps.

Work item description: The work item description.

Merge type: The type of merge, Rollback, Merge, Force Merge, Discard.

Merged: If the merge has taken place.

Checked in: If changes have been checked in.

Conflicts: If the operation had conflicts.

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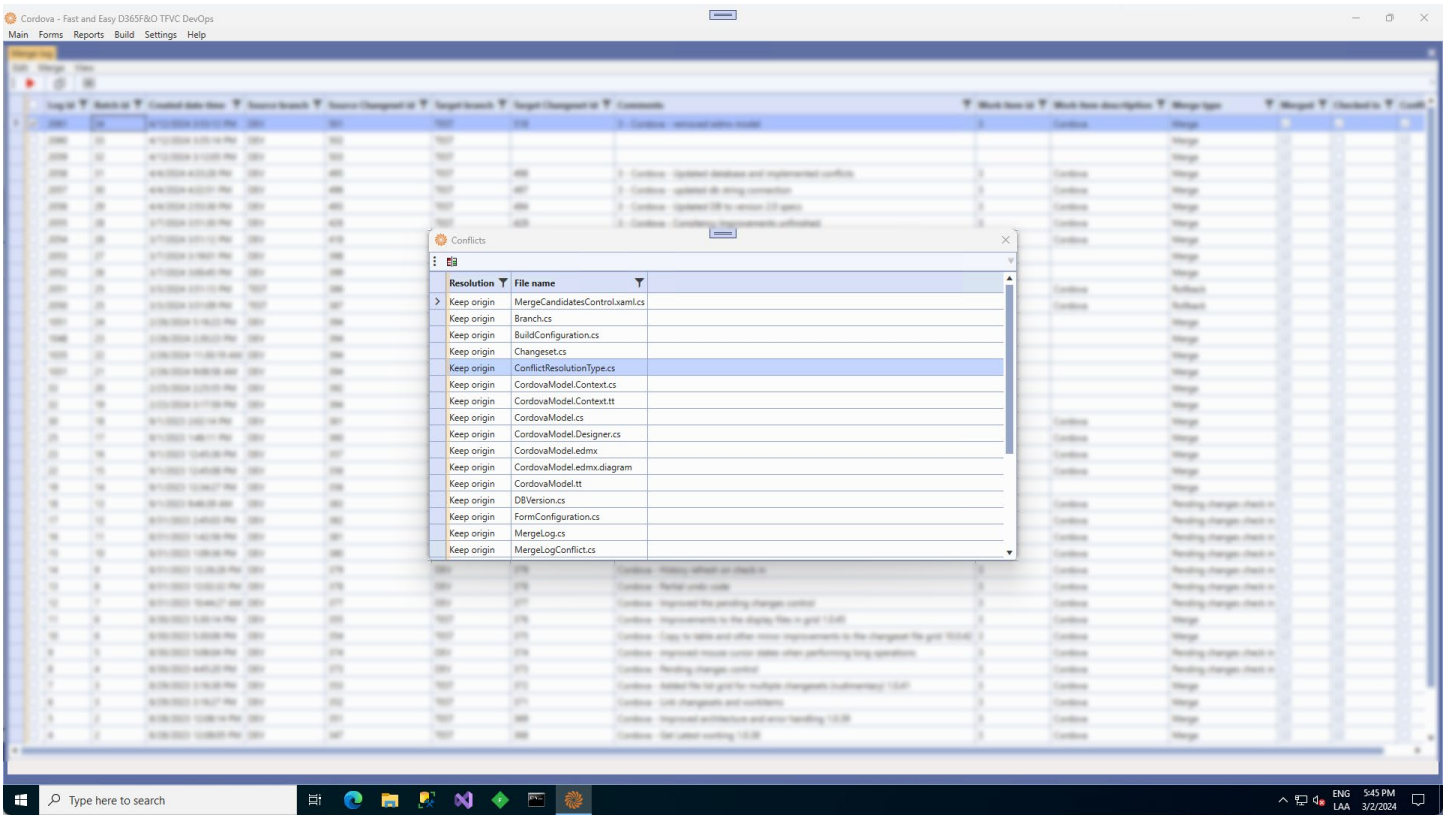
Conflicts

The conflicts form details all the conflicts that occurred in an operation.



Toolbar buttons:

View file differences.

Grid columns

Resolution: The type of resolution that was applied to the conflict.

File name: The name of the conflicting file.

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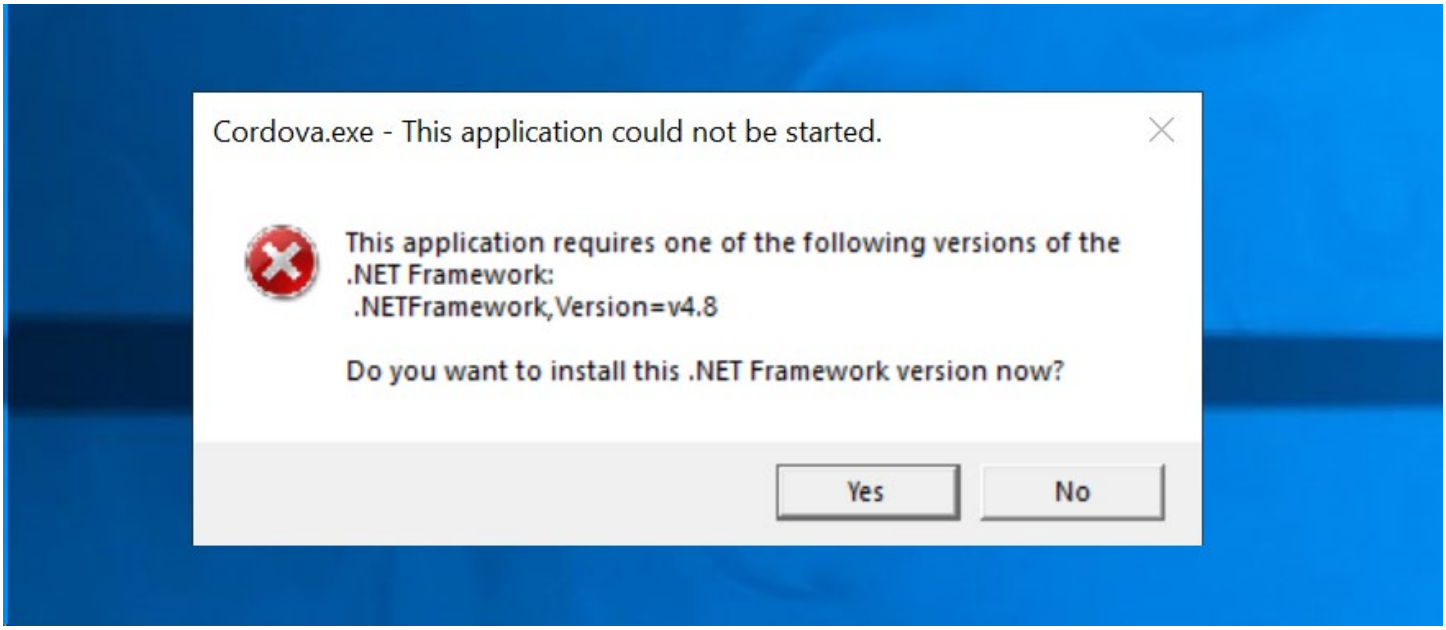
Troubleshooting

Problem: Cordova will not start because the .NET framework runtime for 4.8 is not installed

This is a common problem in older VMs. The Cordova app will not start and will display a message box.



Solution:

1. Go to windows update and click on the “check for updates” button. Make sure all updates have been applied.
2. If the above does not fix the issue, it might be a TLS problem. Run this PowerShell script:

```
New-Item 'HKLM:\SOFTWARE\WOW6432Node\Microsoft\.NETFramework\v4.0.30319' -Force | Out-Null
New-ItemProperty -path 'HKLM:\SOFTWARE\WOW6432Node\Microsoft\.NETFramework\v4.0.30319' -name 'SystemDefaultTlsVersions' -value '1' -PropertyType 'DWord' -Force | Out-Null
New-ItemProperty -path 'HKLM:\SOFTWARE\WOW6432Node\Microsoft\.NETFramework\v4.0.30319' -name 'SchUseStrongCrypto' -value '1' -PropertyType 'DWord' -Force | Out-Null
New-Item 'HKLM:\SOFTWARE\Microsoft\.NETFramework\v4.0.30319' -Force | Out-Null
New-ItemProperty -path 'HKLM:\SOFTWARE\Microsoft\.NETFramework\v4.0.30319' -name 'SystemDefaultTlsVersions' -value '1' -PropertyType 'DWord' -Force | Out-Null
```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```
New-ItemProperty -path 'HKLM:\SOFTWARE\Microsoft\.NETFramework\v4.0.30319' -name 'SchUseStrongCrypto' -value '1' -
PropertyType 'DWord' -Force | Out-Null
New-Item 'HKLM:\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Protocols\TLS 1.2\Server' -Force | Out-Null
New-ItemProperty -path 'HKLM:\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Protocols\TLS 1.2\Server' -
name 'Enabled' -value '1' -PropertyType 'DWord' -Force | Out-Null
New-ItemProperty -path 'HKLM:\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Protocols\TLS 1.2\Server' -
name 'DisabledByDefault' -value 0 -PropertyType 'DWord' -Force | Out-Null
New-Item 'HKLM:\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Protocols\TLS 1.2\Client' -Force | Out-Null
New-ItemProperty -path 'HKLM:\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Protocols\TLS 1.2\Client' -
name 'Enabled' -value '1' -PropertyType 'DWord' -Force | Out-Null
New-ItemProperty -path 'HKLM:\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Protocols\TLS 1.2\Client' -
name 'DisabledByDefault' -value 0 -PropertyType 'DWord' -Force | Out-Null
Write-Host 'TLS 1.2 has been enabled.'
```

You can also download this PowerShell script from:
https://atlanticoak.blob.core.windows.net/aocdsupport/NETFramework4.8.ps1

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