

AS500092

How to automate repetitive tasks on BIM 360 to improve cloud collaboration

Juan Tena Florez

[KEO International Consultants](#)

Learning Objectives

- Identify the different options available to automate tasks and integrate with other tools and BIM 360
- Automate tedious tasks that are currently done manually and save time
- Integrate other tools and platforms with BIM 360 to improve collaboration, communication and coordination
- Apply better techniques to improve the migration of On-Premises files to BIM 360

Description

BIM 360 or the new ACC is created to connect our teams and data in real-time, empowering project members to anticipate, optimize, and manage all aspects of project performance in a cloud based platform, and in order to provide even more flexibility and capabilities it is built on top of Forge, which can assist anyone to customize or automate certain tasks that are not built in the platform by default.

In this class, we will be demonstrating different tools and workflows to automate some of the most tedious and repetitive tasks that are currently completed manually or how to integrate it with other platforms such as Microsoft Outlook, OneDrive, SharePoint, Dropbox or with files on premises, as many other options.

Speaker

Senior Digital Design Manager M.Arch with 16+ years of professional experience 7+ years in Middle East, with extensive experience in BIM implementation, strategic planning, standardization of processes in line with ISO 19650 standards and parametric-digital design delivery Revit, Dynamo, Navisworks, Rhino and 3DS Max.

Always up to date and researching about other digital design technologies like VR, AR, MR, AI, ML, 3D printing, drones, point cloud, generative design, automation, digital twins, etc.

Extensive knowledge and experience working with ISO 19650 leading KEO International Consultants to achieve the BSI Kitemark Certificate and US AIA and LOD Forum BIM standards. Also previously with the UK BIM Level 2, BS 1192 and PAS 1192-2, which are now withdrawn and superseded by BS EN ISO 19650.

AUTODESK UNIVERSITY

Experience delivering projects for private and public sector clients, airports, industrial buildings, offices, retail/commercial, educational, hospitality/housing, sports facilities and government facilities.

Development of master plans, Architecture and interior design projects from conceptual design through final construction documents.

Knowledge of mechanical, electrical, plumbing, fire protection, landscape, infrastructure and structural systems for coordination and implementation using mainly Revit, Civil 3D and Navisworks.

Integration of planning, sustainability, specifications, QS and FM into BIM process and technologies.

Also providing leadership as well as self-motivated, with a high integration capacity in teamwork, collaborative and multicultural environment, where communication is important.

Autodesk certified professional in Revit, Autocad and 3D Studio Max.

Speaker at key Middle East and Asia BIM conferences, seminars and webinars.

<https://www.linkedin.com/in/juan-tena/>

KEO is a highly integrated and agile AEP/PMCM firm, ranked by ENR in the Top 225 International Design Firms; in the Top 20 International PM/CM Firms; and by World Architecture as 50th largest global architecture firm and #1 Firm in the Middle East Region in their 2021 WAS 100 Survey.

KEO is a creative enterprise, where innovation is a way of life. We are uniquely resourced with end-to-end services to take clients from inspiration, through conceptualization to realization of planning, design or project delivery in the built and natural environments. For over 57 years we've led with vision, contributing to many of the world's most ambitious projects and iconic places in the Middle East.

KEO is continually pursuing innovations that will crystallize the client's vision by promoting design excellence, high standards, and delivery quality and using experience and expertise to resolve complexity and realize opportunity. BIM is our standard way of delivering projects and it is used for most of what we do. It plays a powerful role in unifying and aligning our processes, standards and procedures, and our ISO 19650 kitemark certificate by BSI demonstrate evidence of it.

KEO provides BIM Advisory services (<https://www.keoic.com/bim-innovation-advisory-services>) and is an Autodesk Service Select Provider listed in the Services Marketplace (<https://servicesmarketplace.autodesk.com/provider/public/keo-international-consultants#services>). Please get in touch with us for more information.

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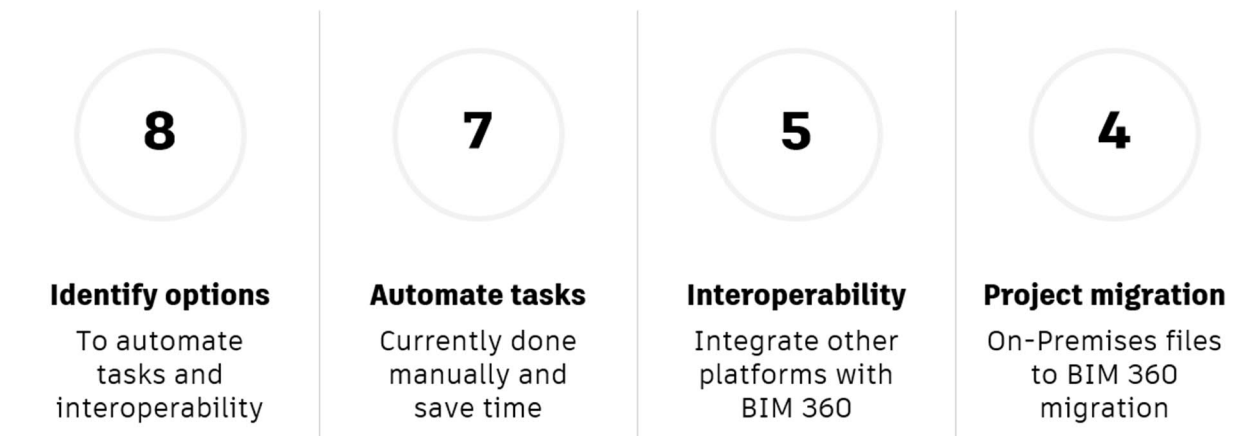
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Introduction

This class will explain and summarize the below items for each of the 4 learning objectives defined in this class and how much time savings and cost we have saved by automating tasks and improved interoperability information exchange. Please note that this class is an independent review not being sponsored by any of the mentioned software vendors.



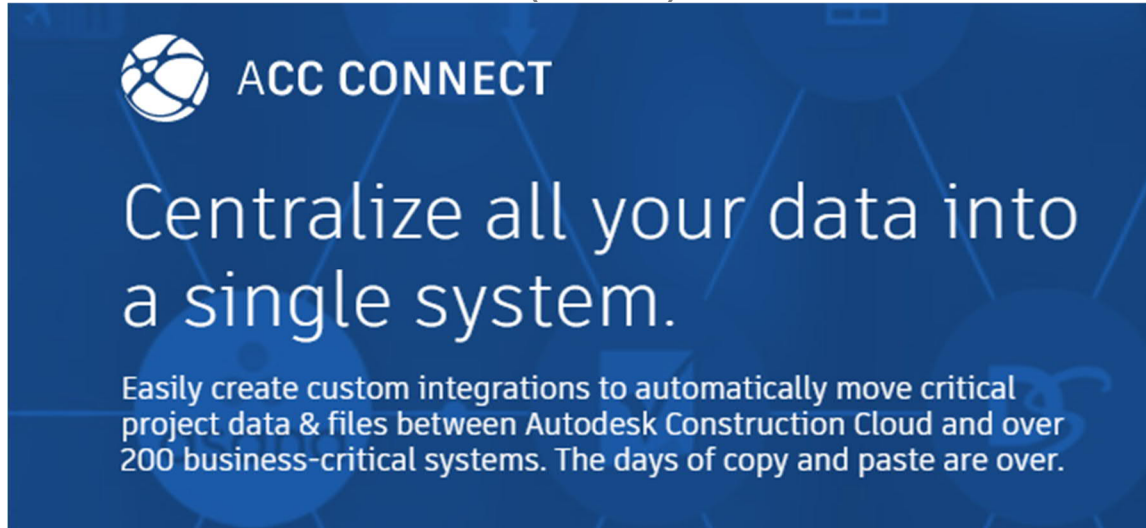
Identify the different options available to automate tasks and integrate with other tools and BIM 360

As current BIM 360 (or Autodesk Construction Cloud) users, we know and have experienced the benefits of implementing a cloud document management platform to ensure better collaboration and communication between all the stakeholders involved in any project, during Design and/or Construction. In the first part of this presentation, I will explain some of the current available options to automate some tasks which are repetitive and that manually could take longer and which may lead into errors as well. I will also explain a common challenge in most companies of how to automate the integration of BIM 360 with other platforms or on premises files for information exchange or communication with other tools.

Tasks Automation and Tools Integration

In order to achieve either any task automation or an integration with other tools, we have the choice to do it internally using APIs and programming tools or we can search for other software developers who have already invested their time and efforts in creating something similar to our objectives. I will now list the different options we are currently using or are available to achieve it. Please note that not all options available are listed, but the ones we have used or tested and we can recommend. It is always important when doing any implementation is that you analyze your company goals and objectives, and then you select accordingly to suit your needs.

Connect for Autodesk® BIM 360® (Workato)

A blue banner with the ACC CONNECT logo (a globe icon) and the text "ACC CONNECT". Below the logo, the text "Centralize all your data into a single system." is displayed in large white font. Underneath, in smaller white font, it says "Easily create custom integrations to automatically move critical project data & files between Autodesk Construction Cloud and over 200 business-critical systems. The days of copy and paste are over." The background features a network diagram with nodes and connecting lines.

ACC CONNECT

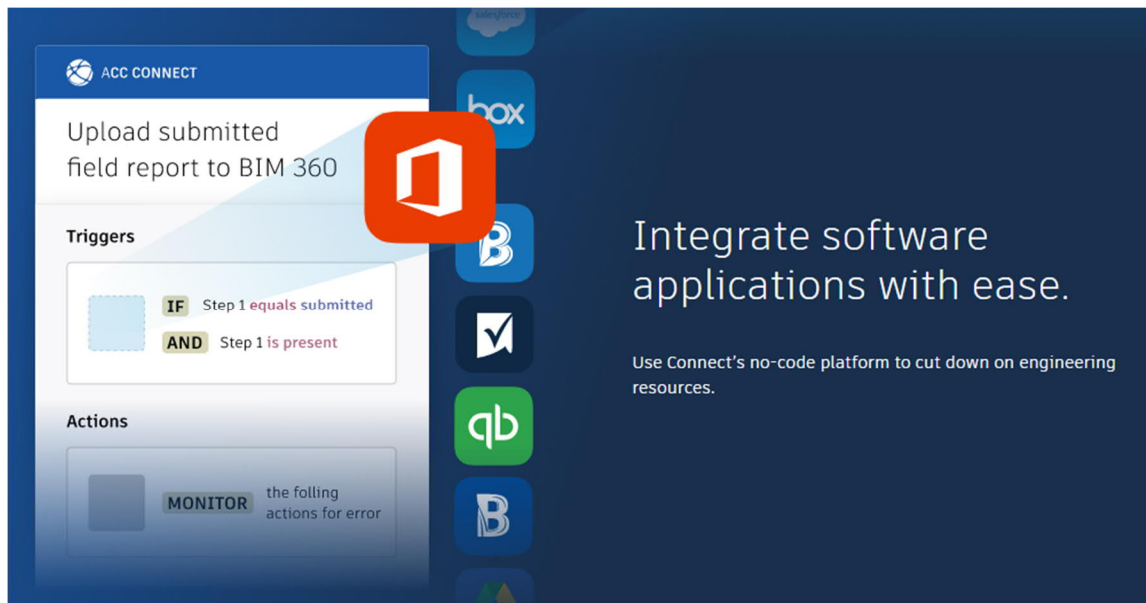
Centralize all your data into a single system.

Easily create custom integrations to automatically move critical project data & files between Autodesk Construction Cloud and over 200 business-critical systems. The days of copy and paste are over.

<https://apps.autodesk.com/BIM360/en/Detail/Index?id=7330054718304792786&appLang=en&os=Web>

A connected experience across all of your applications. Give real-time access to critical data in plans, progress photos and reports to anyone who needs it, no matter which application they use.

With a library that allows you to build integrations between 200+ applications in one place, connecting your most important applications has never been easier.

A screenshot of the ACC CONNECT interface. On the left, a configuration window shows a workflow: "Upload submitted field report to BIM 360". Under "Triggers", it lists "IF Step 1 equals submitted" and "AND Step 1 is present". Under "Actions", it lists "MONITOR the following actions for error". To the right of this window is a vertical stack of application icons including Box, Microsoft Teams, and others. On the far right, a dark blue panel contains the text "Integrate software applications with ease." and "Use Connect's no-code platform to cut down on engineering resources." The Autodesk logo is prominently displayed in the center.

ACC CONNECT

Upload submitted field report to BIM 360

Triggers

- IF Step 1 equals submitted
- AND Step 1 is present

Actions

- MONITOR the following actions for error

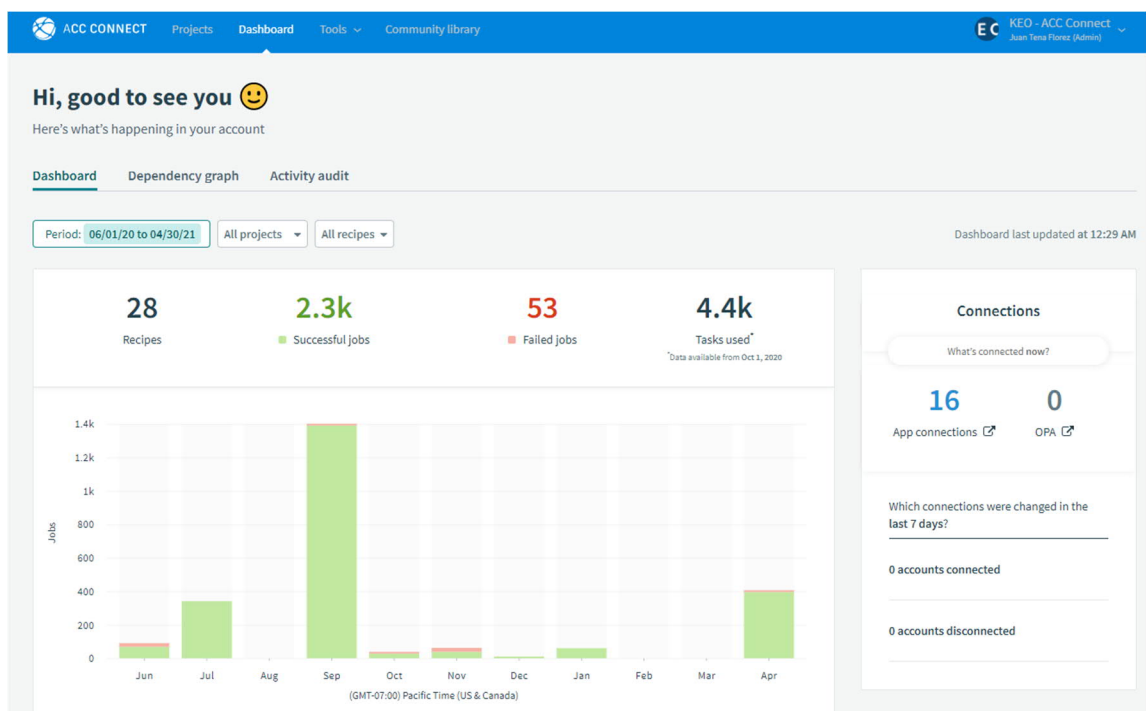
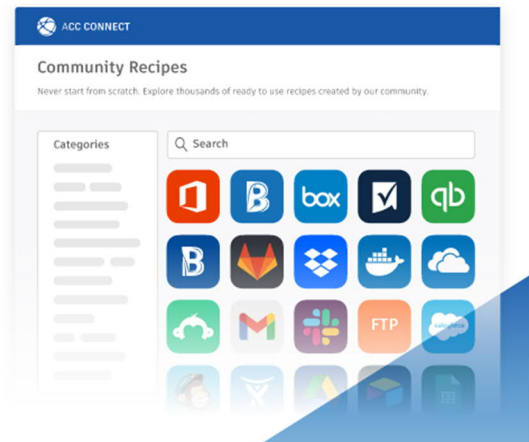
Integrate software applications with ease.

Use Connect's no-code platform to cut down on engineering resources.

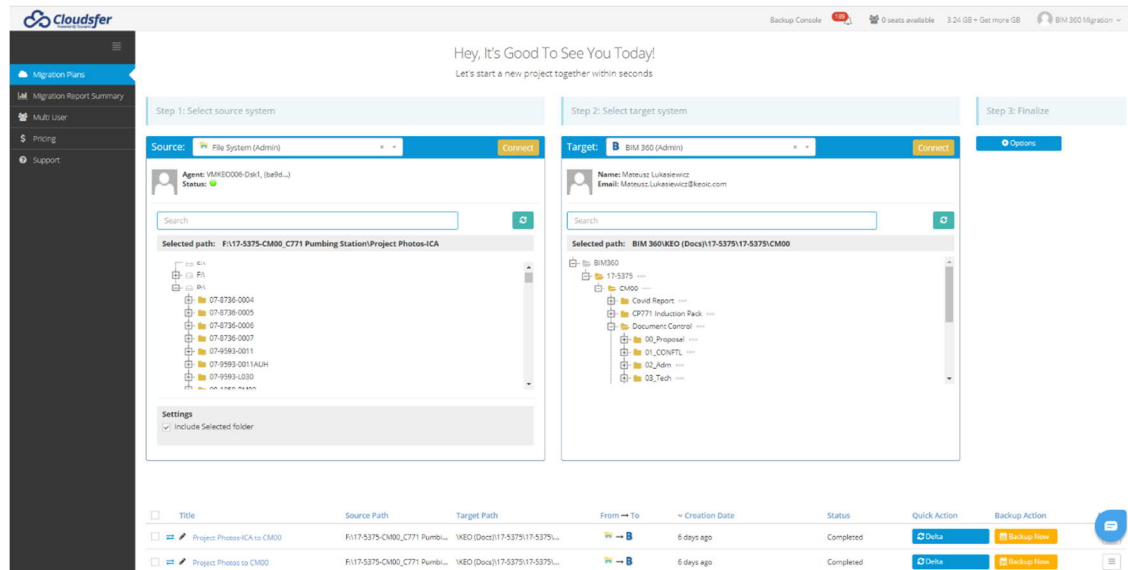
AUTODESK UNIVERSITY

Make integrations work for you.

Tailor integrations to fit your exact needs and easily update them as your business scales.



Cloudsfer



<https://apps.autodesk.com/BIM360/en/Detail/Index?id=904446165577977781&appLang=en&os=Web>

Cloudsfer is a cloud-based migration service, supporting over 20 cloud storage providers such as Autodesk® BIM 360® & Autodesk® Build, Procore, Google Drive, Dropbox, Box, OneDrive, Office 365, Aliyun, Azure, Google Photos, Egnyte, Amazon S3, Amazon Cloud Drive, S3 Compatible Storage and many more.

Migrate and backup your data from/to BIM 360 & Autodesk Build. Cloudsfer is designed to seamlessly migrate and backup data. The cloud to cloud migration solution requires no installation, no hardware, and no bandwidth during the migration process.

On Premise to cloud migration solution: Cloudsfer is offering migration from your File System and from over 12 different ECM On-premise systems (FileNet, eRoom, Documentum, OpenText LiveLink, DocuShare, eDocs, HP trim, Lotus Notes and many more systems) to BIM 360 & Autodesk Build. Cloudsfer has also supported migration from SharePoint on-premise to BIM 360 & Autodesk Build.

Companies and users can migrate their data in a fast and secure manner while continuing to work on their source systems.

Highlights:

- Create multiple migrations and run all in One-Shot
- Project Archiving & Backup at the click of a button (on a daily, weekly or monthly basis)
- Recurring Delta Migration - Transfer your newest data into the target storage system at the press of a button.
- Download reports regarding every step of the migration process.
- Cloud Service - Let us handle the migration for you! Transfer your data quickly with our fully hosted SaaS environment.

Cloudsfer Backup Console 100 0 seats available 3.24 GB + Get more GB BIM 360 Migration

Migration Report Summary

[Export Data](#) [Find Executions](#)

Start Time	Title	Source	Target	Status
Tue, Aug 17, 2021 1:14 PM	Project Photos-ICA to CM00	File System	BIM 360	Completed
<p>Migration Plan: Project Photos-ICA to CM00</p> <p>Source: File System Target: BIM 360</p> <p>Source Path: F:\17-5375-CM00_C771 Pumping Station\Project Photos-ICA Target Path: \KEO (Docs)\17-5375\17-5375\CM00</p> <p>Started: Tue, Aug 17, 2021 1:14 PM Completed: Tue, Aug 17, 2021 8:05 PM</p> <p>Items Migrated: 6,357 (out of 6,357) Data Uploaded: 38.53GB</p> <p>Folders migrated: 223 (out of 223)</p> <p>Execution Id: executions\437128-DBAC</p>				
Tue, Aug 17, 2021 1:08 PM	Project Photos to CM00	File System	BIM 360	Completed
Tue, Aug 17, 2021 1:08 PM	Project Data to CM00	File System	BIM 360	Completed
Tue, Aug 17, 2021 12:41 PM	Document Control to CM00	File System	BIM 360	Completed with errors
Sun, Aug 15, 2021 8:29 AM	CP771 Induction Pack to CM00	File System	BIM 360	Completed
Sun, Aug 15, 2021 8:29 AM	Covid Report to CM00	File System	BIM 360	Completed
Sun, Aug 15, 2021 8:23 AM	5 Communications to 5 Communications	File System	BIM 360	Completed
Wed, Aug 11, 2021 8:26 AM	4 Construction to 4 Construction	File System	BIM 360	Completed

[Download Report](#) [Download Errors Report](#)

Start Time	Title	Source	Target	Status
Tue, Aug 17, 2021 1:14 PM	Project Photos-ICA to CM00	File System	BIM 360	Completed
<p>Migration Plan: Project Photos-ICA to CM00</p> <p>Source: File System Target: BIM 360</p> <p>Source Path: F:\17-5375-CM00_C771 Pumping Station\Project Photos-ICA Target Path: \KEO (Docs)\17-5375\17-5375\CM00</p> <p>Started: Tue, Aug 17, 2021 1:14 PM Completed: Tue, Aug 17, 2021 8:05 PM</p> <p>Items Migrated: 6,357 (out of 6,357) Data Uploaded: 38.53GB</p> <p>Folders migrated: 223 (out of 223)</p> <p>Execution Id: executions\437128-DBAC</p>				

[Download Report](#) [Download Errors Report](#)

Advanced

Advanced Options - Handle file and folder conflicts

☐ If a file or folder already exists:

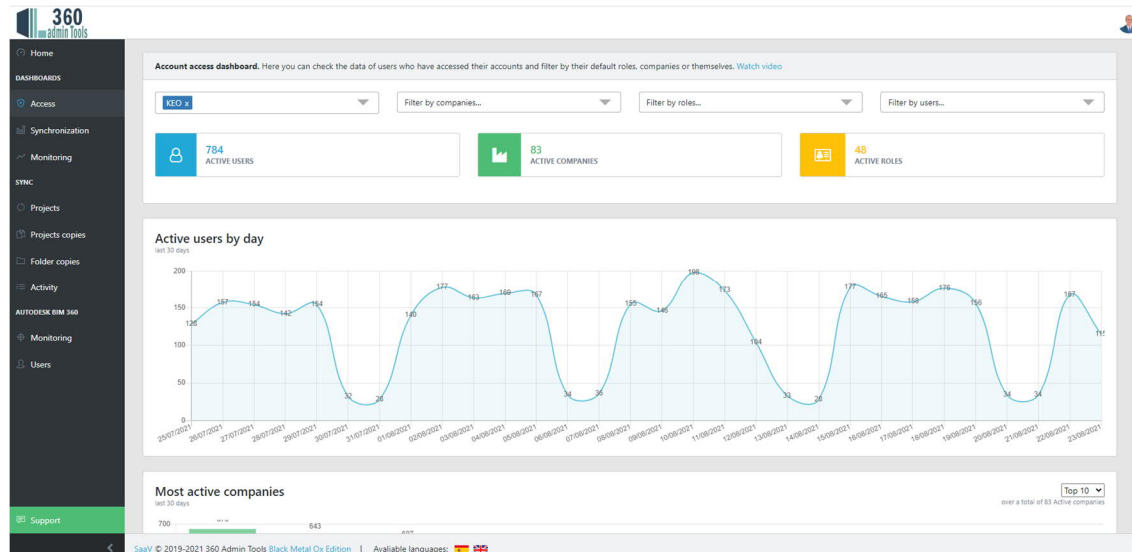
- ☒ Skip existing files
- ☐ Add suffix to existing files
- ☐ Overwrite existing files

Please note:

During the Migration process - if a conflict for a specific file/folder occurs, we will add the new file/folder with a suffix.

[Reset to default](#) [Cancel](#) [Save](#)

360 Admin Tools



<https://apps.autodesk.com/BIM360/en/Detail/Index?id=4352189844526680872&appLang=en&os=Web>

360AdminTools is a cloud-based tool that facilitates administration, migration, transformation and real-time information tasks for all your Autodesk® BIM 360® accounts and storage platforms, saving time with the automation of your CDE (Common Data Environment) management.

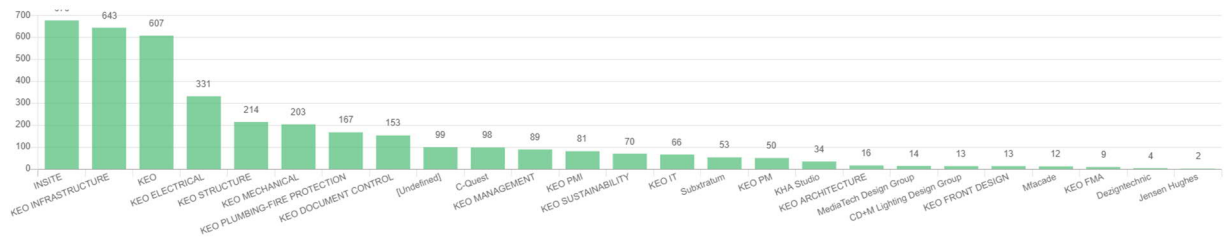
- Manages tasks of massive assignments to different projects.
- Allows you to transfer information between projects, accounts and hubs.
- Allows you to transfer or synchronize information with cloud storage platforms such as Microsoft Sharepoint, Onedrive, Amazon S3, Google Drive or Dropbox.
- Allows you to schedule your synchronizations in plans according to your needs.
- Issues transfer and scheduled plans reports
- Integrates a real time project status dashboard.

360AdminTools requires no installation of any software, it is a fully cloud based tool. It allows you to use your BIM 360 account and you will immediately access the features at no cost.

Most active companies

last 30 days

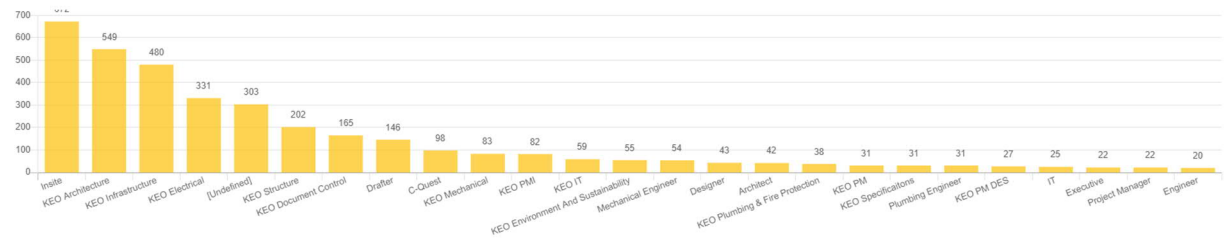
Top 25
over a total of 83 Active companies



Most active roles

last 30 days

Top 25
over a total of 48 Active roles



- Home
- DASHBOARDS
- Access
- Synchronization
- Monitoring
- SYNC
- Projects
- Projects copies
- Folder copies
- Activity
- AUTODESK BIM 360
- Monitoring
- Users
- Support

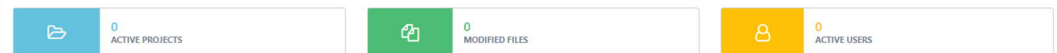
Autodesk BIM 360 access. Access indicators to the Autodesk BIM 360 account in the last 30 days.



Synchronization. Synchronization indicators in the last 30 days.



Monitoring. Indicators of the projects monitored in the last 30 days.



Transfer App



TRANSFER APP

HOW TO

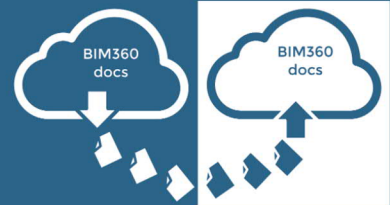
PRICING

LOGIN

Share your design files

Transfer design files between multiple Autodesk BIM360 accounts and folders. Forget about the pain of downloading and re-uploading files. A seamless way to share your design files with your collaborators.

SIGN UP



<https://apps.autodesk.com/BIM360/en/Detail/Index?id=842629660198388959&appLang=en&os=Web>

TransferApp allows you to transfer your design files between different Autodesk® BIM360® accounts, projects and folders on your BIM360 account. You no longer have to download your files locally and re-upload them on the desired destination. Now you can use TransferApp to avoid this step. Transfer app allows you to use your BIM360 login credentials to access your projects, hubs and accounts, navigate through your files and select the desired files to transfer. Select the destination location and click transfer.

TransferApp only stores the data required to manage your account on

<https://transfer.contecht.eu/>

Note: App is compatible with BIM 360 Docs and BIM 360 Team.



TRANSFER APP

HOW TO

MY ACCOUNT

HISTORY

LOGOUT

Logged in: giver

- KEO Kuwait
- Juan Tena Florez
- KEO Qatar
- KEO UAE
- TAHP
 - TAHP
 - ARCHITECTURE
 - ARCHIVE
 - CAD LINKS
 - CDI FACADE STUDY MODELS
 - IMAGE LINKS
 - EMAARDCH_LOOKOUT BRIDGE_ARC.rvt
 - EMAARDCH_PODIUM.rvt
 - EMAARDCH_SITE PLAN.rvt
 - EMAARDCH_STAIRCASES.rvt

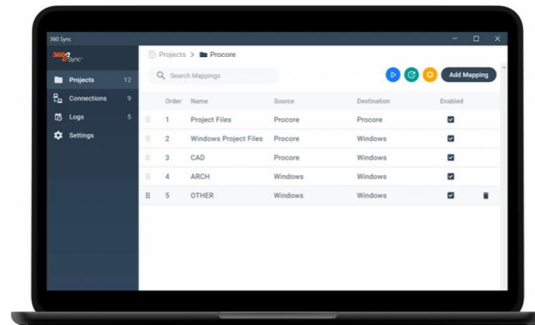
Logged in: receiver

- KEO Kuwait
- Juan Tena Florez
- KEO Qatar
- KEO UAE
- Arcadis Global
 - CRTKL-EMEUK B1 and B2 Towers - Shared
 - CRTKL-EMEUK B1 and B2 Towers - Shared
 - Architecture
 - Coordination
 - Electrical
 - ID
 - Landscape
 - Mechanical
 - Plumbing

360Sync™

Say Goodbye to File Management Woes

360 Sync™ automatically transfers, organizes and archives project files across applications.

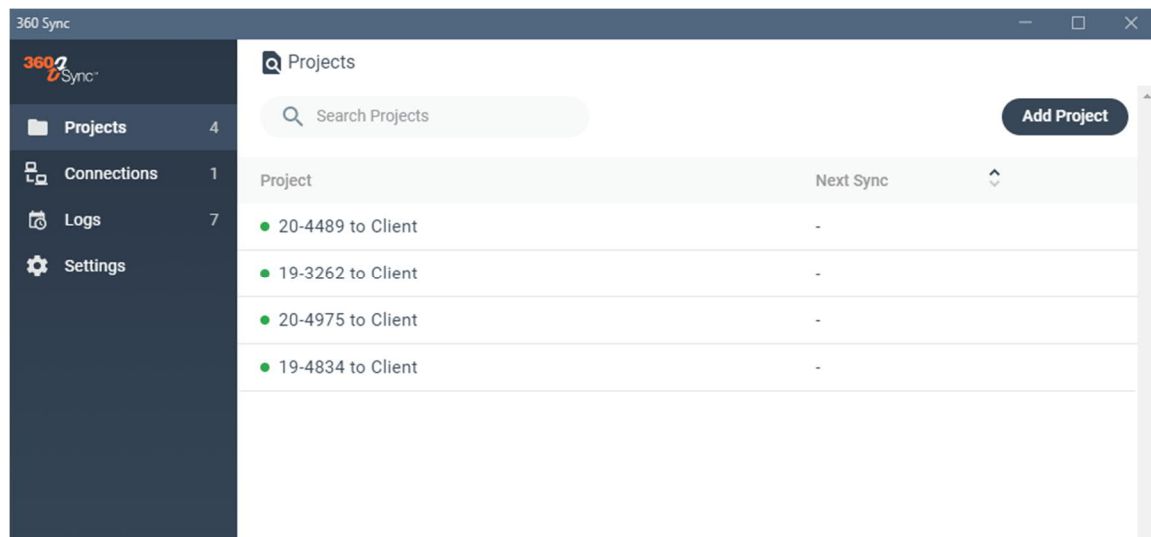


Simple. Smart. Powerful.

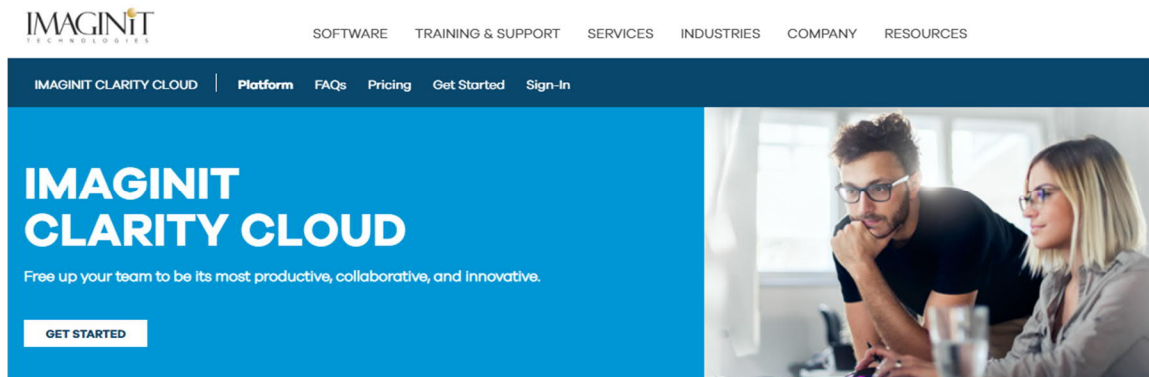
Your entire team can now share constantly updated information from multiple platforms and applications. Available through an affordable, unlimited access license, 360 Sync takes less than 30 minutes to set up and then works behind-the-scenes, so you never have to think about file management again.

<https://apps.autodesk.com/BIM360/en/Detail/Index?id=6253626418897534668&appLang=en&os=Web>

360Sync™ automatically updates your BIM 360 Libraries whenever you upload or update a file to your computer, server, or BIM 360. Save time and effort by automating the file transfer process and eliminating double data-entry. 360Sync™ is easy to setup and easy to use. We have successfully created integrations between BIM 360 and project management systems. 360Sync™ is a powerful platform for rapid custom development and deployment.



IMAGINiT Clarity Cloud



<https://www.imaginit.com/software/imaginit-utilities-other-products/clarity-cloud/platform>

IMAGINiT Clarity Cloud is a fully hosted BIM automation platform that takes care of repetitive Revit, AutoCAD and BIM 360 tasks. The platform extends your capability while saving time and energy on projects with task automation that run in the cloud with no on-premise hardware.

- Schedule tasks to run automatically
- Export views and sheets to multiple formats
- Perform eTransmit to get files ready to leave BIM360
- Publish and Move Files in BIM360

AUTOMATE REVIT TASKS

Save your team time by automating manual processes and repetitive tasks including:

- Publish Revit to BIM 360
- Coordinating Federated Files with Model Coordination
- Automatically export views and sheets to multiple formats

AUTOMATE AUTOCAD TASKS

Save your team time by automating manual processes and repetitive tasks, including:

- PDF Sets
- eTransmit

IMAGINT Clarity

PROJECTS TASKS INTEGRATIONS USERS

Current

From Date6/1/2021To Date8/23/2021

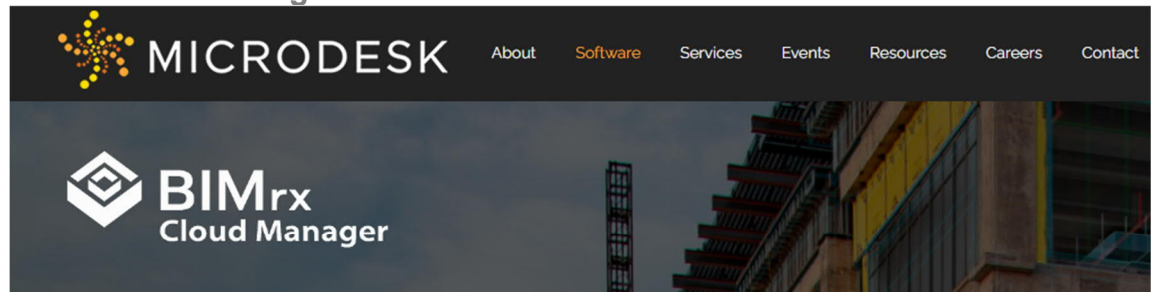
Complete

Column Chooser

Drag a column header here to group by that column

ID	Type	Project	Name	Target	Status	Created	Completed
e00p1	BIM360PUBLISH	ODC	publish all models	20-5883-01-WIP-DES-04-ARCH-ODC-KED-WH-ZZ-MED-ABC-0000.rvt	Complete	8/17/2021 11:54 AM	8/17/2021 11:55 AM
e00p2	BIM360PUBLISH	ODC	publish all models	20-5883-01-WIP-DES-04-ARCH-ODC-KED-WH-ZZ-MED-ABC-0001.rvt	Complete	8/17/2021 11:54 AM	8/17/2021 11:55 AM
e00e8	BIM360PUBLISH	ODC	publish all models	20-5883-01-WIP-IND-04-LANDSCAPE-ODC-KED-WH-ZZ-MED-PLAN-0001.rvt	Complete	8/17/2021 11:54 AM	8/17/2021 11:55 AM
1d0p0	BIM360PUBLISH	ODC	publish all models	20-5883-01-WIP-DES-06-FP-ODC-KED-WH-ZZ-MED-FRP-0001.rvt	Complete	8/17/2021 11:54 AM	8/17/2021 11:55 AM
2d0d0	BIM360PUBLISH	ODC	publish all models	20-5883-01-WIP-DES-08-ELEC-ODC-KED-WH-ZZ-MED-ELE-0001.rvt	Complete	8/17/2021 11:54 AM	8/17/2021 11:55 AM
4d0p0	BIM360PUBLISH	ODC	publish all models	20-5883-01-WIP-DES-06-PLUMB-ODC-KED-WH-ZZ-MED-PLU-0001.rvt	Complete	8/17/2021 11:54 AM	8/17/2021 11:55 AM
2p0p3	BIM360PUBLISH	ODC	publish all models	20-5883-01-WIP-DES-07-MECH-ODC-KED-WH-ZZ-MED-MEC-0001.rvt	Complete	8/17/2021 11:54 AM	8/17/2021 11:55 AM
1d0e2	BIM360PUBLISH	ODC	publish all models	20-5883-01-WIP-DES-03-STRUC-ODC-KED-WH-ZZ-MED-STR-0001.rvt	Complete	8/17/2021 11:54 AM	8/17/2021 11:55 AM
1d0e1	PUBLISHREVITMODEL	ODC	export all models	20-5883-01-WIP-DES-04-ARCH-ODC-KED-WH-ZZ-MED-ABC-0000.rvt	Complete	8/16/2021 4:59 PM	8/16/2021 5:01 PM
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4d0e4	BIM360PUBLISH	12 NC	BIM360PUBLISH	19-3262-01-WIP-04-STRUC-NHCKED-HC-ZZ-MED-ST-00009.rvt	Complete	7/27/2021 8:58 AM	7/27/2021 9:01 AM
v0d04	BIM360PUBLISH	12 NC	BIM360PUBLISH	19-3262-01-WIP-04-ARCH-NHCKED-HC-ZZ-MED-AB-00009.rvt	Complete	7/27/2021 8:58 AM	7/27/2021 9:01 AM
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r7d01	BIM360PUBLISH	12 NC	BIM360PUBLISH	19-3262-01-WIP-04-ELEC-NHCKED-AB-ZZ-MED-EL-0007A.rvt	Complete	7/27/2021 8:58 AM	7/27/2021 9:01 AM
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2m0e0	BIM360PUBLISH	12 NC	BIM360PUBLISH	19-3262-01-WIP-04-PLUMB-NHCKED-GB-ZZ-MED-FP-00013.rvt	Complete	7/27/2021 8:58 AM	7/27/2021 9:01 AM
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1d0e8	BIM360PUBLISH	12 NC	BIM360PUBLISH	19-3262-01-WIP-04-ARCH-NHCKED-SU-ZZ-MED-F3-00003.rvt	Complete	7/27/2021 8:58 AM	7/27/2021 9:01 AM
8d0e4	BIM360PUBLISH	12 NC	BIM360PUBLISH	19-3262-01-WIP-04-STRUC-NHCKED-CS-ZZ-MED-ST-00004.rvt	Complete	7/27/2021 8:58 AM	7/27/2021 9:01 AM
e0d06	BIM360PUBLISH	12 NC	BIM360PUBLISH	19-3262-01-WIP-04-STRUC-NHCKED-GB-ZZ-MED-ST-00001.rvt	Complete	7/27/2021 8:58 AM	7/27/2021 9:01 AM
5d0e0	BIM360PUBLISH	12 NC	BIM360PUBLISH	19-3262-01-WIP-04-ARCH-NHCKED-AB-ZZ-MED-F3-0007A.rvt	Complete	7/27/2021 8:58 AM	7/27/2021 9:01 AM
0d0e0	BIM360PUBLISH	12 NC	BIM360PUBLISH	19-3262-01-WIP-07-MECH-NHCKED-MO-ZZ-MED-AB-00010.rvt	Complete	7/27/2021 8:58 AM	7/27/2021 9:01 AM
0m0e0	BIM360PUBLISH	12 NC	BIM360PUBLISH	19-3262-01-WIP-04-ARCH-NHCKED-PS-ZZ-MED-F3-00009.rvt	Complete	7/27/2021 8:58 AM	7/27/2021 9:01 AM
1d0e0	BIM360PUBLISH	12 NC	BIM360PUBLISH	19-3262-01-WIP-04-STRUC-NHCKED-SU-ZZ-MED-ST-00003.rvt	Complete	7/27/2021 8:58 AM	7/27/2021 9:01 AM
1d0e1	BIM360PUBLISH	12 NC	BIM360PUBLISH	19-3262-01-WIP-04-STRUC-NHCKED-LB-ZZ-MED-ST-00011.rvt	Complete	7/27/2021 8:58 AM	7/27/2021 9:01 AM

BIMrx Cloud Manager



BIM 360 Project Management Simplified

Quickly and easily manage your BIM 360 projects.

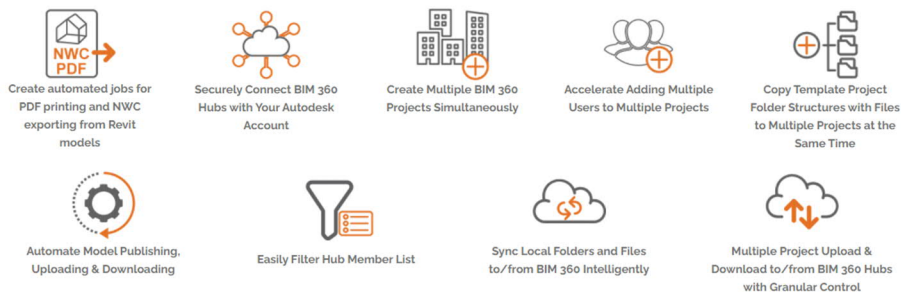
<https://apps.autodesk.com/BIM360/en/Detail/Index?id=4386611844519935792&appLang=en&os=Win64&autostart=true>

BIMrx Cloud Manager allows BIM 360 administrators to manage multiple projects simultaneously and enables project data synchronization between intranet servers and the cloud environment. BIMrx Cloud Manager saves time while managing BIM 360 and the Autodesk Construction Cloud so you can focus on high value tasks like digital transformation and sustainability.

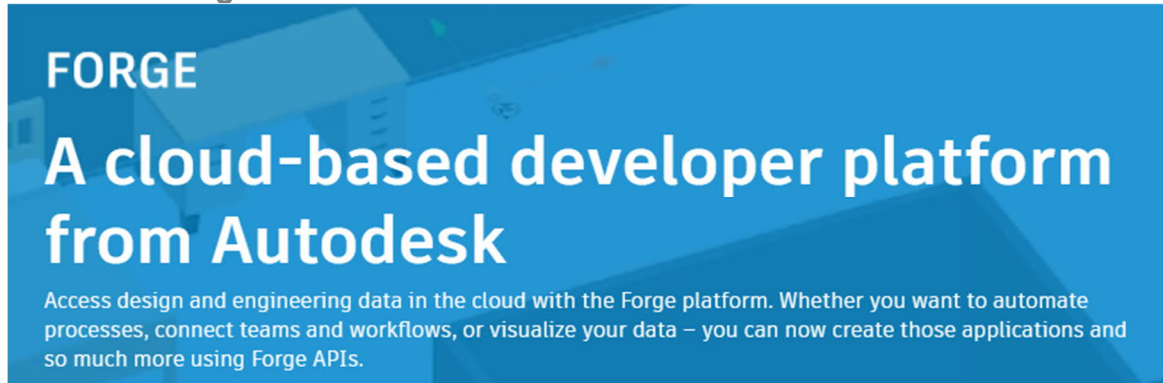
Bulk tasks for editing multiple projects simultaneously are streamlined, along with project creation, file uploads and archive snapshots or download syncs. Browsing is also available for both local and cloud-based assets. Accelerate the early phases of the BIM lifecycle by adding multiple members to multiple projects at the same time while assigning roles and associated companies.

- Add new projects to BIM 360
- Securely Connect BIM 360 Hubs with Your Autodesk Account
- Create Multiple BIM 360 Projects Simultaneously
- Accelerate Adding Multiple Users to Multiple Projects
- Copy Template Project Folder Structures+Files to Multiple Projects simultaneously
- Automate Model Publishing, Uploading & Downloading with Custom Integration
- Intelligently Sync Local Folders and Files to/from BIM 360
- Easily Filter Hub Member List
- Multiple Project Upload & Download to/from BIM 360 Hubs with Granular Control

BIMrx Cloud Manager Commands and Features



Autodesk Forge®

A blue banner with the word 'FORGE' in white. Below it, the text 'A cloud-based developer platform from Autodesk' is written in large white letters. At the bottom, a smaller line of white text reads: 'Access design and engineering data in the cloud with the Forge platform. Whether you want to automate processes, connect teams and workflows, or visualize your data – you can now create those applications and so much more using Forge APIs.'

FORGE

A cloud-based developer platform from Autodesk

Access design and engineering data in the cloud with the Forge platform. Whether you want to automate processes, connect teams and workflows, or visualize your data – you can now create those applications and so much more using Forge APIs.

<https://forge.autodesk.com/>

A cloud-based developer platform from Autodesk. Access design and engineering data in the cloud with the Forge platform. Whether you want to automate processes, connect teams and workflows, or visualize your data – you can now create those applications and so much more using Forge APIs.

Forge tools help companies build applications that tap into their design and engineering data. From automated processes to alerts. 3D in-browser to virtual reality. Forge APIs can be combined with existing software systems to innovate how you work and get more from your data.

Forge is APIs

Forge tools help companies build applications that tap into their design and engineering data. From automated processes to alerts. 3D in-browser to virtual reality. Forge APIs can be combined with existing software systems to innovate how you work and get more from your data.



Viewer

Render 3D and 2D model data within a browser. The models can come from a wide range of applications such as AutoCAD, Fusion 360, Revit, and many more.

INTRODUCTION



Autodesk Construction Cloud

Integrate with the new unified Autodesk Construction Cloud platform to create seamless construction and field management workflows with builders' critical documents and data.

VIEW DOCUMENTATION



Design Automation API

Leverage the Forge Platform to automate repetitive tasks and run scripts on your design files in the cloud.

INTRODUCTION

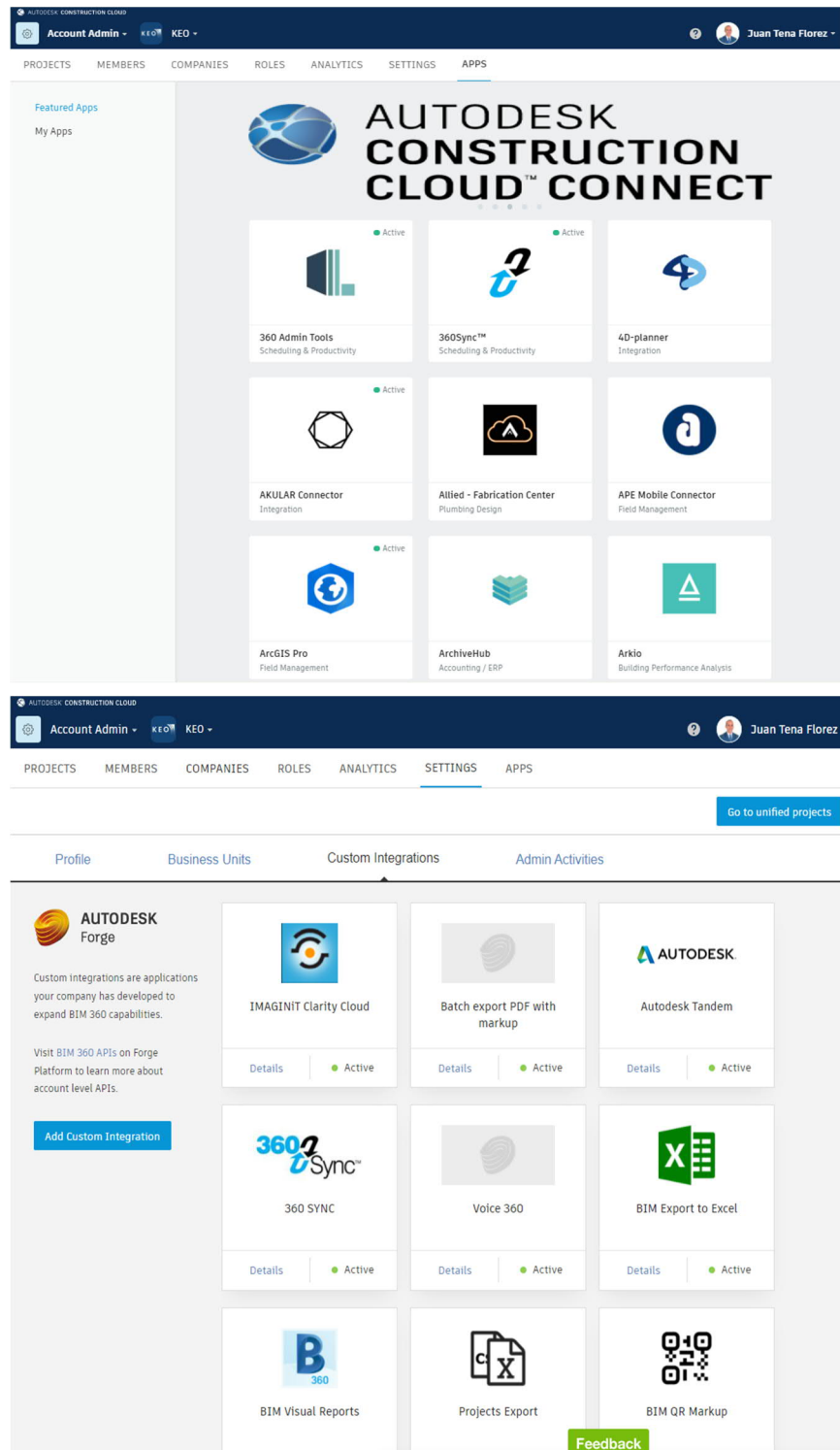


In summary, we can refer to several tools which can achieve different outcomes, but all of them with a common objective to simplify and improve the management, tasks automation and integration between platforms. Some of them are free or with certain limitations and others are based on cost per transaction or per seat.

AUTODESK UNIVERSITY

BIM 360 Admin settings

Most of the above tools need to be setup in the Account Admin portal of the Hub, in order to make sure that they can access the projects in that account.



Automate tedious tasks that are currently done manually and save time

Next, I will define a list of some tasks that we are currently automating, which are saving an average time per project of 25% compared to do them manually.

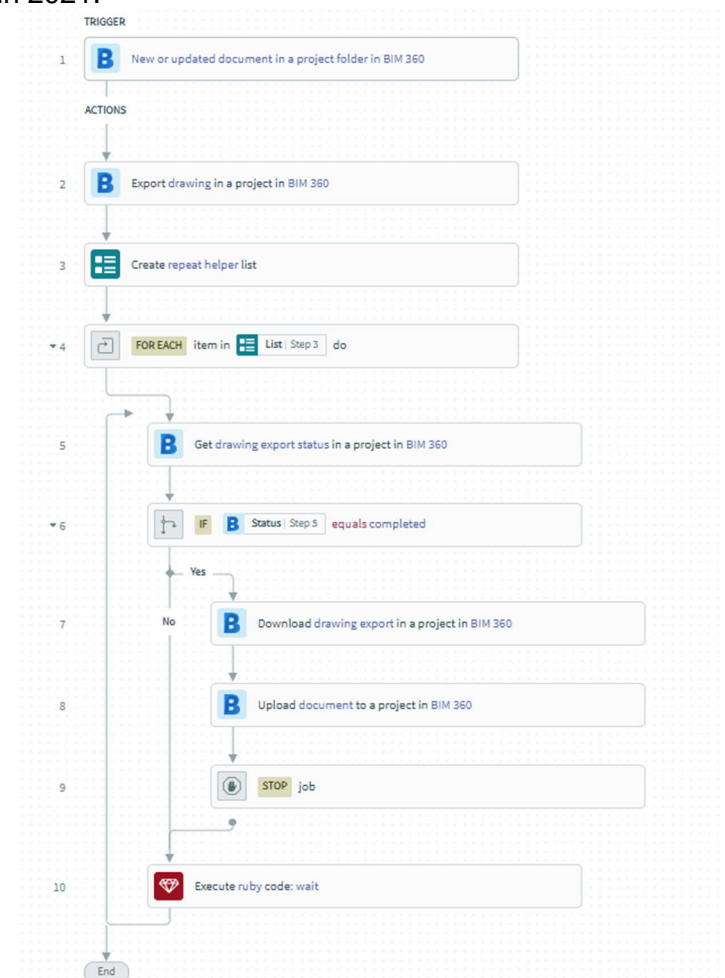
Exporting PDFs with Markups

After creating Markups in PDFs, if we would like to export the document including it, we need to select one by one and selecting the export option, becoming a tedious manual task.

Using ACC Connect, we can create a recipe which can search for all the documents in a specific folder that contains the markups, and then automatically export it, download it and upload to other folder that we select.

Doing it manually, it takes as an average of 45 seconds per file. Doing it with ACC it takes an average of 20 seconds per file, but being automatic without any attention required.

KEO developed this solution in 2020 and the team has saved 20 man hours in 2020 and 25 man hours to date in 2021.



ACC CONNECT (WORKATO) RECIPE

AUTODESK UNIVERSITY

Upload Documents to Customer Hub (live sync)

It is nowadays common to see Asset owners, Developers and/or Clients to select BIM 360 as their Common Data Environment. Therefore, its supply chain must upload their Shared or Published information to their Hub, while having their WIP information in their company's BIM 360.

In order to avoid the manual download and upload of the information from any supply chain's company Hub to the Client's Hub, we have the below 3 options to automatically sync a specific folder and subfolders, when a new document is being uploaded.

- ACC Connect
- 360 Sync
- BIMrx Cloud Manager

Please note that all the above tools needs to be added in the BIM 360 account admin of the Client's Hub as well.

KEO developed this solution in 2020 using ACC Connect.

Upload Documents to Customer Hub (one time sync)

It is nowadays common to see Asset owners, Developers and/or Clients to select BIM 360 as their Common Data Environment. Therefore, its supply chain must upload their Shared or Published information to their Hub, while having their WIP information in their company's BIM 360.

In order to avoid the manual download and upload of the information from any supply chain's company Hub to the Client's Hub, we have the below 6 options to sync a specific folder and subfolders or files, when all documents are ready to be transferred.

- ACC Connect
- 360 Sync
- BIMrx Cloud Manager
- Transfer App
- 360 Admin Tools
- Cloudsfer

Please note that all the above tools needs to be added in the BIM 360 account admin of the Client's Hub as well.

KEO's team has saved 240 man hours since 2019 using Cloudsfer and ACC Connect.

BIM 360 Revit models daily publish

Using IMAGINiT Clarity Cloud, we can automate multiple tasks by setting up as displayed on the image.

Currently, we can automatically Publish Revit models in BIM 360 Design Collaboration by each Team defined, but with a limitation of this to be completed on Weekly basis.

With IMAGINiT Clarity Cloud, we can now schedule to publish the selected models during select several days of the week as needed.

KEO's team has used this solution since mid 2021 and saved 12 man hours since then.

The screenshot displays the IMAGINiT Clarity Cloud web interface. The top navigation bar includes 'IMAGINiT Clarity', 'PROJECTS', 'TASKS', 'INTEGRATIONS', 'USERS', and a user profile 'KEO International Consultants' with initials 'JT'. The main content area is titled 'QDC' and 'Project #: 20-5583'. On the left, a sidebar shows 'Project Home', 'Files', and 'Tasks' (with sub-items 'Current', 'Complete', and 'Definitions'). The 'BIM360PUBLISH' task configuration is shown with the following fields:

- Name:** publish all models
- Frequency:** Scheduled
- Scope:** File
- Schedule:** Weekly, 22
- Project:** QDC
- Target:** /20-5883/01-WIP/DES-04-ARCH/QDC-k
- Priority:** 5
- Days:** S, M, T, W, T, F, S (all checked except F and S)
- Only on change:** ☒
- Launchable:** Yes
- Administrator Required:** Yes
- E-mail Notifications:** Yes
- Enabled:** Yes
- Wait for Completion:** Yes

An 'Update' button is located in the top right corner of the task configuration area.

IMAGINiT CLARITY CLOUD TASK

BIM 360 Revit or AutoCAD eTransmit

Using IMAGINiT Clarity Cloud, we can automate multiple tasks by setting up as displayed on the image.

Currently if we would like to eTransmit a Revit model, the process is to sync the model in the Autodesk Desktop Connector (which could take some time depending on the internet connection) and then open the eTransmit from Revit and select one by one model.

With AutoCAD the process is similar, with the difference that we can select more than one file simultaneously, but all references should be synced locally as well.

KEO's team has used this solution since mid 2021 and saved 16 man hours since then.

PROJECTS TASKS INTEGRATIONS USERS KEO International Consultants JT

QDC Project #: 20-5883

PUBLISHREVITMODEL Update

Name:	e-transmit AR models	Frequency:	On Demand
Scope:	File	Launchable:	Yes
Project:	QDC	Administrator Required:	Yes
Target:	/20-5883/01-WIP/DES-04-ARCH	E-mail Notifications:	Yes
Priority:	5	Enabled:	Yes
Output Type	Zip File	ZIP Filename	[Document]-[date].zip
Append Date to Filename	Yes	Include Links	Yes
Compact	Yes	Audit	Yes
Discard Worksets	No	Delete Revisions	No
Strip Views	All Views Not On Sheet	Force Unload Links	No
Delete Links	No	Mark For Transmit	No
Include Metadata File	No	Strip Views Exceptions	

IMAGINiT CLARITY CLOUD TASK

BIM 360 Print and/or Export from Revit and/or AutoCAD

Using IMAGINiT Clarity Cloud, we can automate multiple tasks by setting up as displayed on the image.

Exporting to different formats for sharing with other teams or submitting to a Client is a very frequent task, which requires an unattended meaningless effort from the users. Using Clarity Cloud we can export to the below formats:

- AutoCAD to PDF
 - Revit to DGN/DWF/DWG/FBX/GBXML/IFC/PDF*
 - Revit Schedule(s) Export
- * PDF Only in 2022 Version.

KEO's team has used this solution since mid 2021 and saved 24 man hours since then.

The screenshot displays the 'TASKS' tab in the IMAGINiT Clarity Cloud interface. The task is named 'Export to PDF' and is configured for project 'AU21'. The configuration includes the following settings:

- Name:** Export to PDF
- Scope:** File
- Project:** AU21
- Target:** /Project Files/01-WIP/DES-04-ARCH/rac_advanced_sampl
- Priority:** 5
- Frequency:** On Demand
- Launchable:** Yes
- Administrator Required:** Yes
- Email Notifications:** Yes
- Enabled:** Yes

Print Range: Select the sheets to print, by SheetSet, or Expression: [ALL SHEETS]

Output File(s):

- ☐ Combine multiple sheets/views into a single file
- ☒ Create separate files for each sheet/view

File Name Template: [Sheet Number]-[Sheet Name].pdf

Clarity Settings:

- ☐ Zip Output Files
- ☒ Include View/Sheet Metadata File
- ☒ Error on Missing Links
- ☐ Force Reset to View Template
- ☐ Check for Installed Fonts

Export Quality: DPI1200

Page Setup

Name: [in-session]

Paper Size: Use default paper size in model

Orientation: ☐ Portrait ☒ Landscape

Paper Placement:

- ☒ Center
- ☐ Offset from Center

No Margin

0 = X 0 = Y

Zoom:

- ☒ Fit to Page
- ☐ Zoom

1

Hidden Line Views:

Remove Line By:

- ☒ Vector Processing
- ☐ Raster Processing

Appearance:

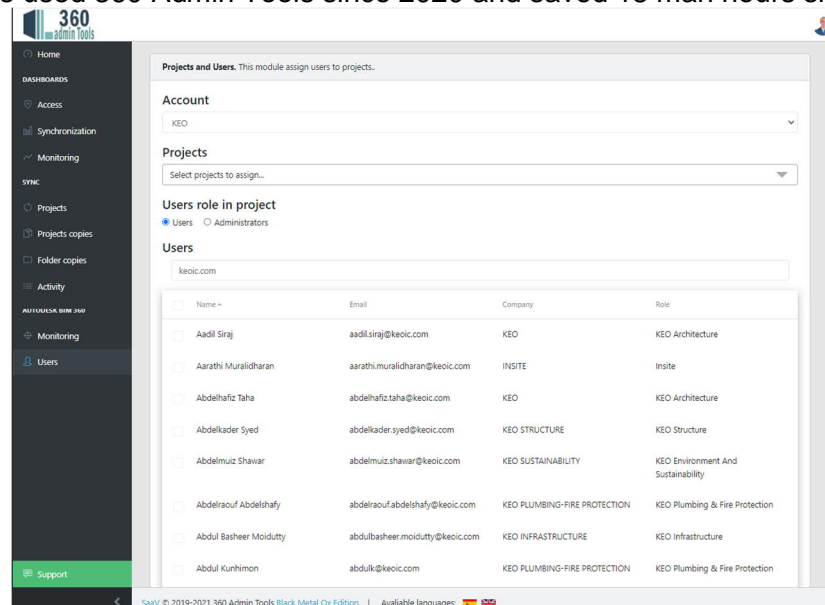
Raster Quality: High

IMAGINiT CLARITY CLOUD TASK

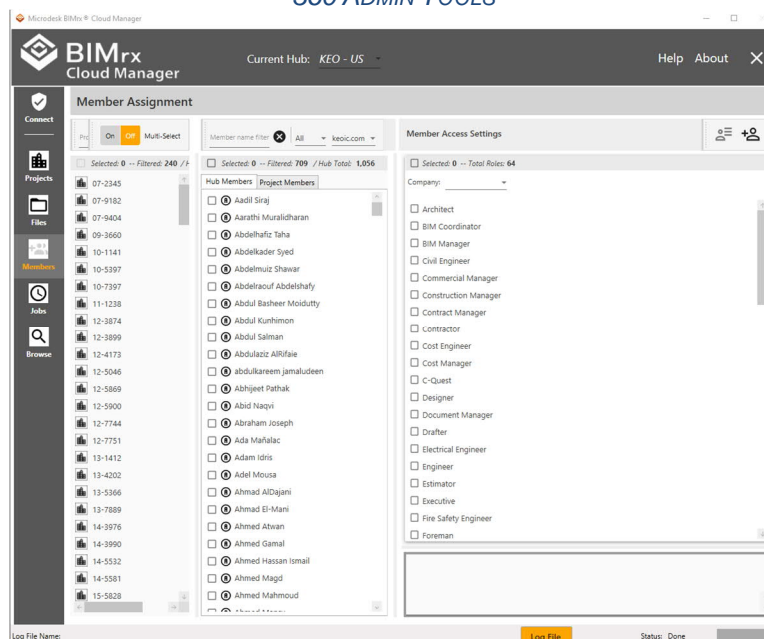
BIM 360 Users management and bulk add

When creating new projects or when a new person is joining, we need to consider to add users to the projects or to one user to several projects. Currently, that has to be done manually one by one, being a time consuming task. By using 360 Admin Tools (the free version) or BIMrx Cloud Manager, we can do both tasks easily and quickly by having the possibility to bulk add users to 1 or more projects.

KEO's team has used 360 Admin Tools since 2020 and saved 18 man hours since then.



360 ADMIN TOOLS



BIMRX CLOUD MANAGER

Integrate other tools and platforms with BIM 360 to improve collaboration, communication and coordination

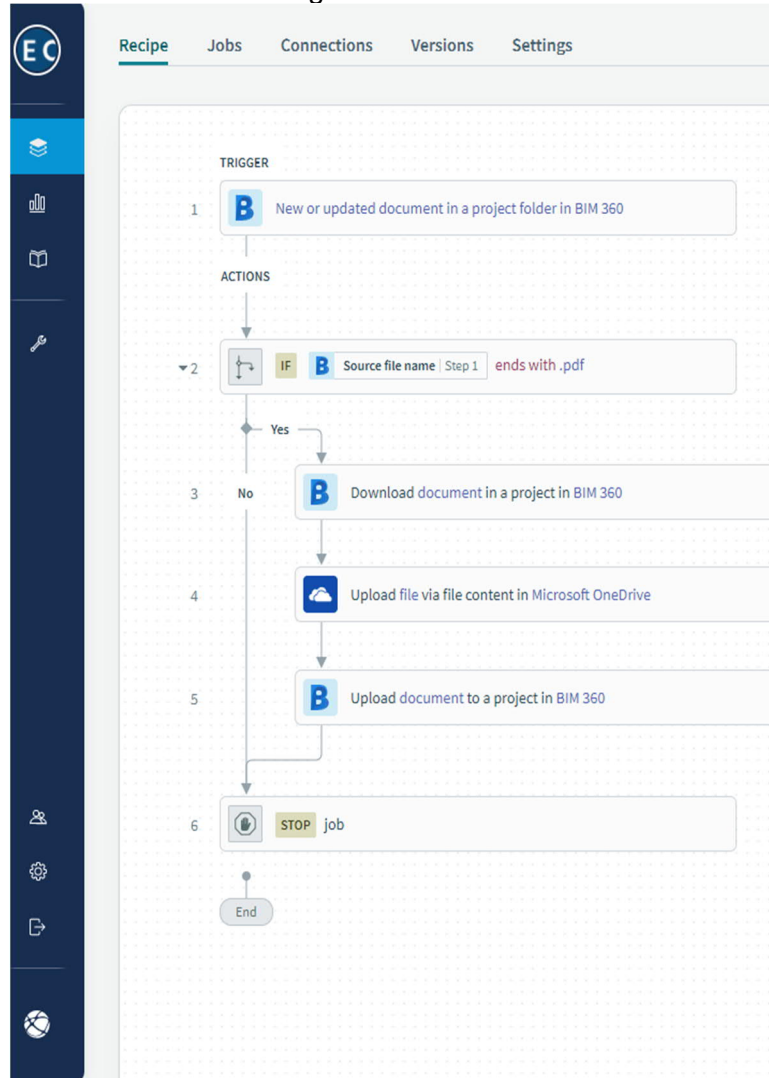
BIM 360 Files download and archive in Microsoft One Drive (live sync)

In order to set up the recipe to live sync files on BIM 360 to Microsoft One Drive, we will need to do the following:

- Add the connection to BIM 360
- Add the connection to Microsoft One Drive

Once the above has been established we can proceed to create our recipe to sync our selected BIM 360 project with the selected folder in Microsoft One Drive. We can also add conditional formats to sync only specific file formats or any other formulas.

KEO developed this solution in 2020 using ACC Connect.



ACC CONNECT (WORKATO) RECIPE

BIM 360 Files download and archive in Microsoft One Drive (live sync)

In order to do a copy or transfer our files from BIM 360 to One Drive, we currently have to download the files/folders locally and then upload to the desired location in One Drive, which of course will depend on the data size and the internet speed for the time needed to complete this task. By using 360 Admin Tools or Cloudsfer, this task can be automated or scheduled, without the need of depending on your internet speed or local space.

The screenshot shows the 'New project' configuration window. It is divided into three main sections: 'Autodesk BIM 360', 'Configuration', and 'Options'.
- **Autodesk BIM 360:** Includes fields for 'Account' (set to 'KSO') and 'Project (*)' (set to 'Autodesk University 2021').
- **Configuration:** Includes fields for 'Description' (OneDrive to BIM 360), 'Primary CDE' (Autodesk BIM 360), 'Date' (30/8/2021 16:42), 'Frequency' (Every day), 'Notification' (Just with errors or conflicts), 'Sync folder' (Sync all, folder01, folder02), and 'Sync extensions' (Sync all, *.vt, *.docx).
- **Options:** A list of checkboxes for synchronization: 'Synchronize new elements in BIM', 'Synchronize updated elements in BIM', 'Synchronize deleted elements in BIM', 'Synchronize new elements in connector', 'Synchronize updated elements in connector', and 'Synchronize deleted elements in connector'. All are checked.
- **Connector:** A dropdown menu showing 'Dropbox' and a tree view of connector folders under 'Dropbox'.

360 ADMIN TOOLS

The screenshot shows the Cloudsfer interface with a welcome message: 'Hey, It's Good To See You Today! Let's start a new project together within seconds'. The interface is divided into three steps: 'Step 1: Select source system', 'Step 2: Select target system', and 'Step 3: Finalize'.
- **Step 1: Select source system:** Shows 'Source: OneDrive (Personal)' with a 'Connect' button. Below, it shows 'Name: Juan Tena' and a search bar. The 'Selected path' is 'OneDrive\Documentos'. A tree view shows 'OneDrive' with subfolders 'Datos adjuntos de correo electrónico', 'Documentos', and 'Imágenes'. 'Settings' include 'Include parent folder' (checked) and 'Include content shared with user' (unchecked).
- **Step 2: Select target system:** Shows 'Target: BIM 360 (Admin)' with a 'Connect' button. Below, it shows 'Name: Juan Tena Florez' and 'Email: Juan.TenaFlorez@keoic.com'. The 'Selected path' is 'BIM 360\KSO (Docs)\Autodesk University 2...'. A tree view shows 'BIM360' with subfolders '00-0000', '01-WIP', '01-WIP-CQS-PM', '01-WIP-DES-PM', '01-WIP-INF-PM', '01-WIP-INS-PM', '01-WIP-SUS-PM', and '02-SHARED'.
- **Step 3: Finalize:** Shows a 'Create Plan' button and an 'Options' button.

CLOUDSFER

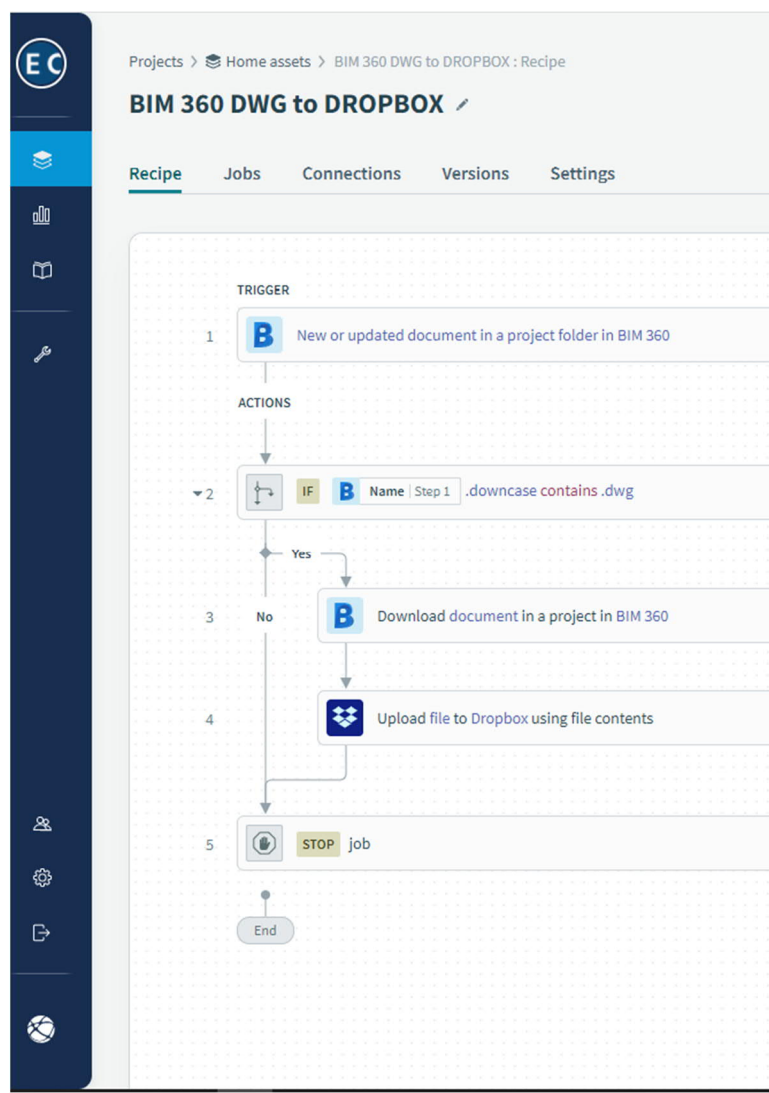
BIM 360 DWG to DROPBOX (live sync)

In order to set up the recipe to sync files between different platforms, we will need to do the following:

- Add the connection to BIM 360
- Add the connection to Dropbox

Once the above has been established we can proceed to create our recipe to sync the files from our selected BIM 360 project to the selected folder in Dropbox and adding a conditional formula to select only dwg files.

KEO developed this solution in 2020 using ACC Connect.



ACC CONNECT (WORKATO) RECIPE

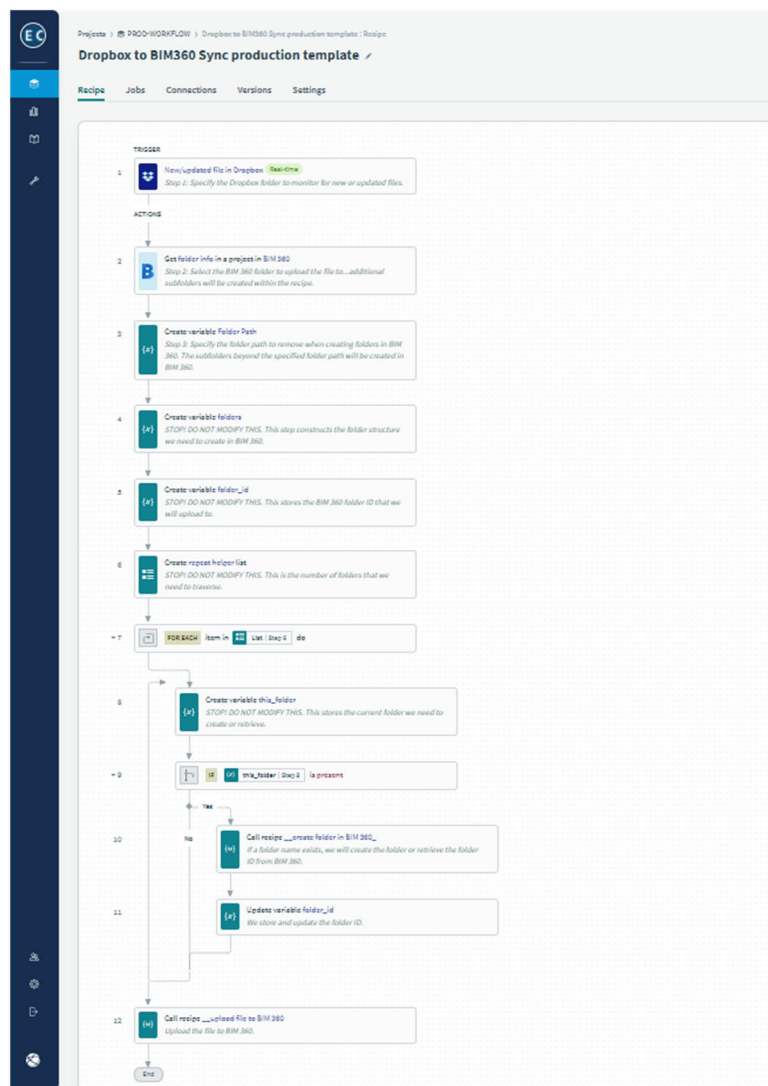
DROPBOX to BIM 360 (live sync)

In order to set up the recipe to sync files between different platforms, we will need to do the following:

- Add the connection to BIM 360
- Add the connection to Dropbox

Once the above has been established we can proceed to create our recipe to sync the files from the selected folder in Dropbox to our selected BIM 360 project.

KEO developed this solution in 2020 using ACC Connect.



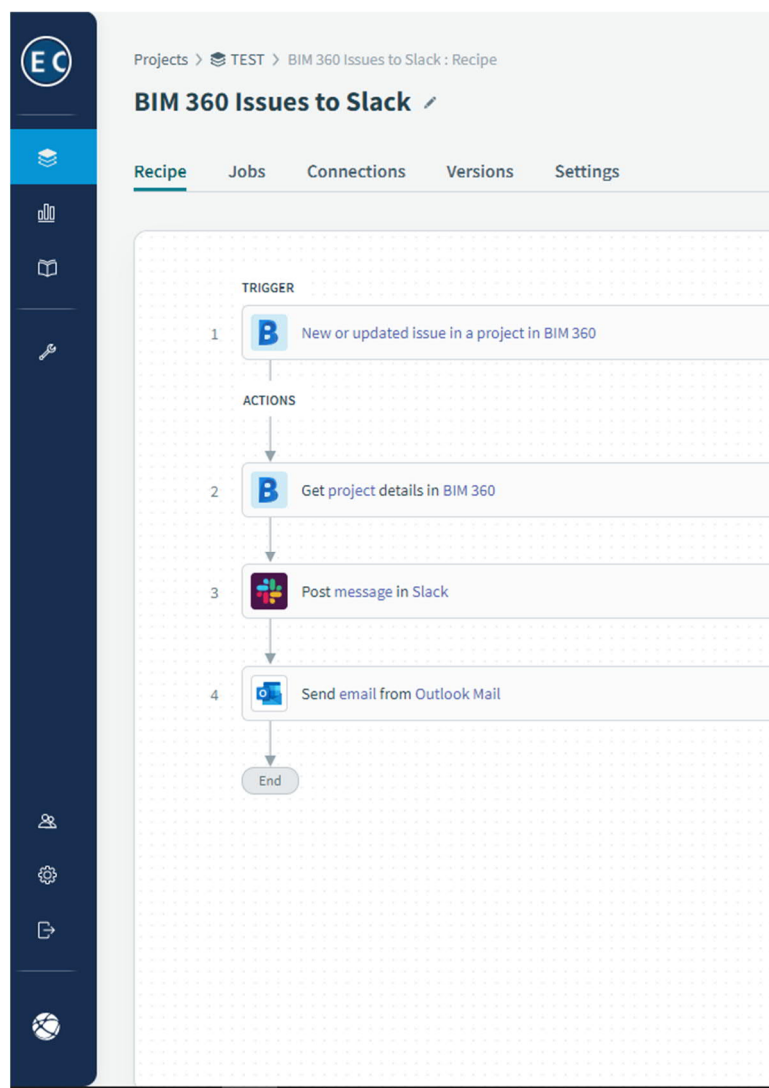
ACC CONNECT (WORKATO) RECIPE

BIM 360 to Outlook or Slack

In order to set up the recipe to send messages or emails when an issue is created or updated or when a new file is created or updated, we will need to do the following:

- Add the connection to BIM 360
- Add the connection to Slack and/or Outlook

Once the above has been established we can proceed to create our recipe to send custom messages to a specific Slack channel with the information selected or to send an email to an address specified.



ACC CONNECT (WORKATO) RECIPE

Apply better techniques to improve the migration of On-Premises files to BIM 360

On Premise files to BIM 360 (Project migration from local to cloud)

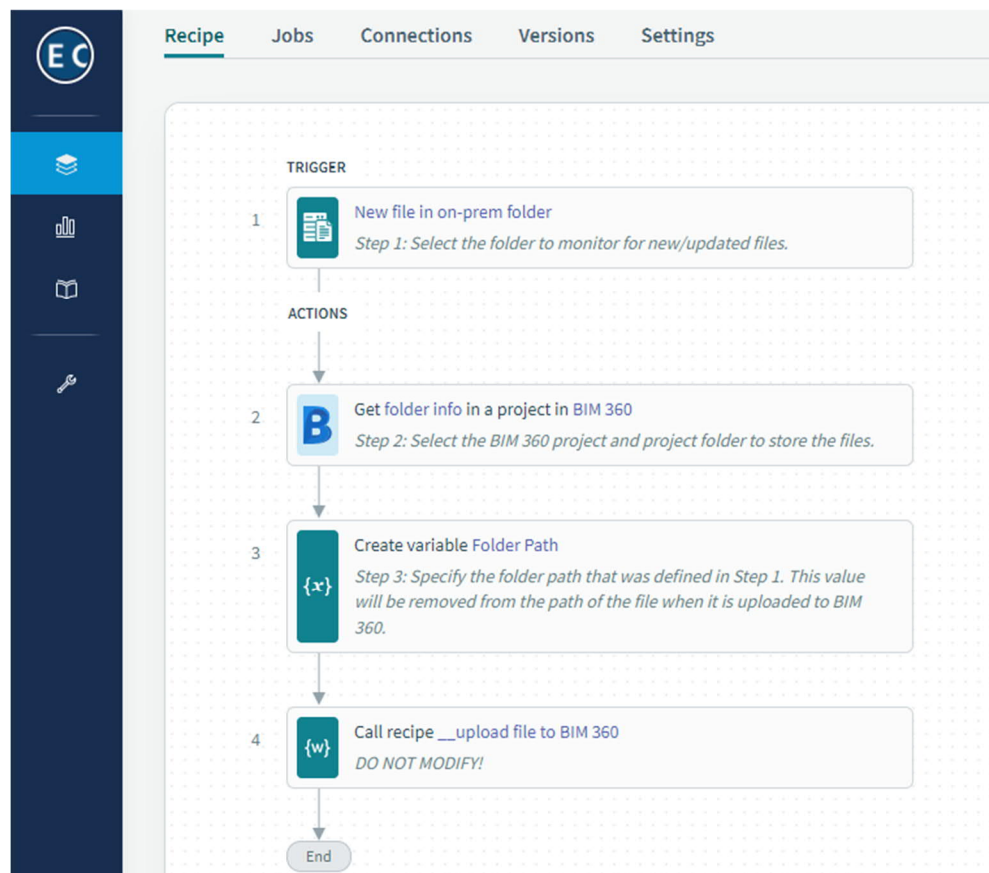
When migrating projects, which were previously hosted on other servers or local systems, we need to ensure a smooth transfer of the information and rely on an automated workflow to optimize the time spent in this task. Next, I will explain the different possibilities we can do to achieve that.

ACC Connect

In order to set up the recipe to use on-premises files, we will need to do the following
Creating + connecting On-Prem Agent:

- Create an on-prem group
- Add an agent
- Run the agent

Once the above has been established we can proceed to create our recipe to sync the local files to our selected BIM 360 project.



ACC CONNECT (WORKATO) RECIPE

Cloudsfer

In order to start the migration process we need first to do the below steps to Connect File System Agent:

- Add and Connect to a new Agent
- Install Cloudsfer On-Premise agent
- Copy and paste Token. Run it.

Add New Agent

In order to start a new migration

- Download Cloudsfer's File System Agent and copy the secured token.
- Install agent on the desired machine and paste the token during installation.
- When completed, Click the "Add" button.
- Run "Cloudsfer On Premise Agent" to establish a secure connection.

[For more instructions click here](#)

Token:

[Download agent](#)

[Cancel](#) [Add](#)

In order to enable the migration to BIM 360 we need first to do the below steps:

- Connect to BIM 360 Admin
- Allow authorization

Step 2: Select target system

Target: **BIM 360 (Admin)** [Connect](#) [Options](#)

Name: Juan Tena Florez
Email: Juan.TenaFlores@keoic.com

Select BIM 360 Account:

Select Project:

Authorize application

Cloudsfer Production (app.cloudsfer.com) is requesting permission for the following information:

juan.tenaflorez

Data

- Manage your data
- Write data
- View your data

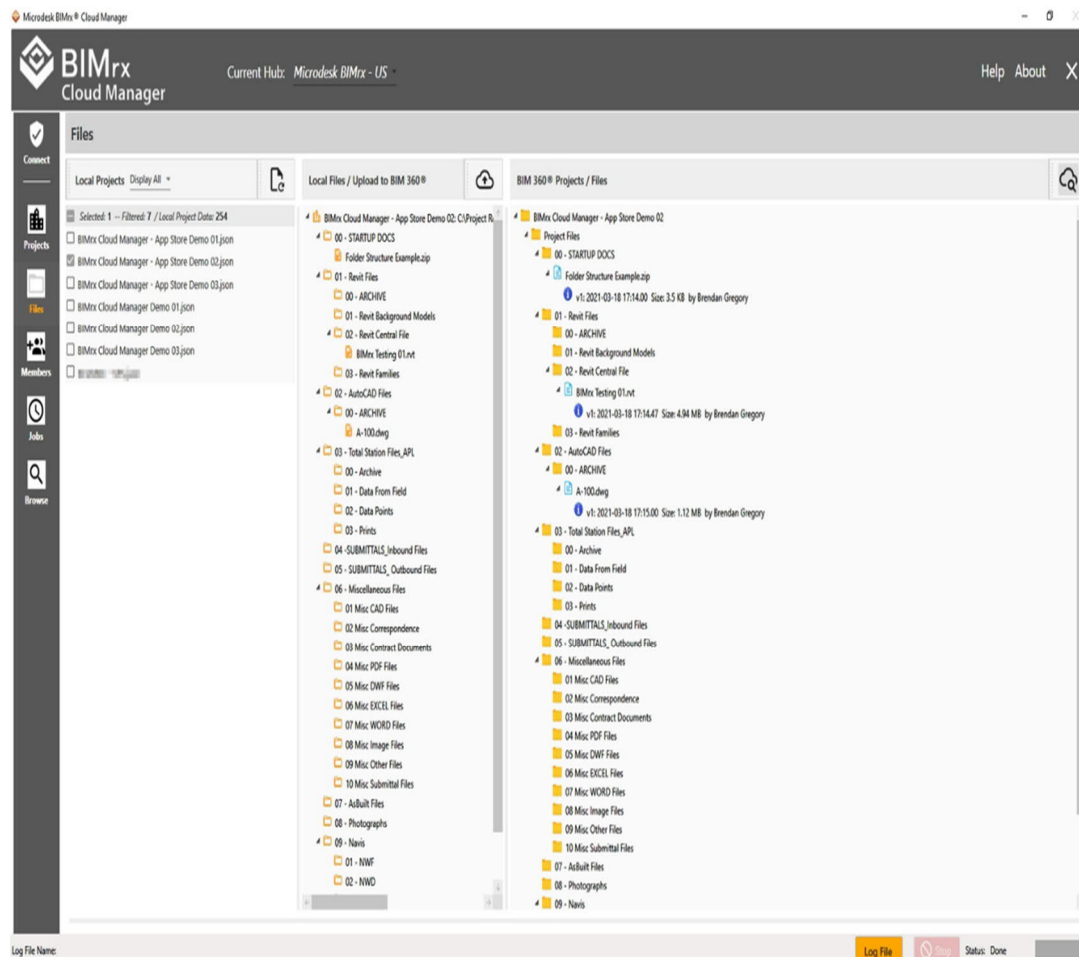
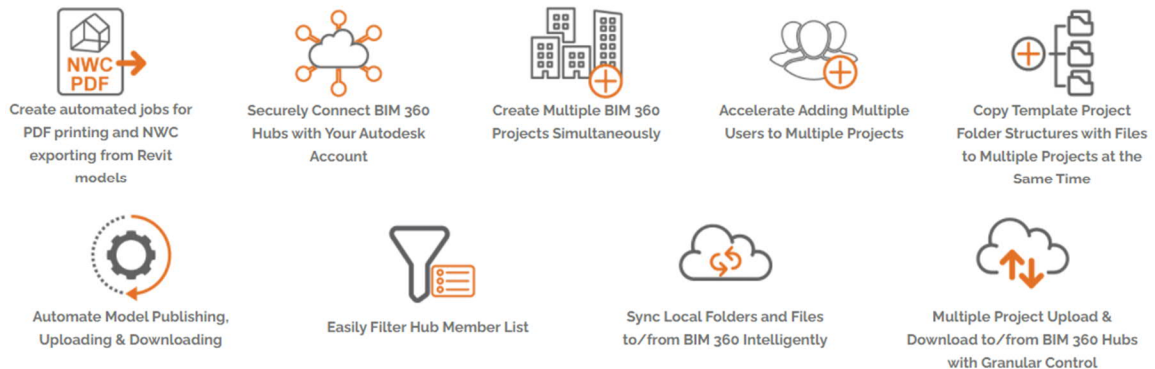
[ALLOW](#)

DON'T WANT TO AUTHORIZE? [CANCEL](#)

Your account for everything Autodesk [LEARN MORE](#)

BIMrx Cloud Manager

BIMrx Cloud Manager is a desktop app which needs first to connect to BIM 360 account and Hubs we would like to add and then to the local drive. Then we need to create the local projects, which we will use to migrate or to sync, and finally select the BIM 360 project that will be transferred. A log file is created to report any actions performed.

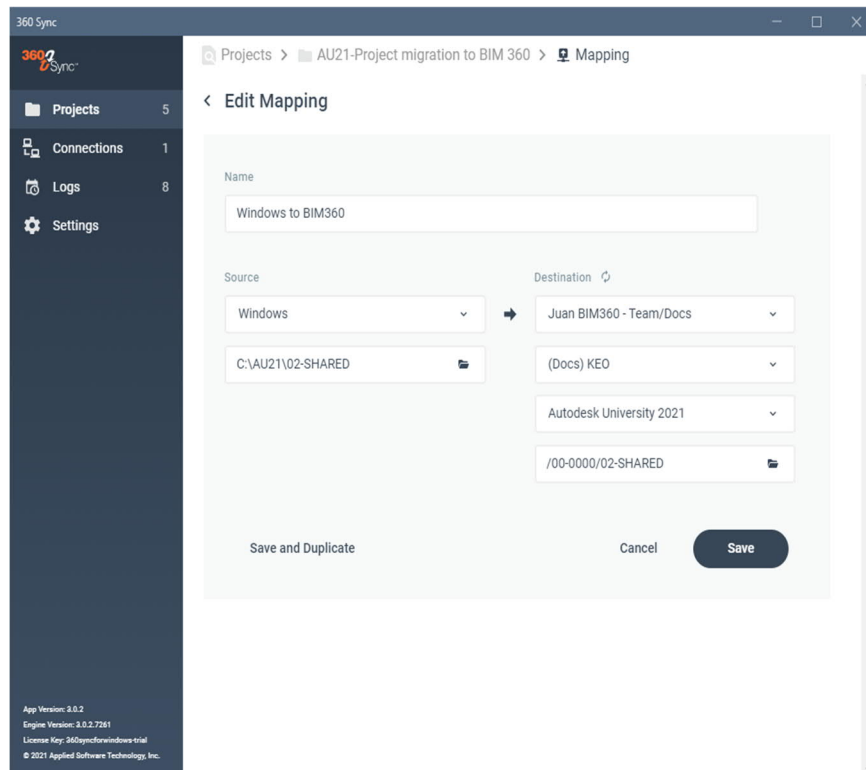


360Sync™

360 Sync tool is very simple to use, the below steps are to be done to do a project migration with on-premises files.

- Add a BIM 360 Connection
- Add a project
- Add a mapping
- Run or schedule it

As the tool is a desktop app, it is also possible to use the Microsoft Windows Task Manager to schedule certain tasks to run automatically.



Conclusion

Automation + Integration = Better ROI

KEO International Consultants has achieved with automation:

- 10+ tasks/routines since 2019
- 200+ man hours saved since 2019
- Increased consistency
- Improved quality
- Enhanced information management
- Improved collaboration

KEO International Consultants has integrated:

- 4 different platforms
- 400+ man hours saved since 2019
- 100+ projects migrated on-premise
- 1,000+GB migrated on-premise
- 100+GB transferred to other platforms
- Better communication

I hope that you enjoyed this session and please feel free to contact me for any further support.