

Using Vault Pro and BIM360 Docs Publishing Drawings to the Outside World

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Technical Manager, CADGROUP Australia



eMails!

139 B

eMails/day

Business eMails per day,
worldwide

83

eMails/day

for the average office
worker

20

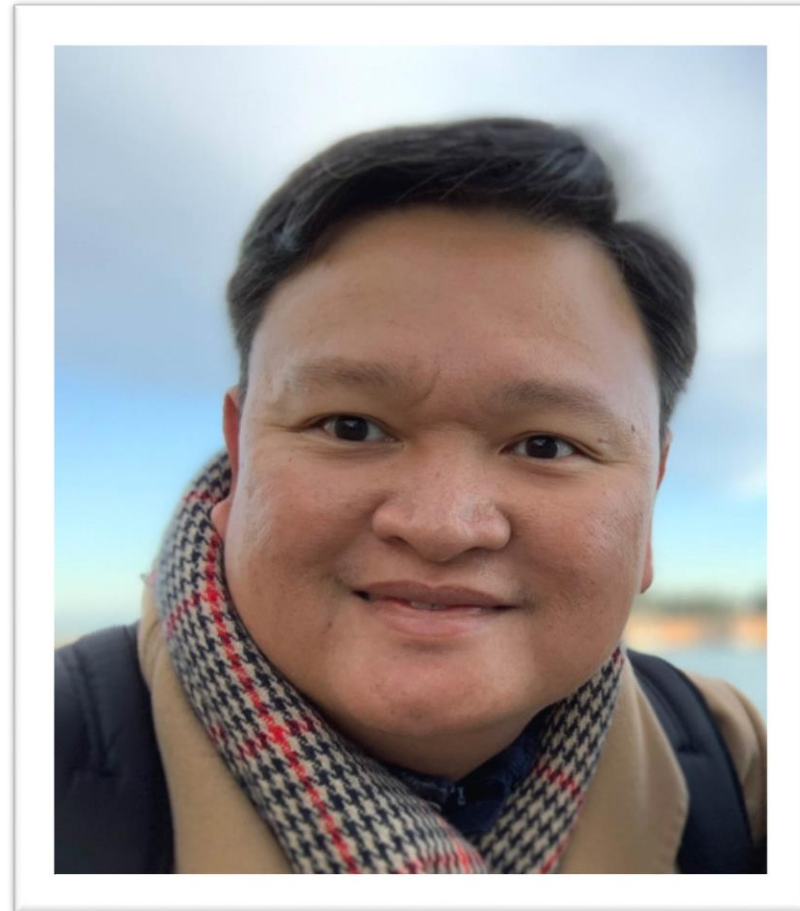
eMails have attachments

average of 500KB per
attachment

10,000

HDD's

1TB hard drives per day



Carlos Lastrilla

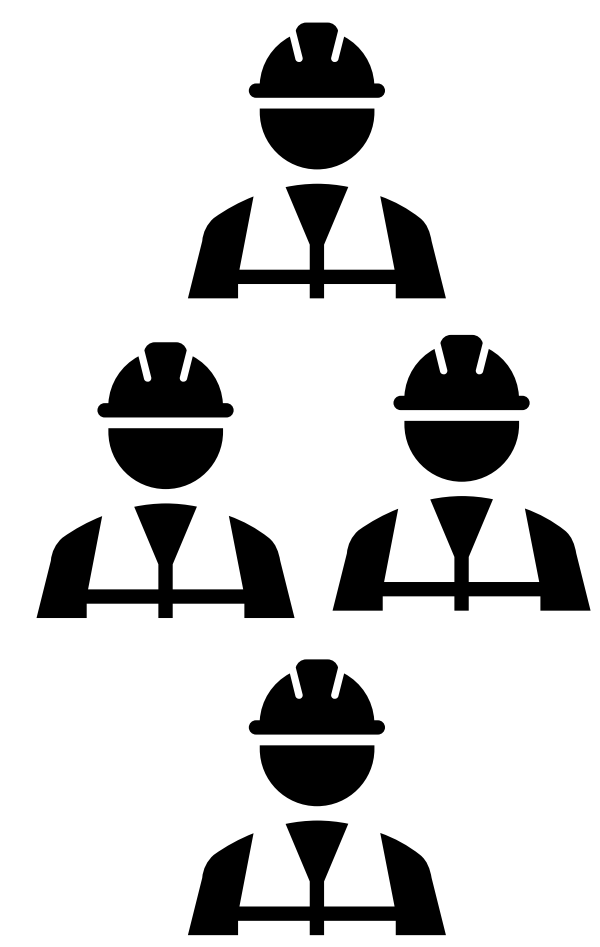
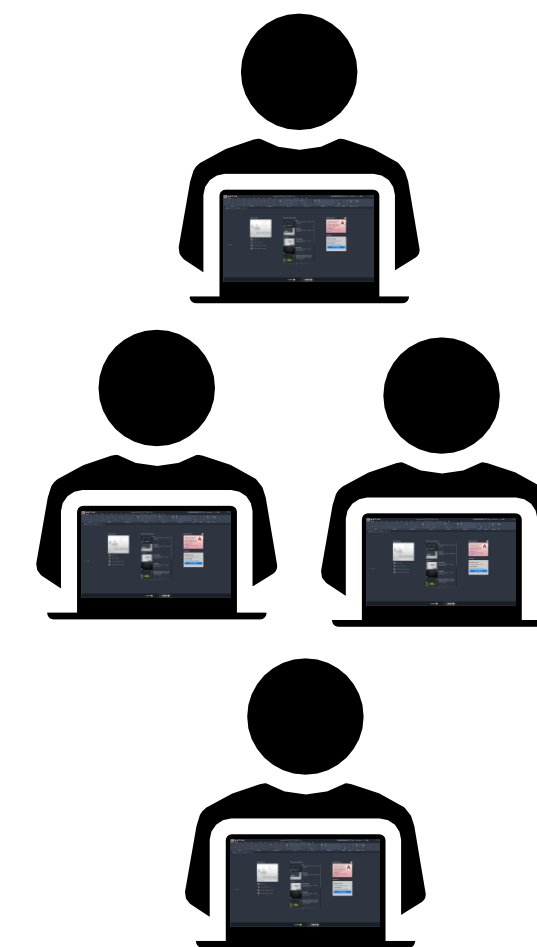
Technical Manager, CADGROUP Australia

Helping people find and use technology to make things work better.

- There's got to be a better way than using eMails for sharing files.
- You may have a high-tech data management system, but is external file sharing your bottleneck?



- Vault is great as your on-premise Data Management System.
- BIM360 Docs is the mirror to your Vault



The background of the slide features a grayscale image of a city skyline, with a prominent bridge in the foreground. The bridge has a modern, curved design with multiple supports. The city skyline includes several tall skyscrapers, with the Transamerica Pyramid being the most prominent one in the center. The overall scene is viewed from a low angle, looking up at the bridge and the city.

Controlled

The right person, the right access, at the right time

Convenient

Automated processes with minimum human intervention

Consolidated

Single Source of Truth

Publishing DXF and PDF Files

Design is ready to be fabricated

Publish DXF and PDF files to a contractor

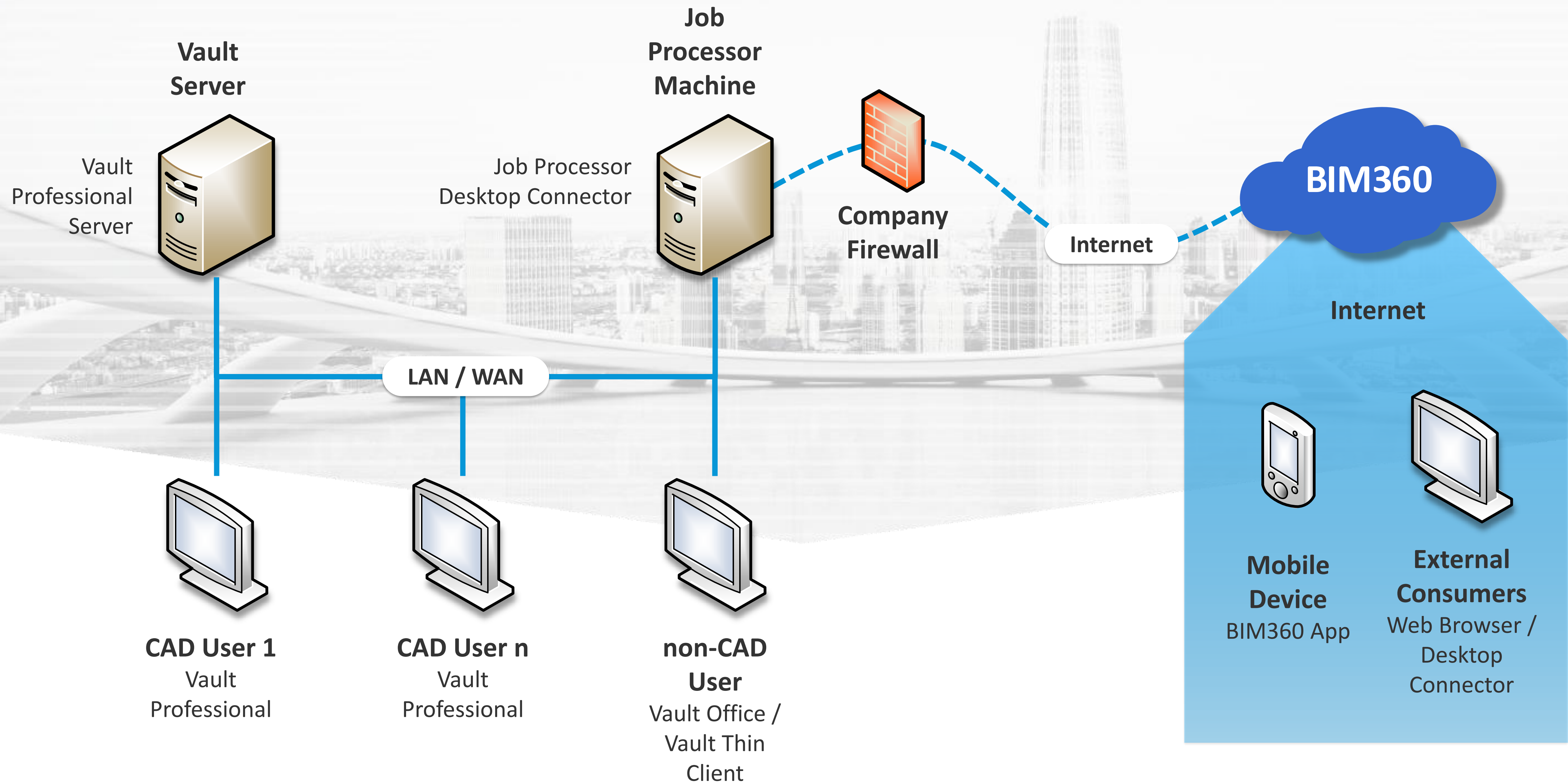
Issuing Drawings for Construction

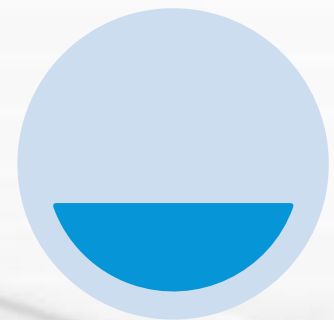
Design is ready to be sent out at the IFC state

Publish the 3D model and 2D drawings

The Building Blocks

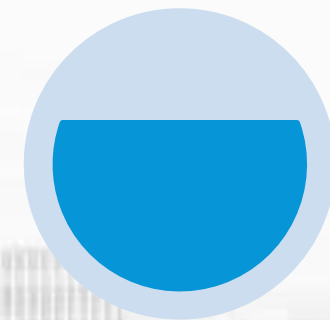






Project Sync is triggered in **Vault**

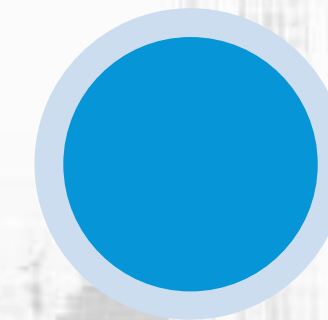
The Project Sync command is triggered automatically at specified intervals or time schedule, or manually by selecting a file and choosing to Upload to Cloud Drive command.



Job Processor extracts file from Vault and passes it to **Desktop Connector**

The specific Project Sync job is submitted to the Job Queue.

The Job Processor then gets the necessary files from Vault, then passes it on to the Desktop Connector, which is installed on the same machine as the Job Processor



Desktop Connector syncs the file to **BIM360 Docs**

Once the Desktop Connector receives the files, it then syncs this to the BIM360 Docs location. If the file in Docs is the same as the file in Vault, then the upload is skipped. If the file in Vault is newer than the one in Docs, then the file is uploaded.

Create the BIM360 Docs Project

- Set up the BIM360 Docs Project
- Add the Primary Admin

Create Project Profile

Step 1 of 2

* Project Name

Project name is valid.

* Project Type

Construction Type

Project Value

Contract Type


* Project Start Date

* Project End Date

Project Job Number

Business Unit

Project Image



Select image to upload
JPEG, GIF, PNG, or BMP file
(4MB max)

Browse

Project Address

Project Time Zone

* BIM 360 Field Project Language

Cancel

Save & continue

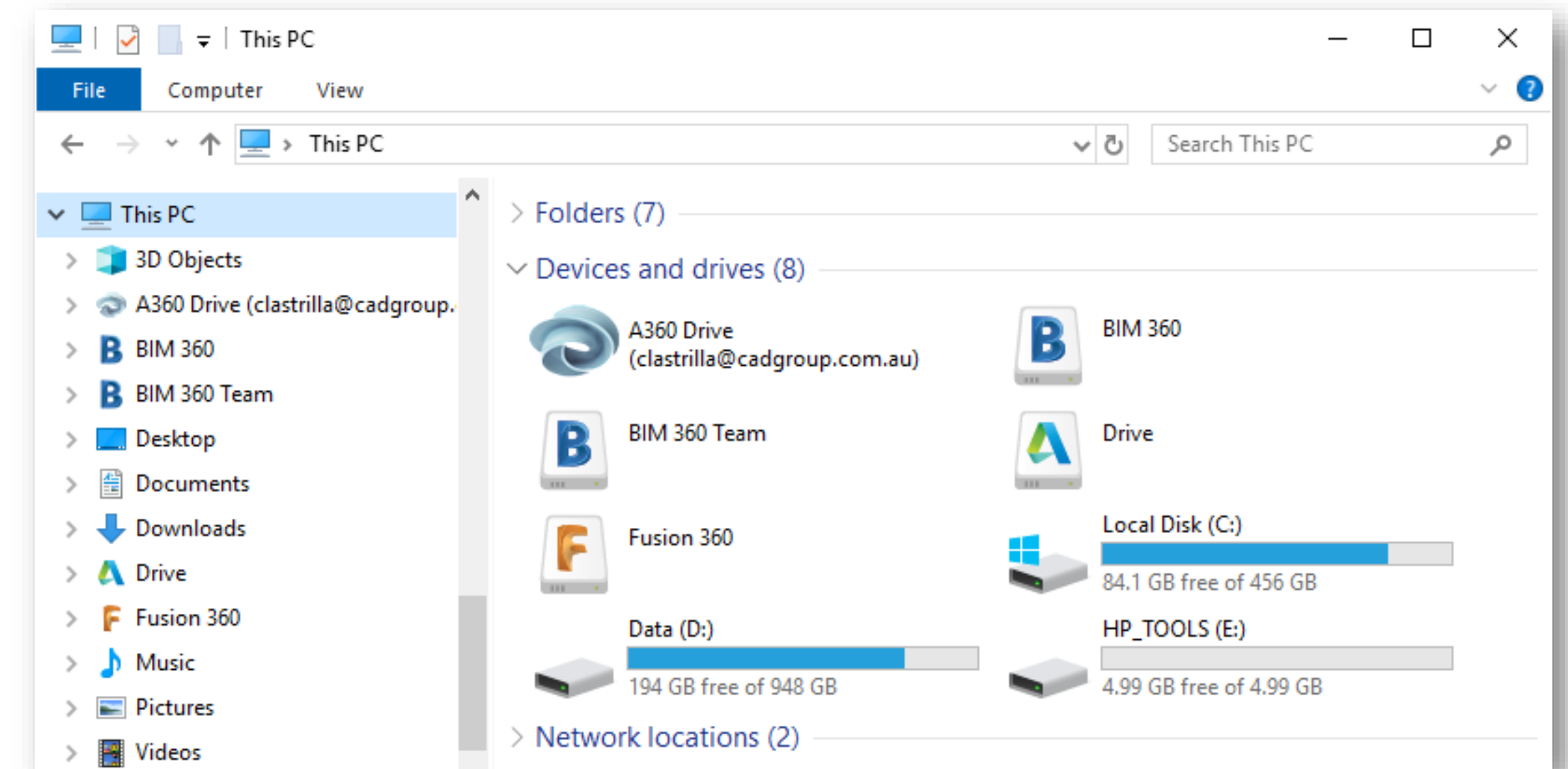


Video – Installing Autodesk Desktop Connector

<https://knowledge.autodesk.com/community/collection/using-vault-professional-and-bim360-docs---publishing-drawings-to-the-outside-world>

Installing Autodesk Desktop Connector

- Install the Desktop Connector on the Job Processor machine.
- Log in with a BIM360 Docs Account.
- Make sure the correct hub and project is available.



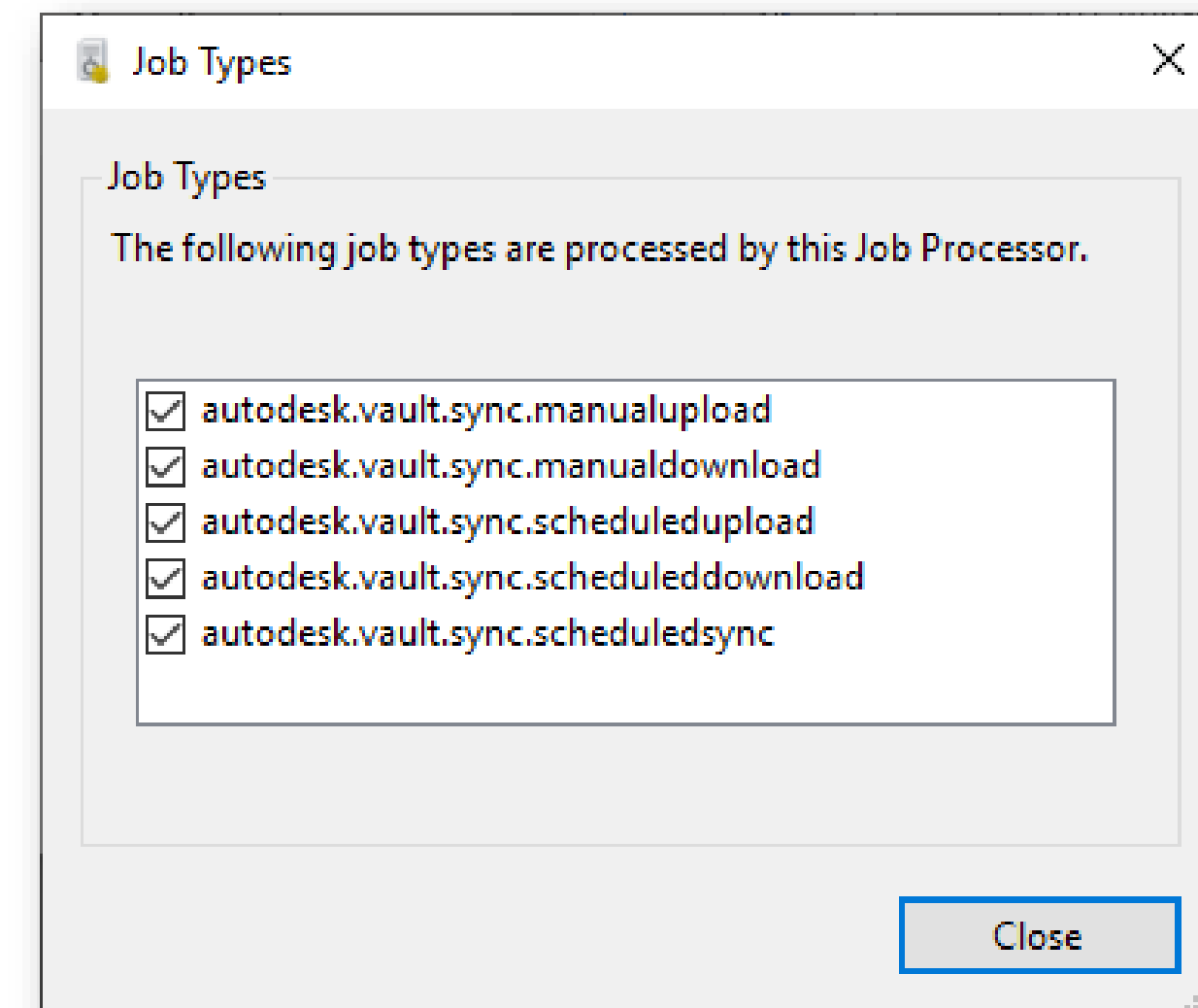
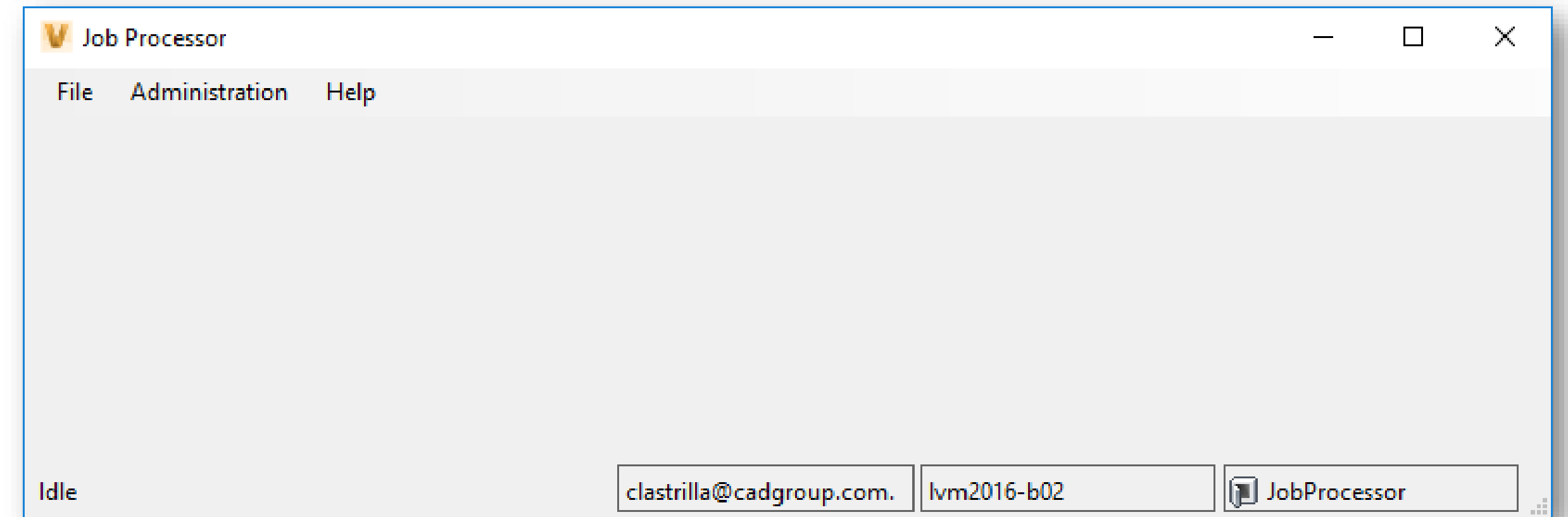


Video – Installing Autodesk Desktop Connector

<https://knowledge.autodesk.com/community/collection/using-vault-professional-and-bim360-docs---publishing-drawings-to-the-outside-world>

Preparing the Job Processor

- Run the Job Processor.
- 2 log-ins to consider:
 - Log in with the Job Processor Vault Account.
 - Log in with the BIM360 Docs account (same as Desktop Connector).
- Make sure the Project Sync jobs are enabled.



The background of the slide is a faded, light-colored image of a city skyline, likely San Francisco, featuring the Transamerica Pyramid and other skyscrapers. A bridge, possibly the Bay Bridge, is visible in the foreground, spanning across the water. The overall tone is light and professional.

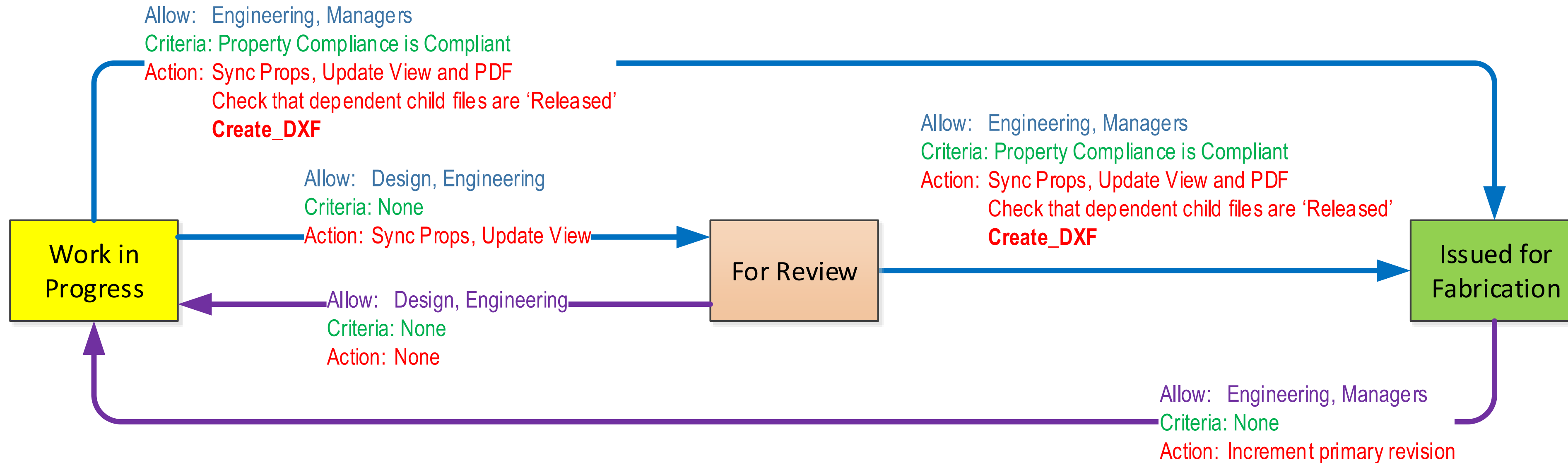
Video – Job Processor with Autodesk Desktop Connector

<https://knowledge.autodesk.com/community/collection/using-vault-professional-and-bim360-docs---publishing-drawings-to-the-outside-world>

Use Case 1

Publishing DXF and PDF files





Sending out files for Fabrication

- The design is ready for fabrication by an external contractor.
- You want to send the DXF files out to the plasma cutting contractor to cut from, but also send out the PDF so they can verify details
- Vault generates the PDF files from the DWG files.
- powerJobs generates the DXF files from Inventor Sheet Metal IPT files.
- Only upload the files with a property called PROCESS that has a value of PLASMA



Video – DXF and PDF files synced from Vault to BIM360 Docs

<https://knowledge.autodesk.com/community/collection/using-vault-professional-and-bim360-docs---publishing-drawings-to-the-outside-world>

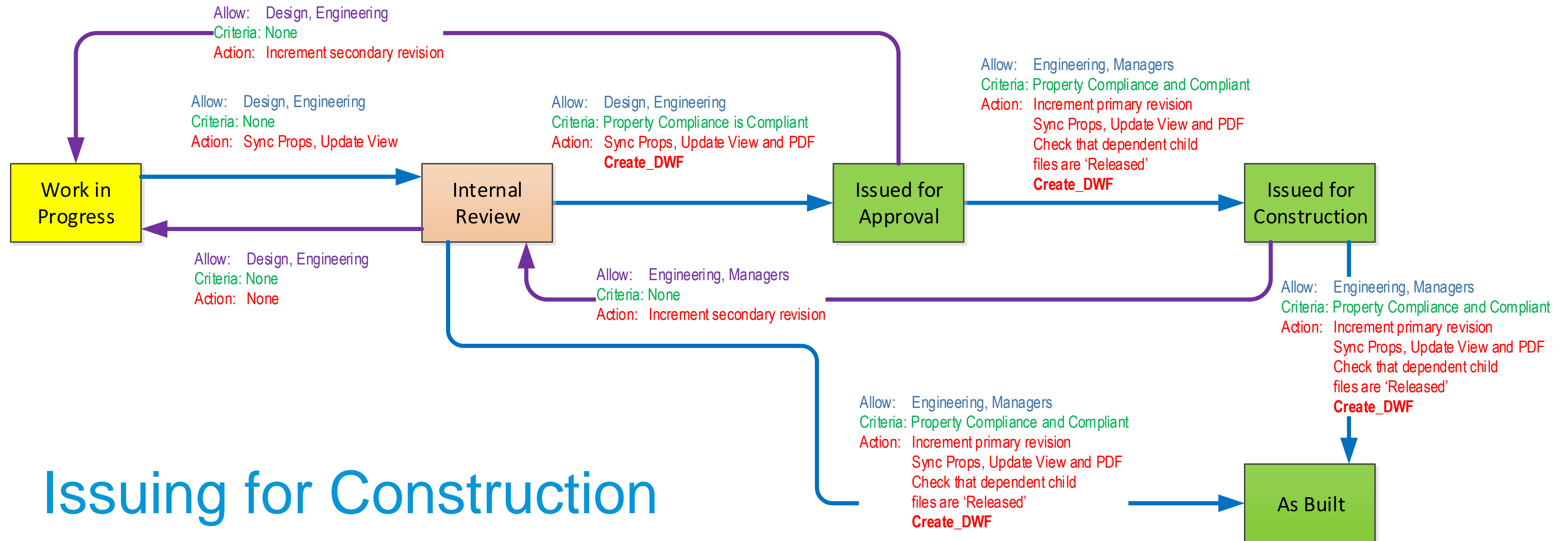
Video – Configuring Use Case 1

<https://knowledge.autodesk.com/community/collection/using-vault-professional-and-bim360-docs---publishing-drawings-to-the-outside-world>

Use Case 2

Issuing for Construction





Issuing for Construction

- The design is ready to be issued at IFC for the contractors.
- We need to send out the 3D model and associated 2D drawings.
 - Vault generates the PDF from the DWG files.
 - powerJobs generates the DWFx from the 3D models.

Video – Issuing files for Construction

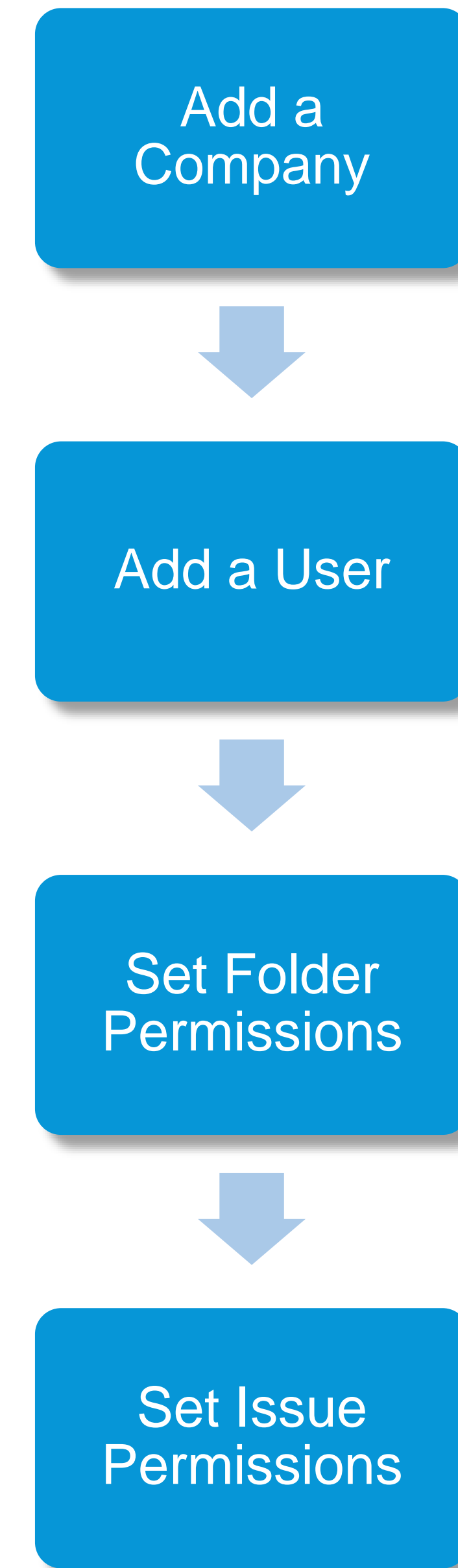
<https://knowledge.autodesk.com/community/collection/using-vault-professional-and-bim360-docs---publishing-drawings-to-the-outside-world>

Video – Configuring Use Case 2

<https://knowledge.autodesk.com/community/collection/using-vault-professional-and-bim360-docs---publishing-drawings-to-the-outside-world>

Getting BIM360 Docs Ready

- Add the Company Name of the External stakeholder.
- Add a User for the External stakeholder and include them in the Project.
- Set Issue permissions.
- Set Folder permissions.
- Set Issue permissions.



Video – Adding Companies and Users to the Project

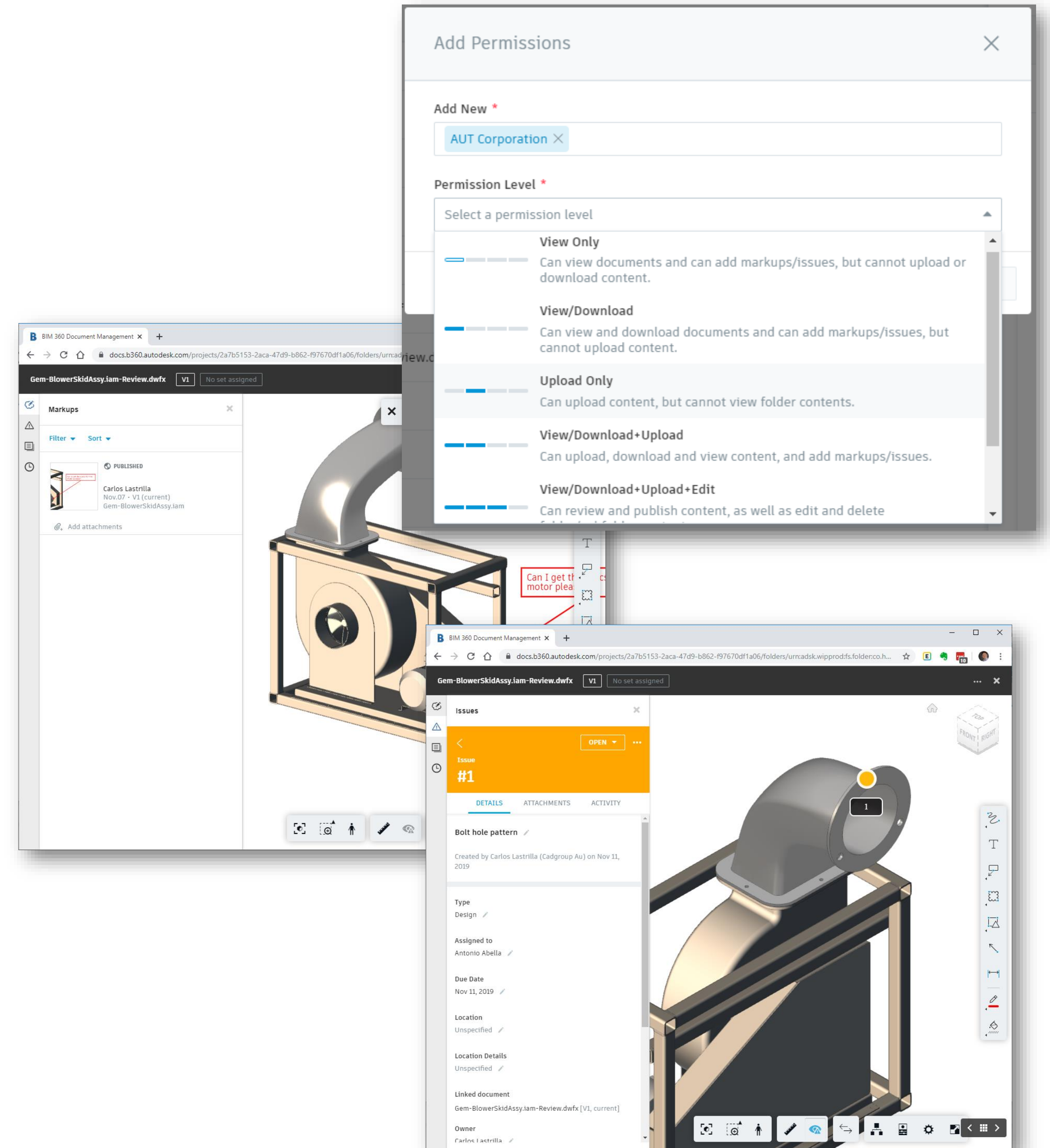
<https://knowledge.autodesk.com/community/collection/using-vault-professional-and-bim360-docs---publishing-drawings-to-the-outside-world>

Video – Granting Users permissions to create Issues

<https://knowledge.autodesk.com/community/collection/using-vault-professional-and-bim360-docs---publishing-drawings-to-the-outside-world>

Using BIM360 Docs

- Subscribing to folders.
- Viewing the files in BIM360 Docs.
- Marking up the file in BIM360 Docs.
- Creating issues in BIM360 Docs.





Video – Setting up Folder Permissions and Subscribing to Folders

<https://knowledge.autodesk.com/community/collection/using-vault-professional-and-bim360-docs---publishing-drawings-to-the-outside-world>



Video – Viewing Files, Adding Mark-ups and Creating Issues in BIM360 Docs

<https://knowledge.autodesk.com/community/collection/using-vault-professional-and-bim360-docs---publishing-drawings-to-the-outside-world>

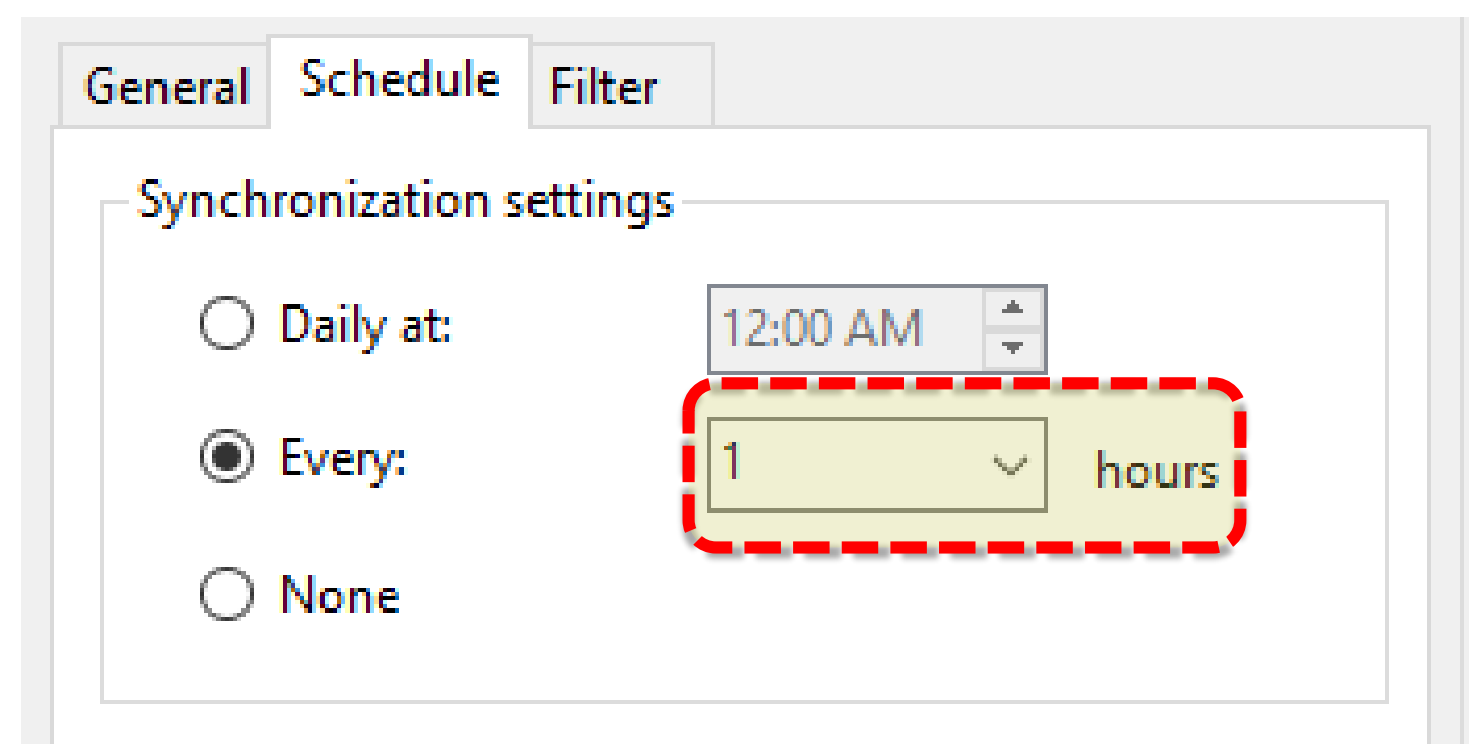
Other Tips



Project Sync Intervals

- Out-of-the-box, the minimum sync interval is 8 hours.
- This can be set to as low as 1 hour by editing **Connectivity.VaultPro.exe.config**
- Add the key “ProjectSyncMinimumFrequency”
- The value format is in HH:MM:SS
- The minimum value is 1 hour.
- This file is in:

C:\Program Files\Autodesk\Vault Professional 2020\Explorer



The screenshot shows the 'Connectivity.VaultPro.exe.config' file in Notepad++. The XML content is as follows:

```
315     </endpointBehaviors>
316   </behaviors>
317 </system.serviceModel>
318
319 <appSettings>
320   <!-- ProjectSync Interval -->
321   <add key="ProjectSyncMinimumFrequency" value="01:00:00" />
322
323   <!-- Application Name -->
324   <add key="AppName" value="Autodesk Vault Professional
325     2020"/>
326
327   <add key="helpProductName" value="Vault"/>
328
329   <add key="landingPageURL" value="VaultHTML\index.html"/>
330   <add key="autodeskOnTheWeb" value="ID_WebLinks_VLT.htm"/>
331
332   <!-- Sort order of items in the navigation tree -->
333   <add key="NavigationTreeSort" value=
334     "COMaster,ItemMaster,DocFolder,CustomObjects,SearchFolders
335     "/>
336
337   <!-- Text Attributes for rows in Main Grid and Workspace
338     Sync -->
339   <!-- Color format is (#AARRGGBB) -->
340   <!-- BoldText, ItalicText, UnderlineText and
341     StrikeoutText are boolean -->
342   <add key="CheckedOutByCurrentUser.Color" value=
343     "#FF1919FA"/>
344   <add key="CheckedOutByCurrentUser.BoldText" value="true"/>
345   <add key="CheckedOutByCurrentUser.ItalicText" value=
346     "false"/>
347   <add key="CheckedOutByCurrentUser.UnderlineText" value=
348     "false"/>
349   <add key="CheckedOutByCurrentUser.StrikeoutText" value=
```

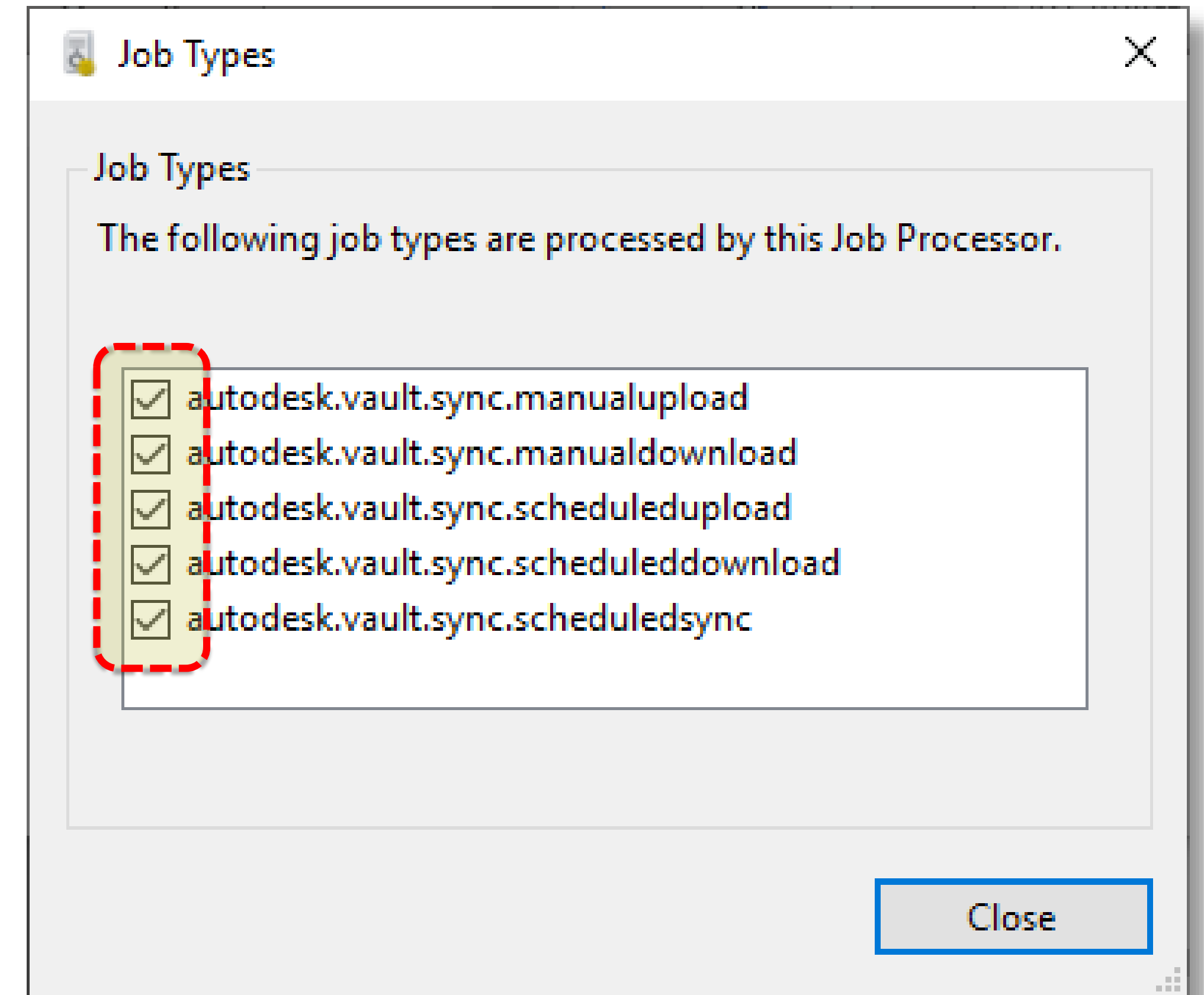
A red dashed box highlights the `<add key="ProjectSyncMinimumFrequency" value="01:00:00" />` line in the XML.

Job Processor running only Project Sync Jobs

- In scenarios where you have a dedicated Job Processor for syncing to BIM360 Docs.
- The dedicated Job Processor can be configured to run only Project Sync jobs by modifying the **JobProcessor.exe.config** file located in:

C:\Program Files\Autodesk\Vault Professional 2020\Explorer

- Comment out all jobs except the **<!-- Portal Handlers -->**
- Restart the Job Processor after making these changes




```
35 <extHandler command="Document.PropertyUpdate" handler="Connectivity.Explorer.ExtensionHandlerOffice.OLEExtHandler, Connectivity.Explorer.ExtensionHandler.Office"
36 extensions="doc,dot,xls,xlt,xla,ppt,pot,ppa,mpp,mpt,vsd,vst"/>
37 <extHandler command="Document.PropertyUpdate" handler="Connectivity.Explorer.ExtensionHandlerOffice.OpenOfficeExtHandler, Connectivity.Explorer.ExtensionHandler.Office"
38 extensions="docx,dotx,xlsx,xltx,xlax,pptx,potx,ppax,mppx,mptx,vsd,x,vstx"/>
39 </extHandlers>
40 <jobHandlers>
41 <!-- <jobHandler class="Autodesk.Vault.PDF.Create.idw" handler="Connectivity.Explorer.JobHandlerPdfPublish.PdfJobHandler, Connectivity.Explorer.JobHandlerPdfPublish"/>
42 -->
43 <!-- <jobHandler class="Autodesk.Vault.PDF.Create.dwg" handler="Connectivity.Explorer.JobHandlerPdfPublish.PdfJobHandler, Connectivity.Explorer.JobHandlerPdfPublish"/>
44 -->
45 <!-- <jobHandler class="Autodesk.Vault.DWF.Create.iam" handler="Connectivity.Explorer.JobHandlerDwfPublish.DwfJobHandler, Connectivity.Explorer.JobHandlerDwfPublish"/>
46 -->
47 <!-- <jobHandler class="Autodesk.Vault.DWF.Create.ipt" handler="Connectivity.Explorer.JobHandlerDwfPublish.DwfJobHandler, Connectivity.Explorer.JobHandlerDwfPublish"/>
48 -->
49 <!-- <jobHandler class="Autodesk.Vault.DWF.Create.ipn" handler="Connectivity.Explorer.JobHandlerDwfPublish.DwfJobHandler, Connectivity.Explorer.JobHandlerDwfPublish"/>
50 -->
51 <!-- <jobHandler class="Autodesk.Vault.DWF.Create.idw" handler="Connectivity.Explorer.JobHandlerDwfPublish.DwfJobHandler, Connectivity.Explorer.JobHandlerDwfPublish"/>
52 -->
53 <!-- <jobHandler class="Autodesk.Vault.DWF.Create.dwg" handler="Connectivity.Explorer.JobHandlerDwfPublish.DwfJobHandler, Connectivity.Explorer.JobHandlerDwfPublish"/>
54 -->
55 <!-- <jobHandler class="Autodesk.Vault.DWF.Create.rvt" handler="Connectivity.Explorer.JobHandlerDwfPublish.DwfJobHandler, Connectivity.Explorer.JobHandlerDwfPublish"/>
56 -->
57 <!-- <jobHandler class="Autodesk.Vault.DWF.Create.rfa" handler="Connectivity.Explorer.JobHandlerDwfPublish.DwfJobHandler, Connectivity.Explorer.JobHandlerDwfPublish"/>
58 -->
59 <!-- <jobHandler class="Autodesk.Vault.DWF.Create.rte" handler="Connectivity.Explorer.JobHandlerDwfPublish.DwfJobHandler, Connectivity.Explorer.JobHandlerDwfPublish"/>
60 -->
61 <!-- <jobHandler class="Autodesk.Vault.SyncProperties" handler="Connectivity.Explorer.JobHandler.SyncProperties.ExtHandlerSyncPropertiesJobHandler,
62 Connectivity.Explorer.JobHandlerSyncProperties"/> -->
63 <!--Update revision block handlers -->
64 <!-- <jobHandler class="Autodesk.Vault.UpdateRevisionBlock.idw" handler="Connectivity.Explorer.JobHandlerUpdateRevisionBlock.UpdateRevisionBlockJobHandler,
65 Connectivity.Explorer.JobHandlerUpdateRevisionBlock"/> -->
66 <!-- <jobHandler class="Autodesk.Vault.UpdateRevisionBlock.dwg" handler="Connectivity.Explorer.JobHandlerUpdateRevisionBlock.UpdateRevisionBlockJobHandler,
67 Connectivity.Explorer.JobHandlerUpdateRevisionBlock"/> -->
68 <!--revit add sheets creation handler -->
69 <!-- <jobHandler class="Autodesk.Vault.AddSheetsPSGPath.rvt" handler="Connectivity.Explorer.JobHandlerAddSheets.AddSheetsJobHandler,
70 Connectivity.Explorer.JobHandlerAddSheets"/> -->
71 <!-- Extract BOM handlers -->
72 <!-- <jobHandler class="Autodesk.Vault.ExtractBOM.Inventor" handler="Connectivity.Explorer.JobHandler.ExtractBOM.ExtractBomJobHandler,
73 Connectivity.Explorer.JobHandlerExtractBOM"/> -->
74 <!-- Portal handlers -->
75 <jobHandler class="Autodesk.Vault.Sync.ManualUpload" handler="Connectivity.Explorer.JobHandler.Portal.PortalJobHandler, Connectivity.Explorer.JobHandlerPortal"/>
76 <jobHandler class="Autodesk.Vault.Sync.ManualDownload" handler="Connectivity.Explorer.JobHandler.Portal.PortalJobHandler, Connectivity.Explorer.JobHandlerPortal"/>
77 <jobHandler class="Autodesk.Vault.Sync.ScheduledUpload" handler="Connectivity.Explorer.JobHandler.Portal.PortalJobHandler, Connectivity.Explorer.JobHandlerPortal"/>
78 <jobHandler class="Autodesk.Vault.Sync.ScheduledDownload" handler="Connectivity.Explorer.JobHandler.Portal.PortalJobHandler, Connectivity.Explorer.JobHandlerPortal"/>
79 <jobHandler class="Autodesk.Vault.Sync.ScheduledSync" handler="Connectivity.Explorer.JobHandler.Portal.PortalJobHandler, Connectivity.Explorer.JobHandlerPortal"/>
80 </jobHandlers>
81 <syncPropertiesPostJobExtensions>
82 <queueDwfCreateJob extension=".iam"/>
83 <queueDwfCreateJob extension=".ipt"/>
84 <queueDwfCreateJob extension=".ipn"/>
```


Modifying the PDF filename

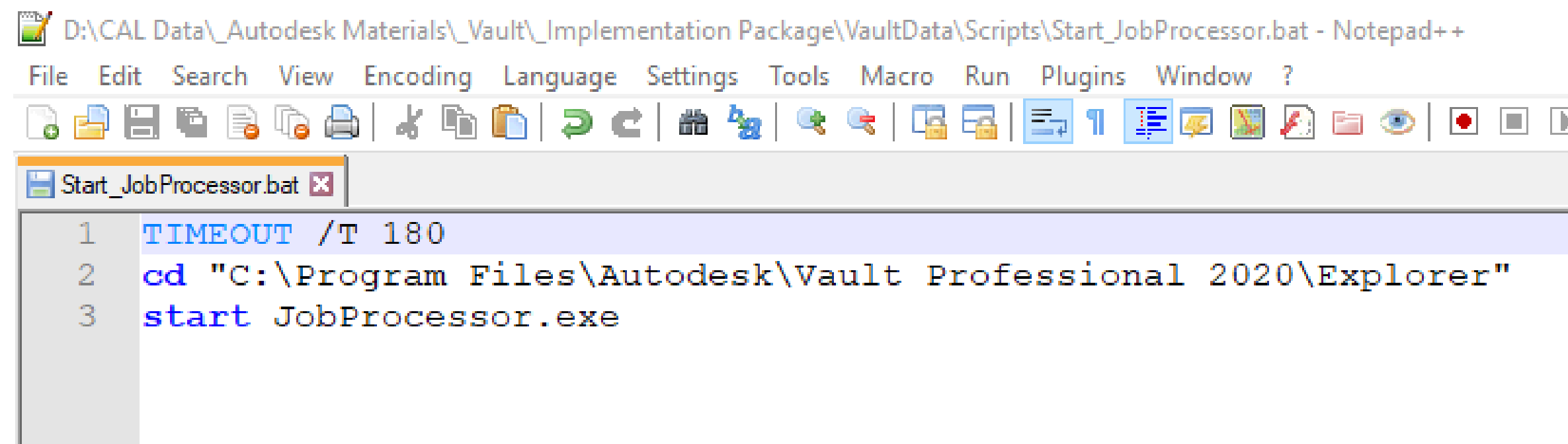
- Adding the Description UDP to the filename of the Vault-generated PDF.
- Modify the **JobProcessor.exe.config** file located in:

C:\Program Files\Autodesk\Vault Professional 2020\Explorer

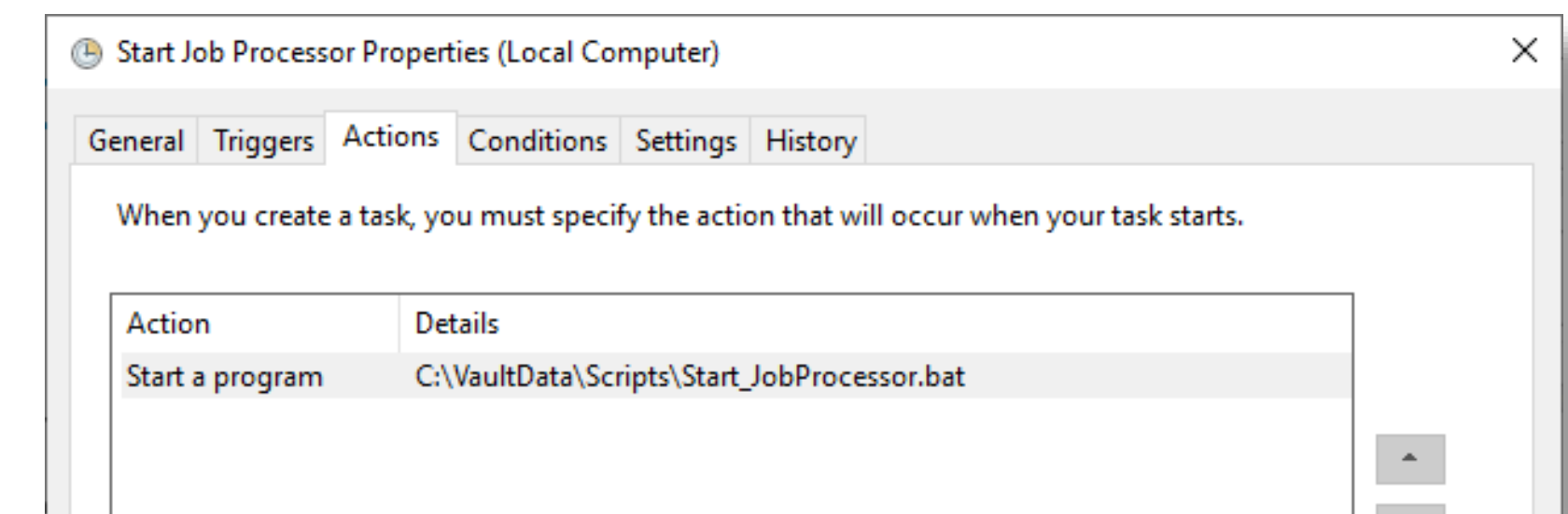
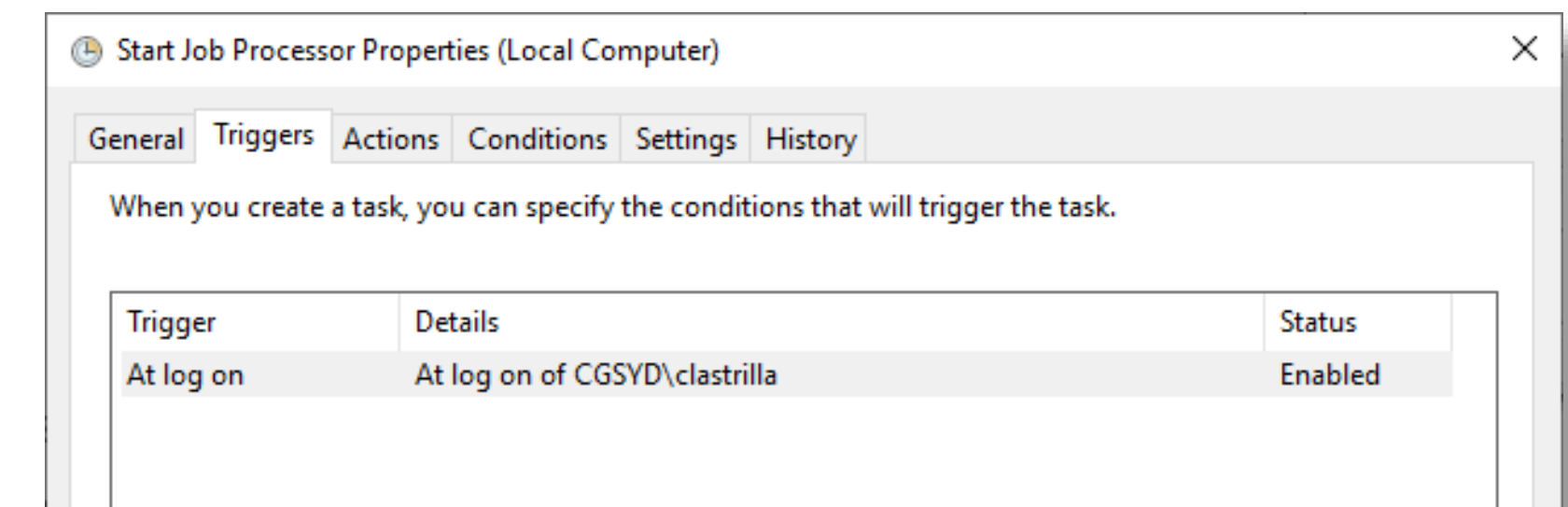
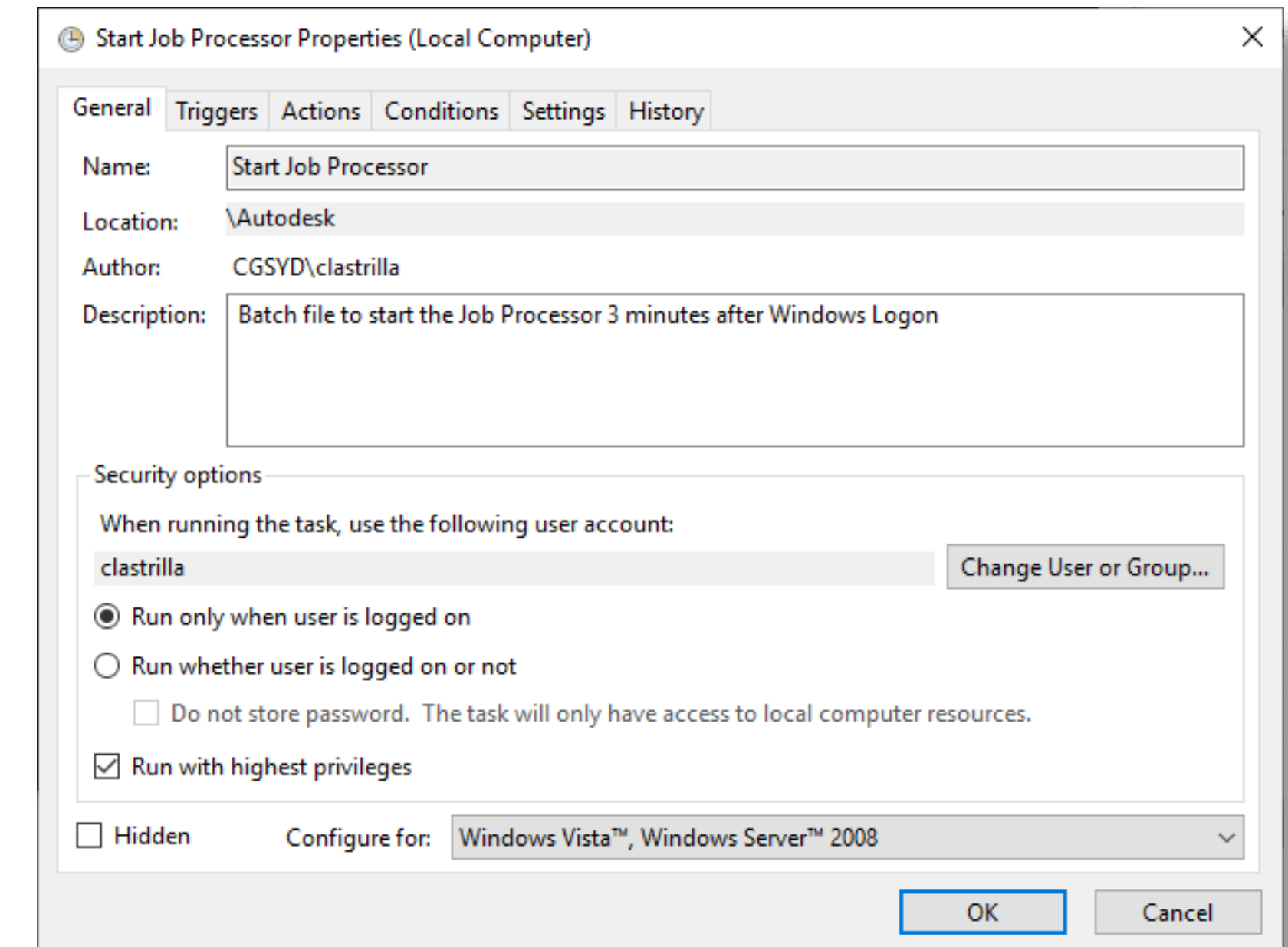
```
<!--Inventor PDF file format-->  
  <add key="DesignRepresentation.Naming" value="\.(DWG) $/&lt;_name_&gt;-  
&lt;Description&gt;" />
```

Starting the Job Processor automatically

- The Job Processor needs to run after the Autodesk Desktop Connector has been initialized.
- This can be achieved by using a batch file and Windows Task Scheduler to run the Job Processor, after a certain delay.
- Create the **Start_JobProcessor.bat** batch file.
- Use Windows Task Scheduler to run the batch file on Log on



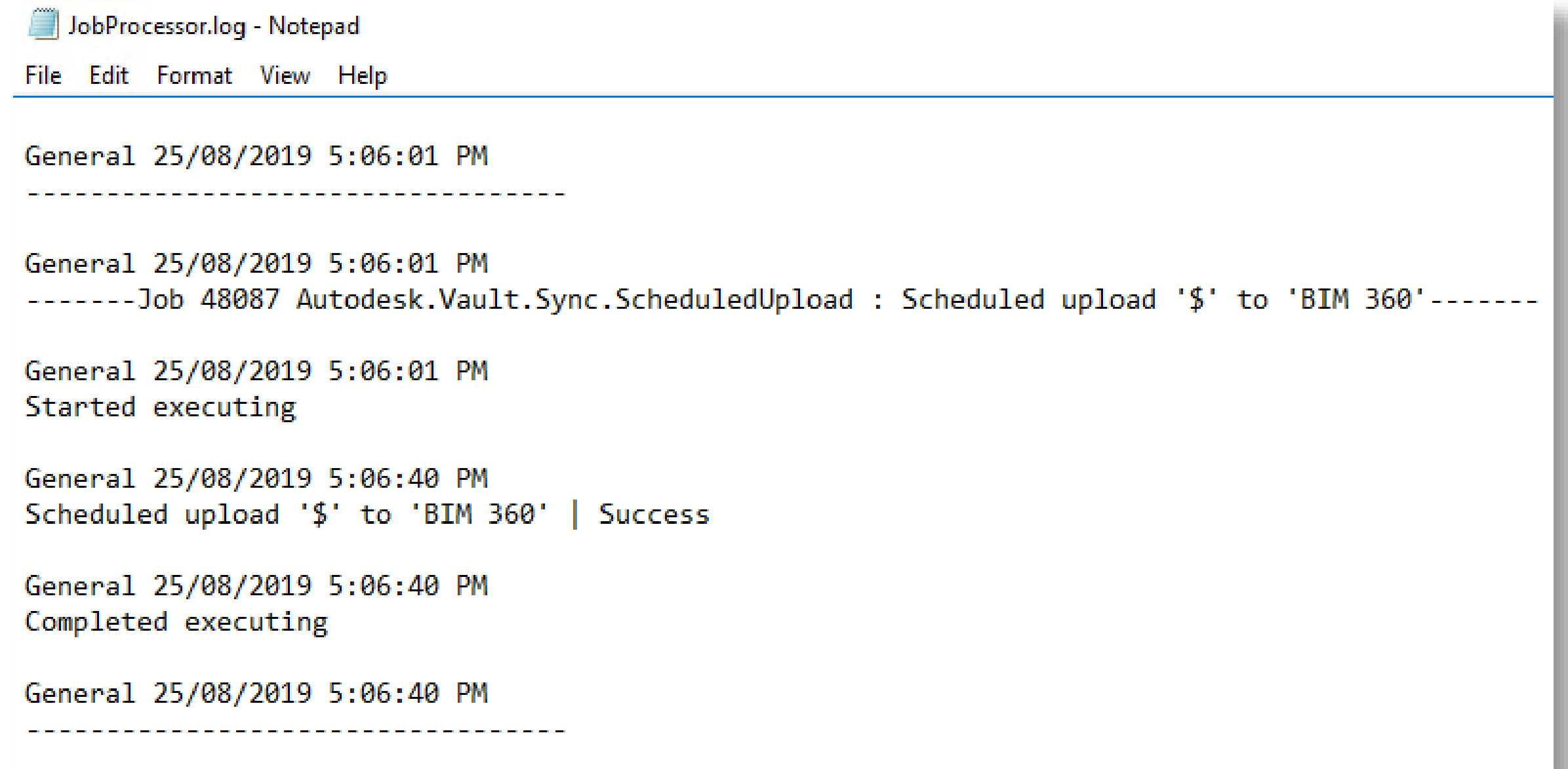
```
1 TIMEOUT /T 180
2 cd "C:\Program Files\Autodesk\Vault Professional 2020\Explorer"
3 start JobProcessor.exe
```



The Job Processor log files

- **JobProcessor.log** shows the jobs which the Job Processor has run.
- This file is in:

C:\Program Files\Autodesk\Vault Professional 2020\Explorer



```
JobProcessor.log - Notepad
File Edit Format View Help

General 25/08/2019 5:06:01 PM
-----

General 25/08/2019 5:06:01 PM
-----Job 48087 Autodesk.Vault.Sync.ScheduledUpload : Scheduled upload '$' to 'BIM 360'-----

General 25/08/2019 5:06:01 PM
Started executing

General 25/08/2019 5:06:40 PM
Scheduled upload '$' to 'BIM 360' | Success

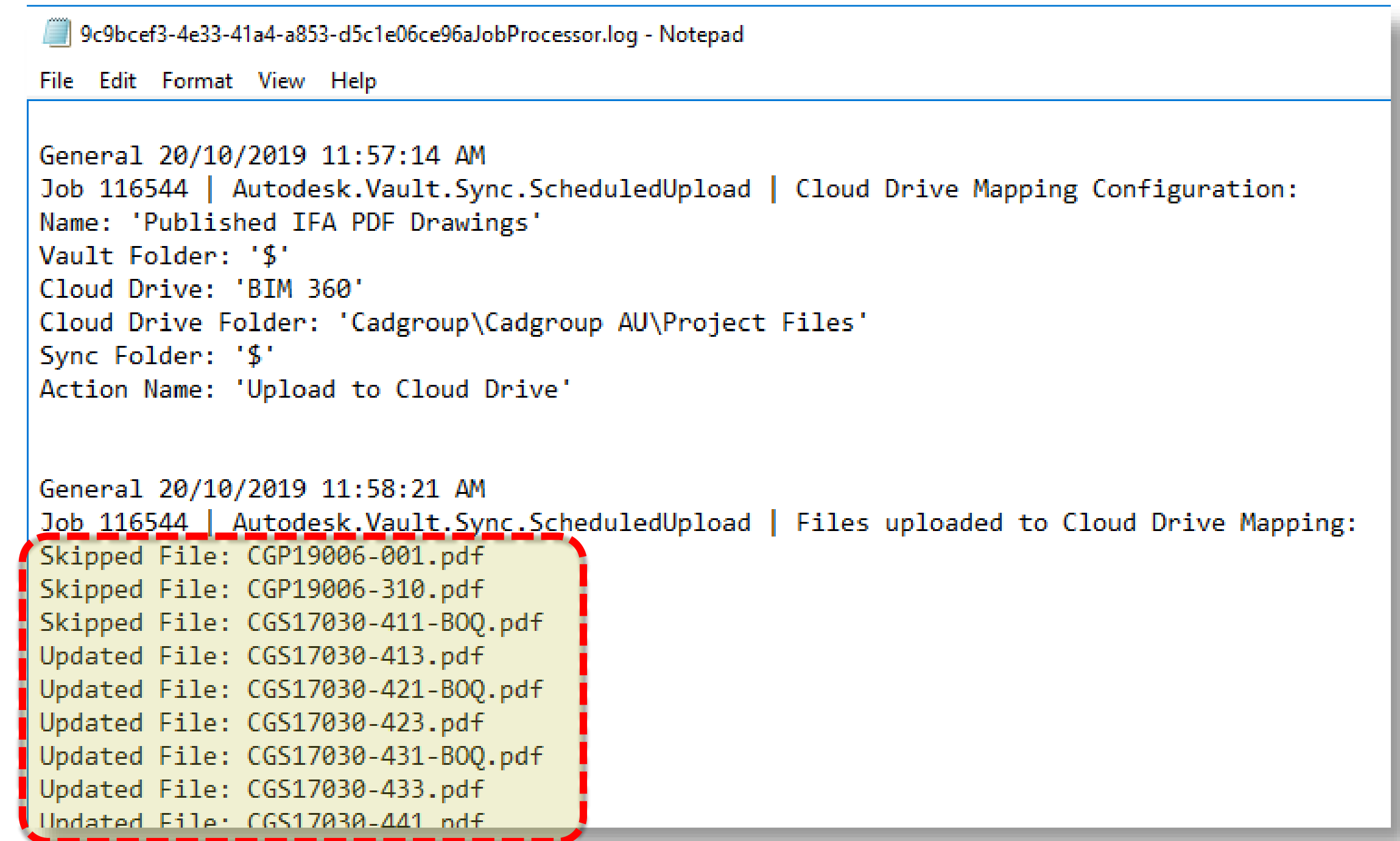
General 25/08/2019 5:06:40 PM
Completed executing

General 25/08/2019 5:06:40 PM
-----
```


The Job Processor log files

- **[GUID]JobProcessor.log** shows a list of files that have been processed by the Job Processor Project Sync jobs.
- This file is in:

C:\Program Files\Autodesk\Vault Professional 2020\Explorer



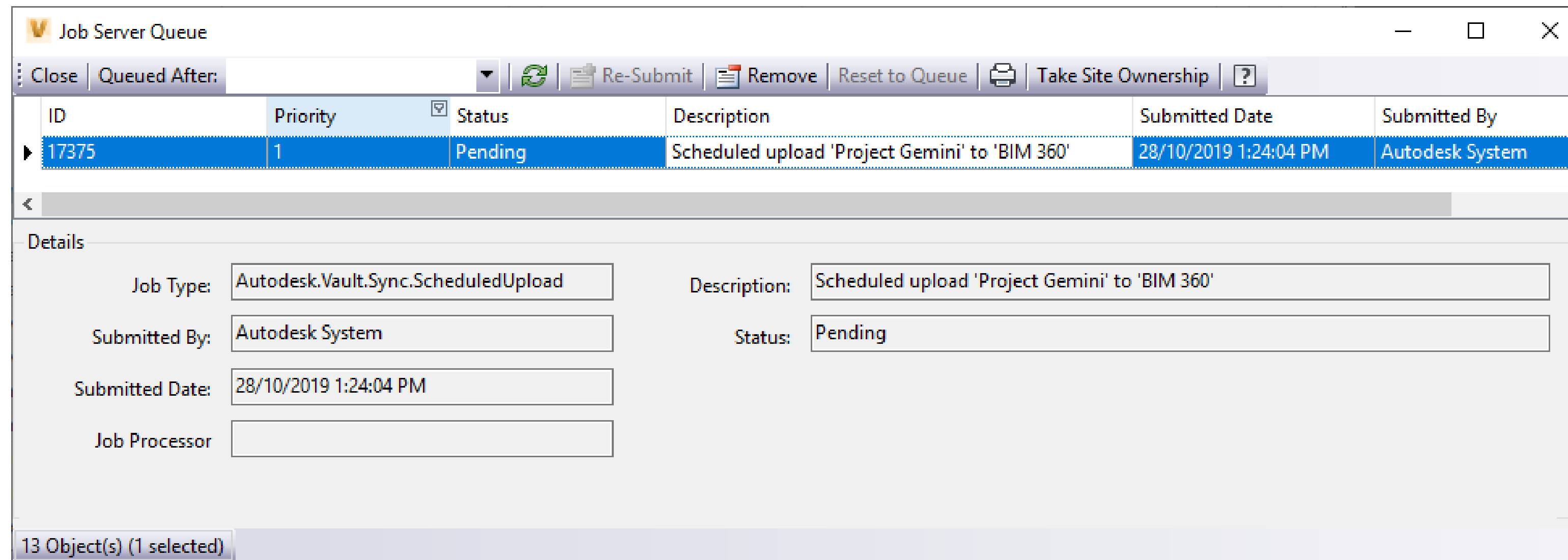
```
9c9bcef3-4e33-41a4-a853-d5c1e06ce96aJobProcessor.log - Notepad
File Edit Format View Help

General 20/10/2019 11:57:14 AM
Job 116544 | Autodesk.Vault.Sync.ScheduledUpload | Cloud Drive Mapping Configuration:
Name: 'Published IFA PDF Drawings'
Vault Folder: '$'
Cloud Drive: 'BIM 360'
Cloud Drive Folder: 'Cadgroup\Cadgroup AU\Project Files'
Sync Folder: '$'
Action Name: 'Upload to Cloud Drive'

General 20/10/2019 11:58:21 AM
Job 116544 | Autodesk.Vault.Sync.ScheduledUpload | Files uploaded to Cloud Drive Mapping:
Skipped File: CGP19006-001.pdf
Skipped File: CGP19006-310.pdf
Skipped File: CGS17030-411-BOQ.pdf
Updated File: CGS17030-413.pdf
Updated File: CGS17030-421-BOQ.pdf
Updated File: CGS17030-423.pdf
Updated File: CGS17030-431-BOQ.pdf
Updated File: CGS17030-433.pdf
Updated File: CGS17030-441.pdf
```

Viewing the Job Queue

- The Job Queue tells you which jobs are pending processing, which are being processed, and any jobs that have errors.
- In the Vault Client, go to Tools → Job Queue.

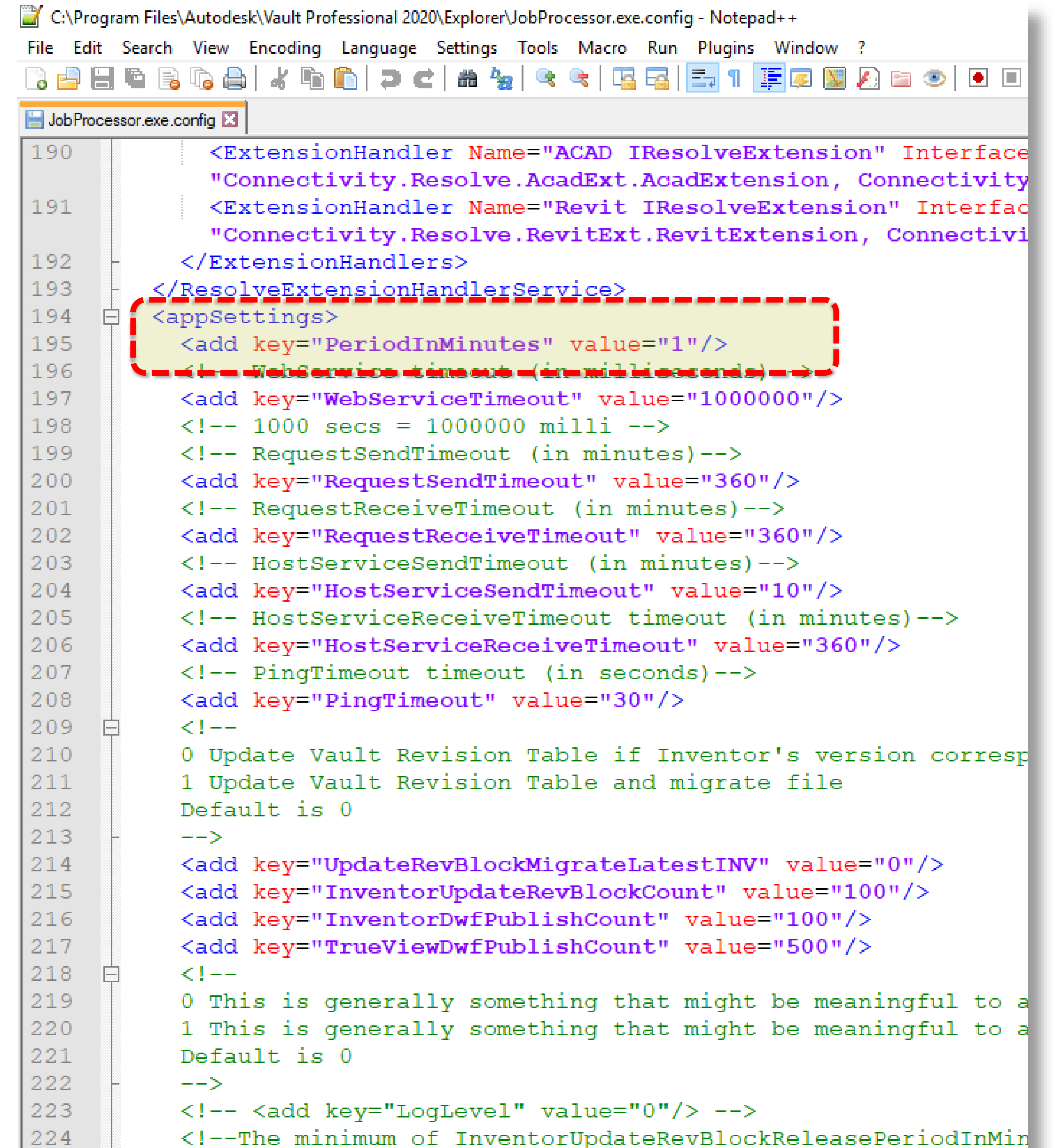


Job Processor Polling Intervals

- By default, the Job Processor polls for jobs to do every 10 minutes.
- This can be changed to a smaller interval by modifying the **JobProcessor.exe.config** file located in:

C:\Program Files\Autodesk\Vault Professional 2020\Explorer

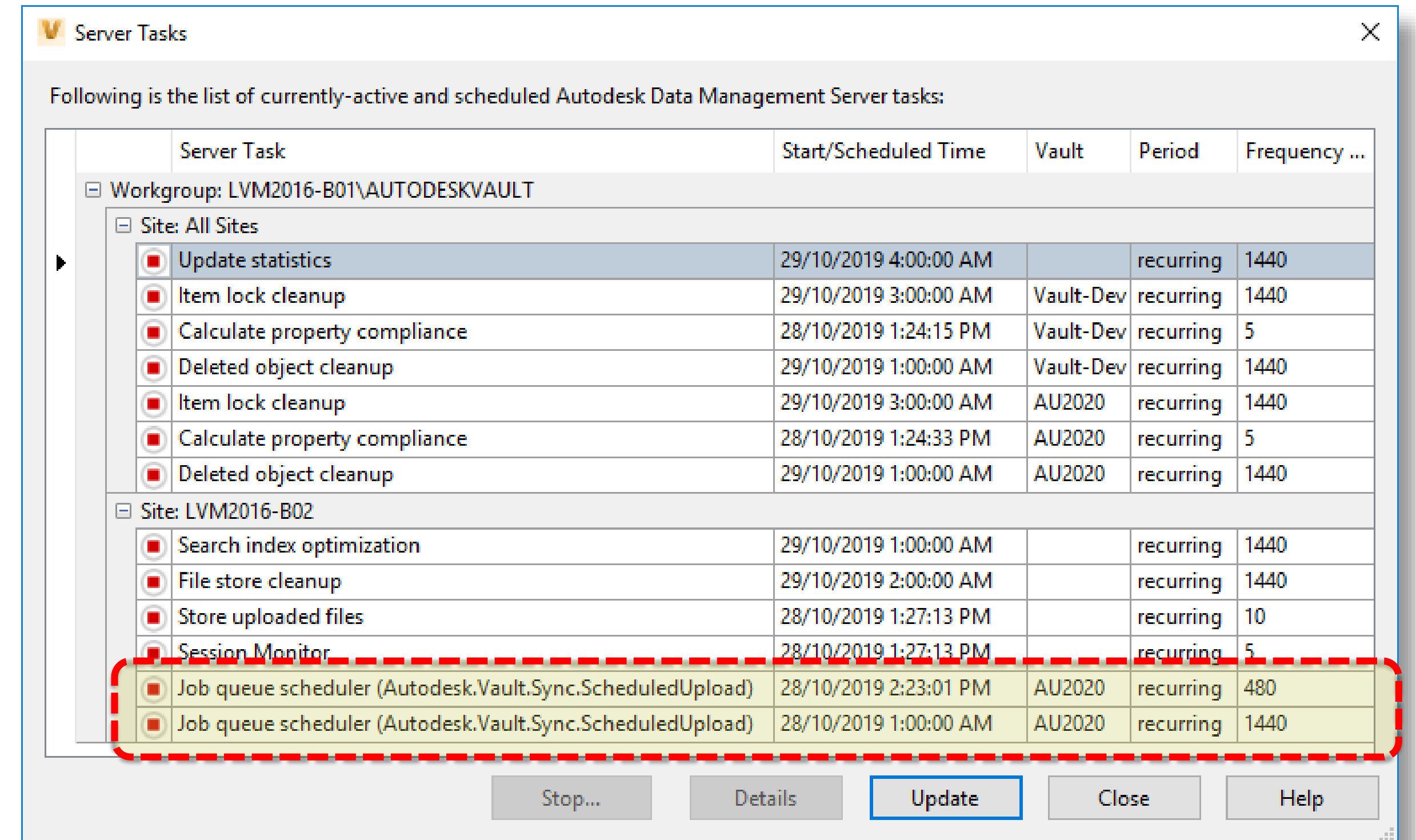
- Modify the value of **PeriodInMinutes**
- Decimal values are acceptable.
- Restart the Job Processor after making these changes.
- Remember to take a backup of the file first!



```
C:\Program Files\Autodesk\Vault Professional 2020\Explorer\JobProcessor.exe.config - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
JobProcessor.exe.config
190      <ExtensionHandler Name="ACAD IResolveExtension" Interface
191      "Connectivity.Resolve.AcadExt.AcadExtension, Connectivity
192      <ExtensionHandler Name="Revit IResolveExtension" Interfac
193      "Connectivity.Resolve.RevitExt.RevitExtension, Connectivi
194      </ExtensionHandlers>
195      </ResolveExtensionHandlerService>
196      <appSettings>
197      <add key="PeriodInMinutes" value="1"/>
198      <!-- WebService timeout (in milliseconds) -->
199      <add key="WebServiceTimeout" value="1000000"/>
200      <!-- 1000 secs = 1000000 milli -->
201      <!-- RequestSendTimeout (in minutes)-->
202      <add key="RequestSendTimeout" value="360"/>
203      <!-- RequestReceiveTimeout (in minutes)-->
204      <add key="RequestReceiveTimeout" value="360"/>
205      <!-- HostServiceSendTimeout (in minutes)-->
206      <add key="HostServiceSendTimeout" value="10"/>
207      <!-- HostServiceReceiveTimeout timeout (in minutes)-->
208      <add key="HostServiceReceiveTimeout" value="360"/>
209      <!-- PingTimeout timeout (in seconds)-->
210      <add key="PingTimeout" value="30"/>
211      <!--
212      0 Update Vault Revision Table if Inventor's version correspo
213      1 Update Vault Revision Table and migrate file
214      Default is 0
215      -->
216      <add key="UpdateRevBlockMigrateLatestINV" value="0"/>
217      <add key="InventorUpdateRevBlockCount" value="100"/>
218      <add key="InventorDwfPublishCount" value="100"/>
219      <add key="TrueViewDwfPublishCount" value="500"/>
220      <!--
221      0 This is generally something that might be meaningful to a
222      1 This is generally something that might be meaningful to a
223      Default is 0
224      -->
225      <!-- <add key="LogLevel" value="0"/> -->
226      <!--The minimum of InventorUpdateRevBlockReleasePeriodInMin
```

Viewing Server Tasks

- For every Project Sync job, a Server Task is created to submit that job to the Job Queue.
- In ADMS Console, go to Tools → Server Tasks.



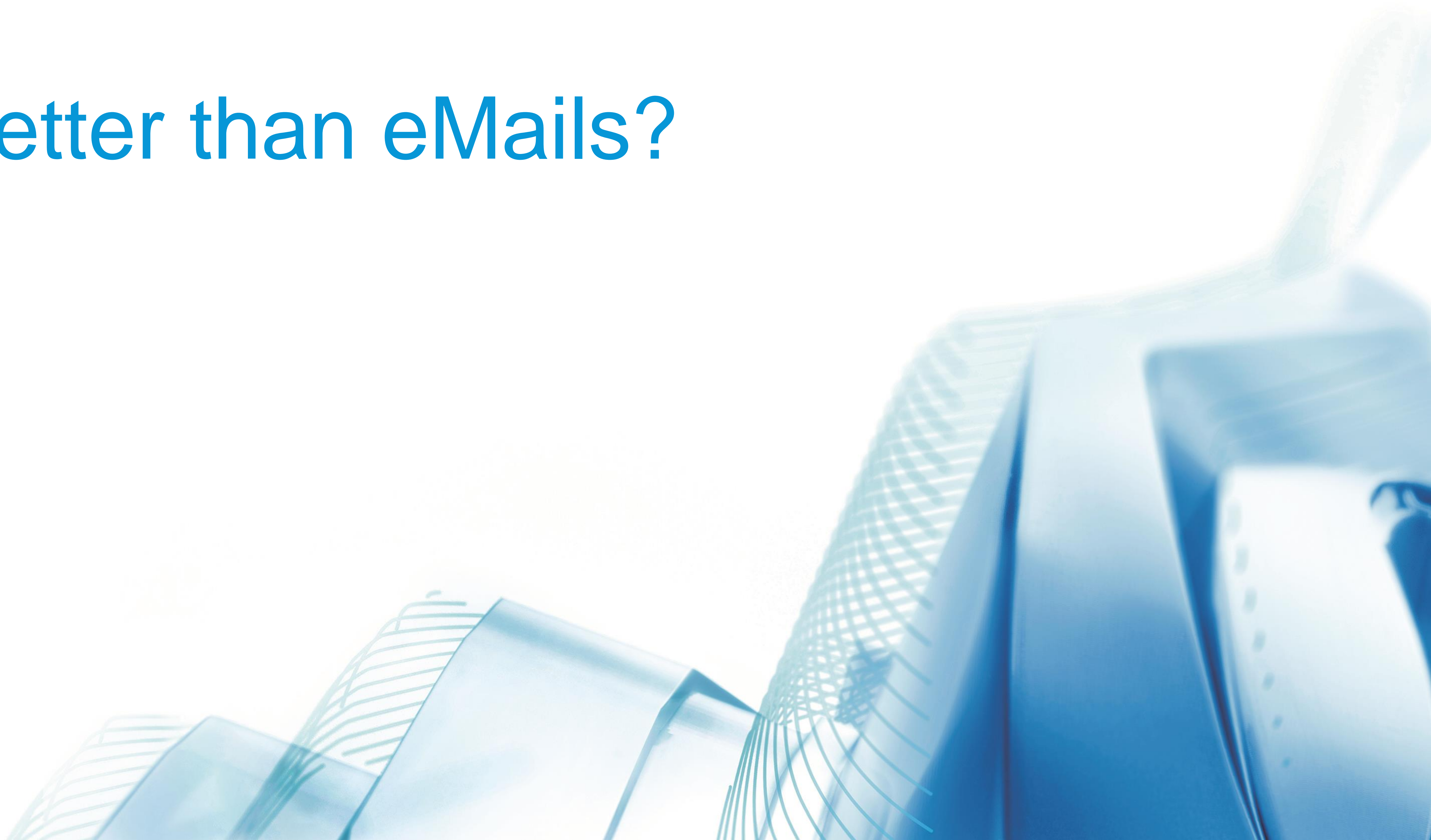
Server Tasks

Following is the list of currently-active and scheduled Autodesk Data Management Server tasks:

Server Task	Start/Scheduled Time	Vault	Period	Frequency ...
Workgroup: LVM2016-B01\AUTODESKVAULT				
Site: All Sites				
Update statistics	29/10/2019 4:00:00 AM		recurring	1440
Item lock cleanup	29/10/2019 3:00:00 AM	Vault-Dev	recurring	1440
Calculate property compliance	28/10/2019 1:24:15 PM	Vault-Dev	recurring	5
Deleted object cleanup	29/10/2019 1:00:00 AM	Vault-Dev	recurring	1440
Item lock cleanup	29/10/2019 3:00:00 AM	AU2020	recurring	1440
Calculate property compliance	28/10/2019 1:24:33 PM	AU2020	recurring	5
Deleted object cleanup	29/10/2019 1:00:00 AM	AU2020	recurring	1440
Site: LVM2016-B02				
Search index optimization	29/10/2019 1:00:00 AM		recurring	1440
File store cleanup	29/10/2019 2:00:00 AM		recurring	1440
Store uploaded files	28/10/2019 1:27:13 PM		recurring	10
Session Monitor	28/10/2019 1:27:13 PM		recurring	5
Job queue scheduler (Autodesk.Vault.Sync.ScheduledUpload)	28/10/2019 2:23:01 PM	AU2020	recurring	480
Job queue scheduler (Autodesk.Vault.Sync.ScheduledUpload)	28/10/2019 1:00:00 AM	AU2020	recurring	1440

Stop... Details Update Close Help

Better than eMails?





C

Controlled

The right person, the right access, at the right time

C

Convenient

Automated processes with minimum human intervention

C

Consolidated

Single Source of Truth

What next?

- Download the class handouts.
- Configure a test environment.
 - <https://bim360.autodesk.com/trial-signup/>

What next?

- Other classes of interest:
 - **MFG323371** - Sharing Is Caring: Sharing Vault Data Outside the Firewall (Wed 8:00AM – 9:00AM)
 - **MFG320861** - Technical Dive and Talk—Vault Professional Data Beyond Your Firewall (Wed 4:30PM – 5:30 PM)

Video Links

<https://knowledge.autodesk.com/community/collection/using-vault-professional-and-bim360-docs---publishing-drawings-to-the-outside-world>

01-Creating a Project in BIM360 Docs

02-Installing Autodesk Desktop Connector

03-Job Processor with Autodesk Desktop Connector

04-DXF and PDF files synced from Vault to BIM360 Docs

05-Configuring Use Case 1

06-Issuing files for Construction

07-Configuring Use Case 2

08-Adding Companies and Users to the Project

09-Granting Users permissions to create Issues

10-SettingUpFolderPermissionsandSubscribingtoFolders

11-Viewing Files, Adding Markups and Creating Issues



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