



RPA (Desktop flows) in a day

Virtual delivery logistic notes



1. There is a main instructor and several teaching assistants (TAs). TA will be hosting a separate troubleshooting online meeting (link is ...) where you can join to get hands of help

2. We will use Teams poll (or sli.do website) to track the real time lab completion status in the room. As soon as you finished a lab, please vote in the corresponding poll question.

3. When you have question that can wait, please type in Teams chat window. Instructor will check the chat windows during break.

4. When you have a question that need immediate attention, e. g. a critical concept is missing. Most people will be impacted. Etc. please unmute yourself and raise it.

Before you started - Lab Setup (prerequisite 1.1 – 1.3) office hour (60 mins)

Tasks:

- Have machine ready**
- Have tenant account ready**
- Have environment ready**
- Have software installed**

Agenda

Module		ID	Session	Timing
Part 0: Pre setup work office hour	0.5 hour 4th May	0	Environment and account check. Setup lab. Troubleshooting	60 minutes
Workshop officially starts here				
Part I: Introduction	0.5 hour 4th May	1	Introduction to RPA, Power Automate, and desktop flows	30 minutes
10 mins break				
Part II: Process advisor &	.45 hour	2	Identify automation opportunities and process bottlenecks using Process advisor	45 minutes
Desktop Flows Basic	2 hours	3	Create your first Power Automate desktop flow	30 minutes
		4	Use Input & Output Parameters	30 minutes
		5	Use desktop flow in Power Automate through gateway and connection	60 minutes
60 mins lunch				
Part III: Hyper Automation Integration	1.5 hour	6	Connect to Outlook	30 minutes
		7	Integrate with AI Builder	30 minutes
		8	Integrate with Microsoft Teams	30 minutes
10 mins break				
Part IV: Add Power Automate Desktop Web and Excel in Power Automate	1.5 hours	9	Add Power Automate Desktop Web and Excel capabilities	90 minutes
10 mins break				
Part V: Advanced Topics (optional)	3.5 hours	10 11 12	Unattended desktop flows Error handling Monitor Desktop flow runs and manage gateway queue	3.5 hours
10 mins break				
Part VI: Closing	0.5 hour	13	Roadmap, Licensing, Q&A, Closing and Survey	30 minutes

Rules and Housekeeping



Please do not share the meeting invite URL with anybody



This is an action-packed agenda, so please stay on mute



Please ask questions on the chat and be patient when waiting for a response

Lab scenario – Invoice processing



A contractor finished a project and would like to process the invoice. She sent the invoice pdf file by email



Power Automate monitored the inbox used AI builder to abstract information from the attachment



Power Automate sent approval request to project owner on Microsoft Teams



Power Automate Desktop flows feature open the legacy win32 application that manages invoices and fill in the approved invoice details

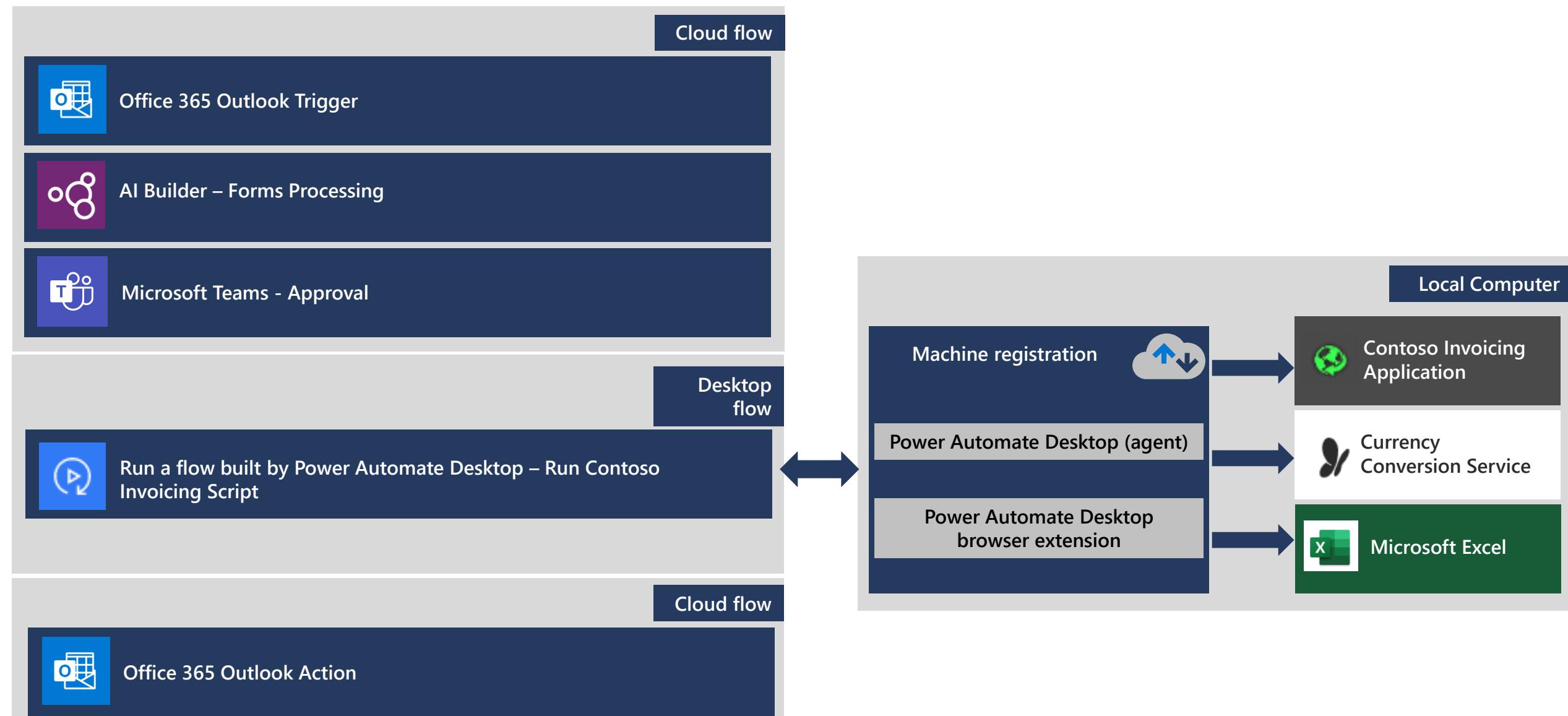
A web base real-time currency conversion is used

An audit log is captured in Microsoft Excel



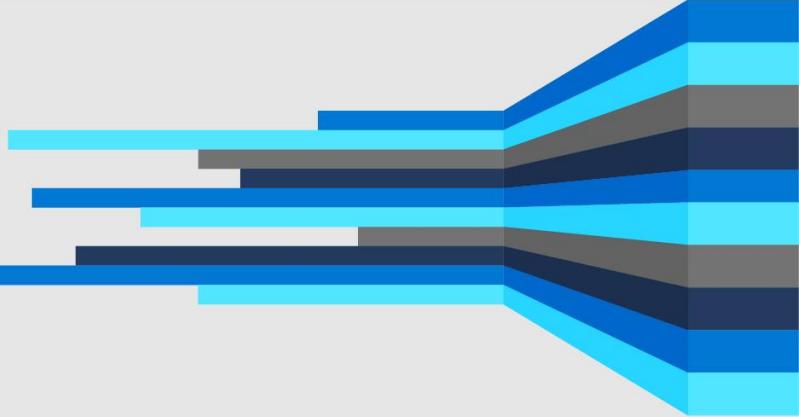
Power Automate sent an email back to the contractor to notify that her invoice has been approved

Lab scenario – Invoice processing Solution Architecture



Section 1: Introduction to RPA, Power Automate and desktop flows

Outline

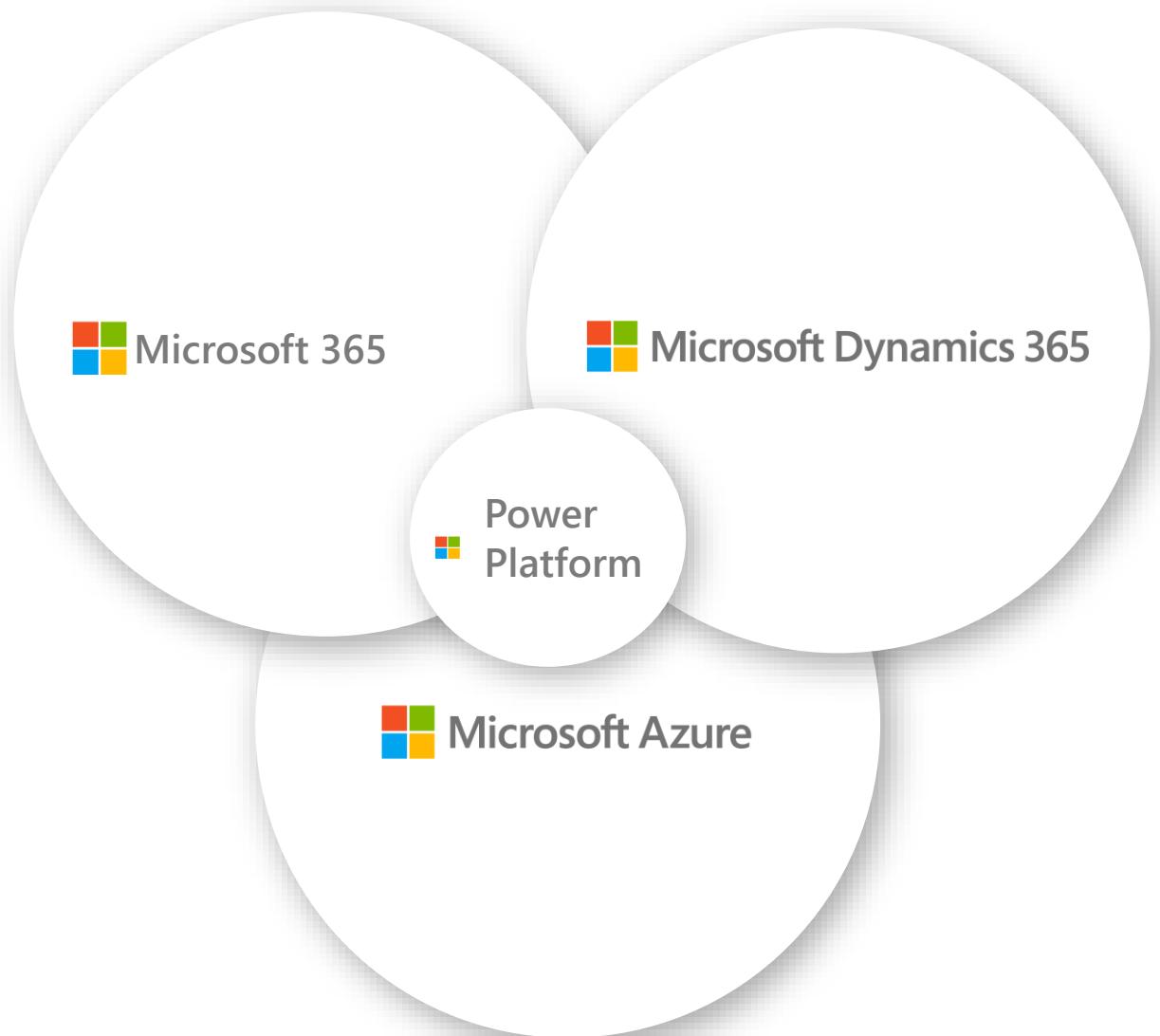
- 
-  Power Platform
 -  Power Automate
 -  Desktop flows
 -  Architecture
 -  Lab overview

Microsoft cloud

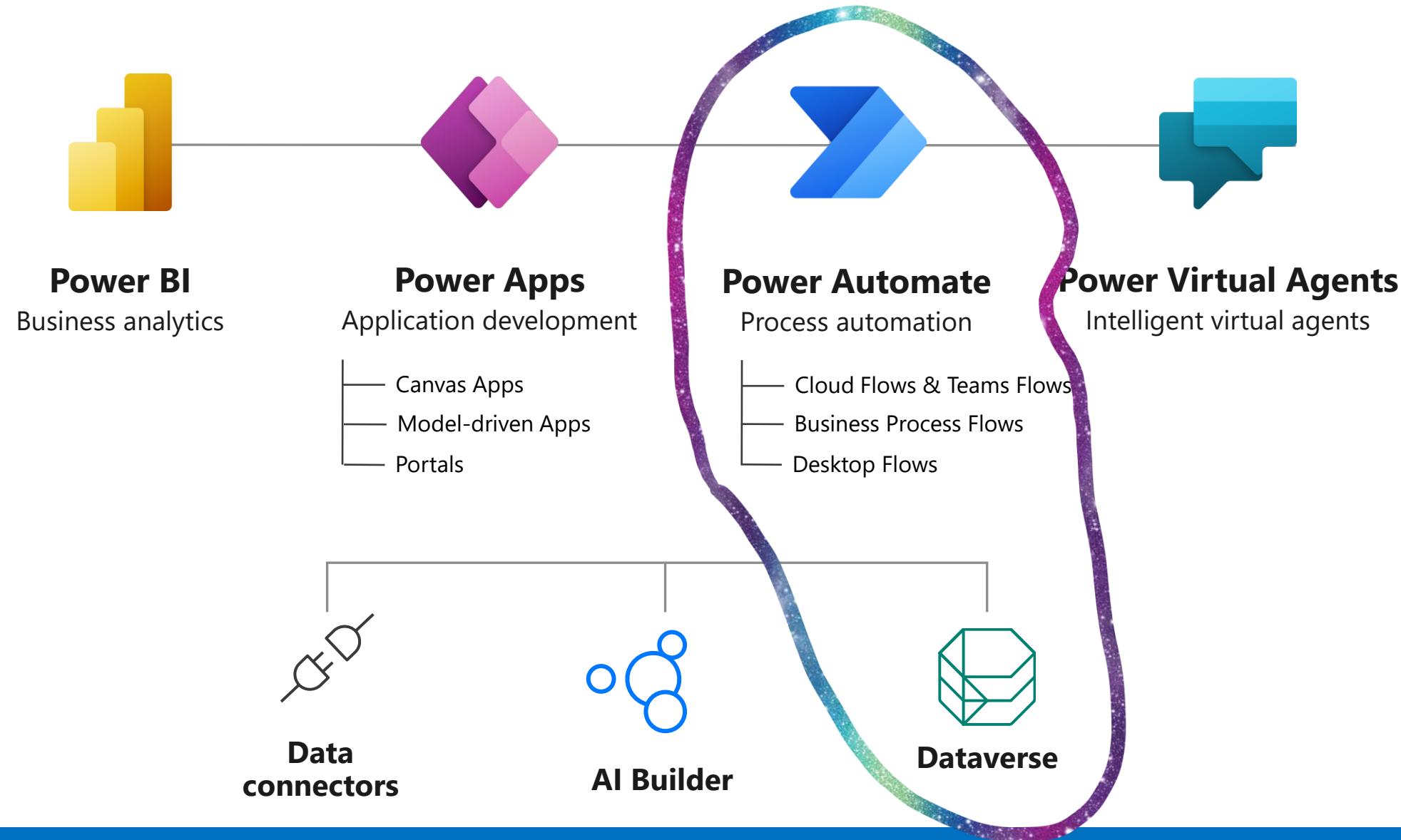
Intelligent business applications

Productivity and collaboration

Open, flexible, enterprise-grade cloud computing platform



Power Platform overview

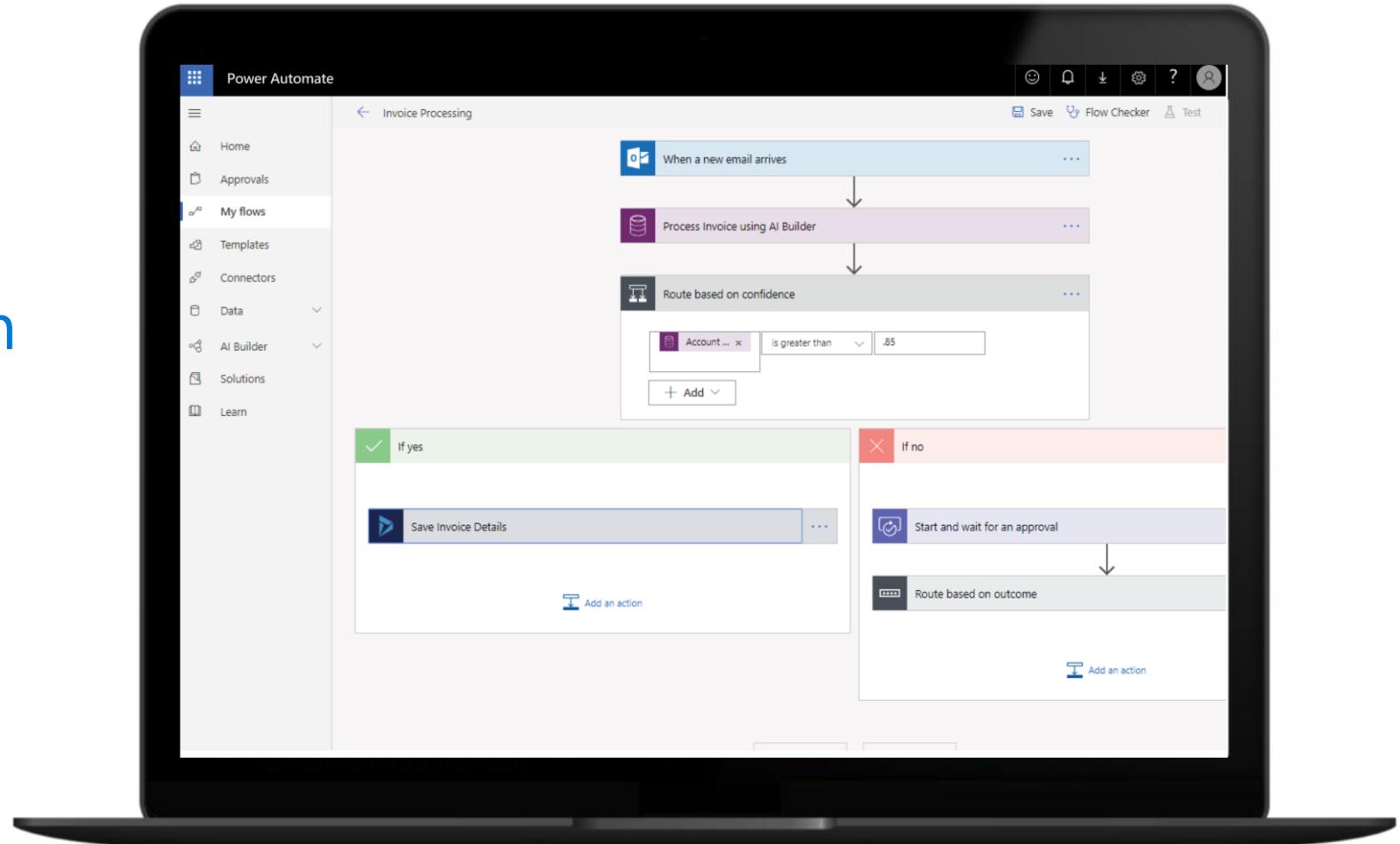


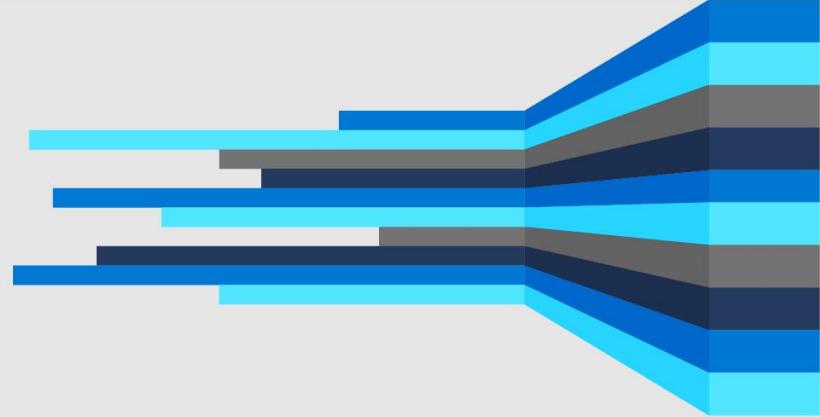
Center of Excellence (Governance, Compliance & Security)

Microsoft Power Automate



Holistic end-to-end
intelligent automation
platform for all





Power Automate Vision:
People should only have to focus on
tasks where they can bring unique
human value

Their potential is limitless.
But their time is not.

Microsoft Power Automate value pillars



Automation
at scale



Seamless, secure
integration



Accelerated
productivity



Intelligent
automation

App Connectors



More than 470
app connectors
(including on-prem applications)

RPA market landscape

#3 search term on Gartner.com

RPA market expected to >**\$4B by 2023**

- **UiPath** raised over \$400M since 2005
- **Automation Anywhere** raised ~\$550M in 2018
- **Blue Prism** revenue > £25 million in 2018 (>2x 2017)

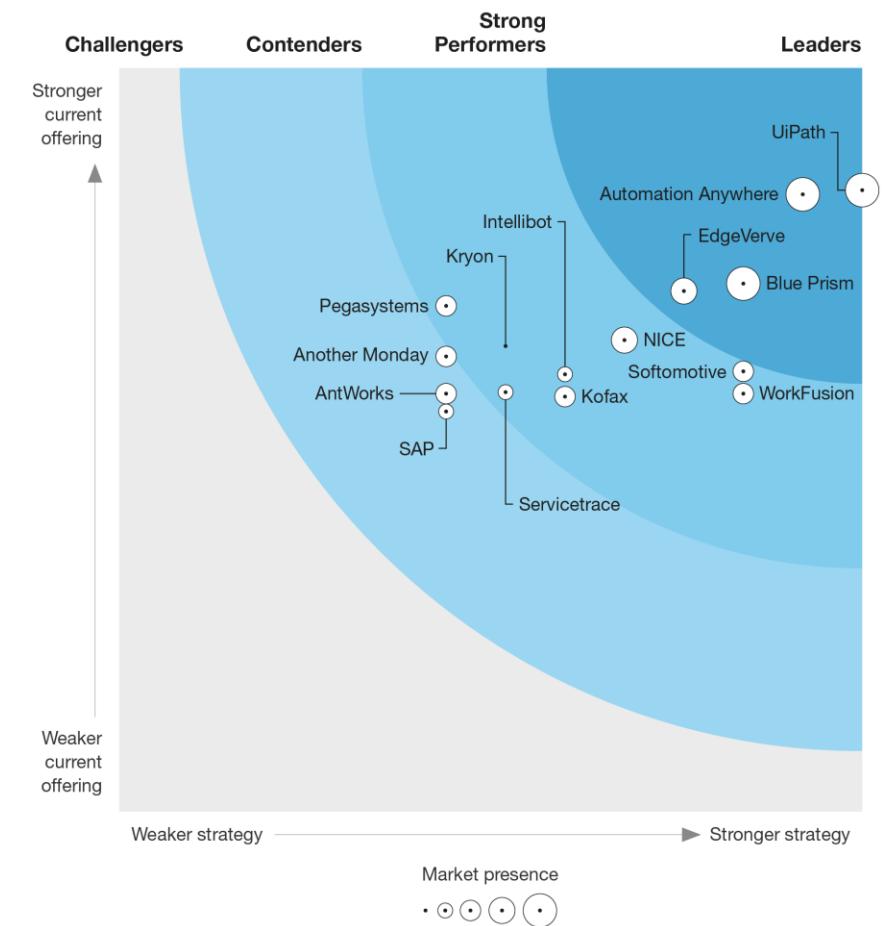
RPA services market will top **\$12B in 2023**

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THE FORRESTER WAVE™

Robotic Process Automation

Q4 2019



147757

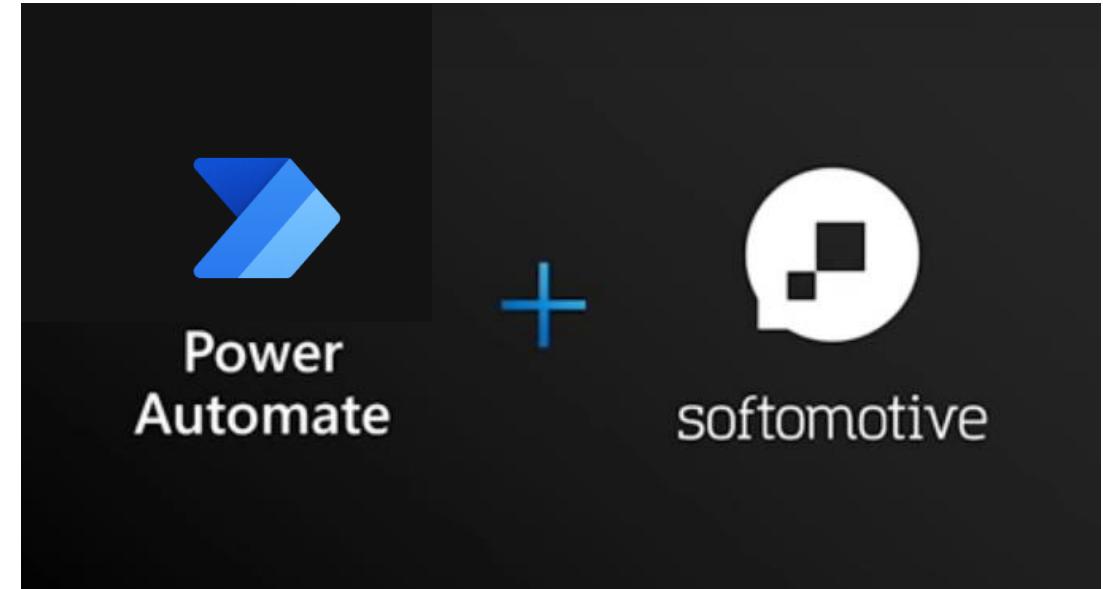
Source: Forrester Research, Inc. Unauthorized reproduction, citation, or distribution prohibited.

Microsoft acquires Softomotive to expand low-code robotic process automation capabilities in Microsoft Power Automate

Microsoft announced the acquisition of Softomotive, a world-leading provider of robotic process automation (RPA) with over 15 years of experience and the creator of WinAutomation.

WinAutomation, expands the Microsoft Power Automate capabilities, through it's Web & UI Automation, interaction with Legacy systems and Terminals, Java applications as well as Citrix Automation.

The combination of these two products, addresses all needs in the RPA market, and drives the RPA experience to a completely different level.



Recognition as Leader in 2021 Forrester Wave report

- Strong momentum for Power Automate:**

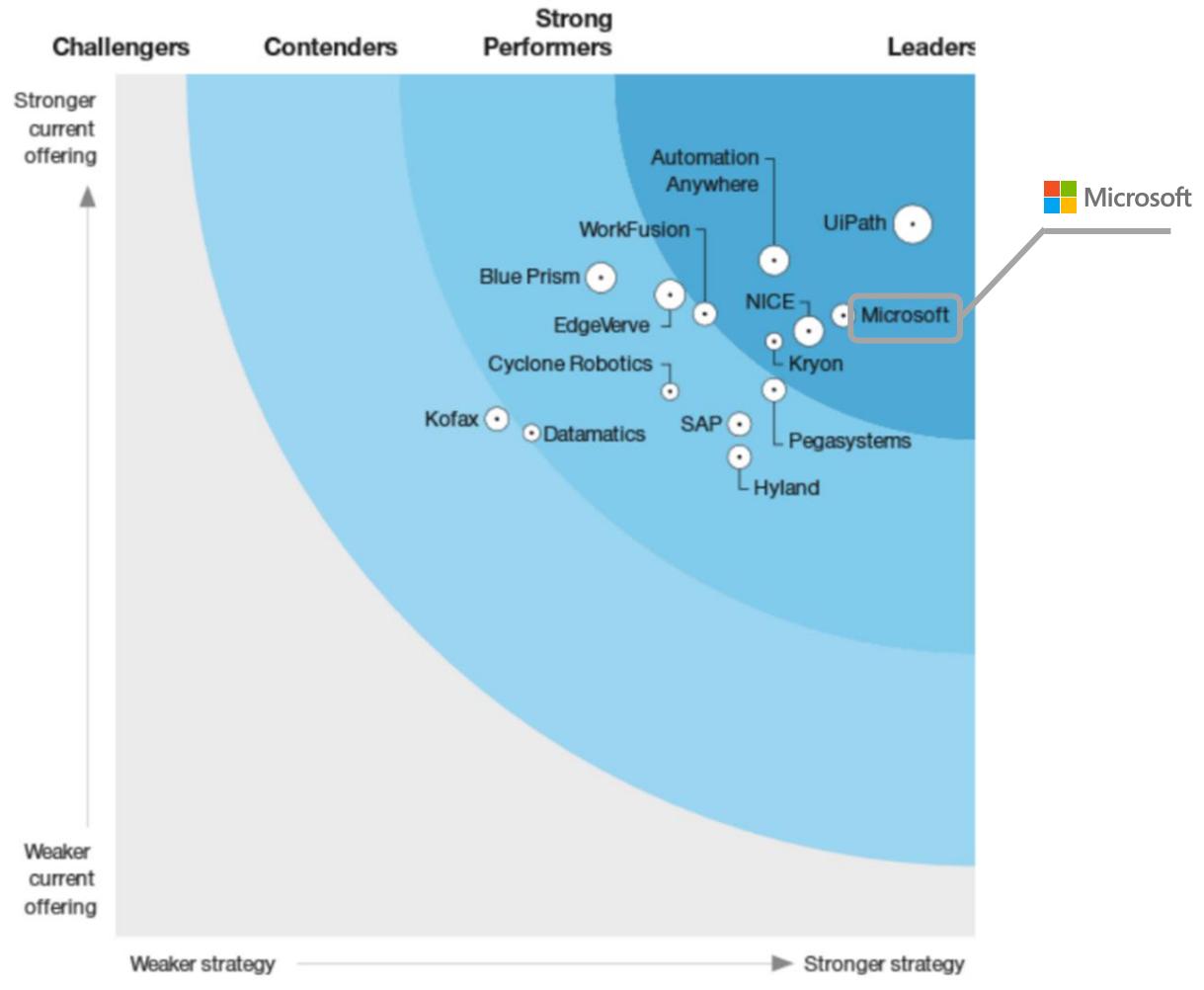
"Microsoft has caught up with the Leaders. The software giant's vision is to deliver the most comprehensive SaaS-based intelligent automation solution; Power Automate is a cloud-native, low-code automation platform that brings together UI- and API-based automation with AI."

- Customer success is achieved at no cost:**

"[Microsoft offers a] rich set of training and learning resources and community programs, complemented by a broad global partner ecosystem, helps customers succeed at every stage. Microsoft focuses on democratizing RPA by making it accessible to users with a very low entry barrier. Users can start instantly at no cost and can deploy their first automation in minutes."

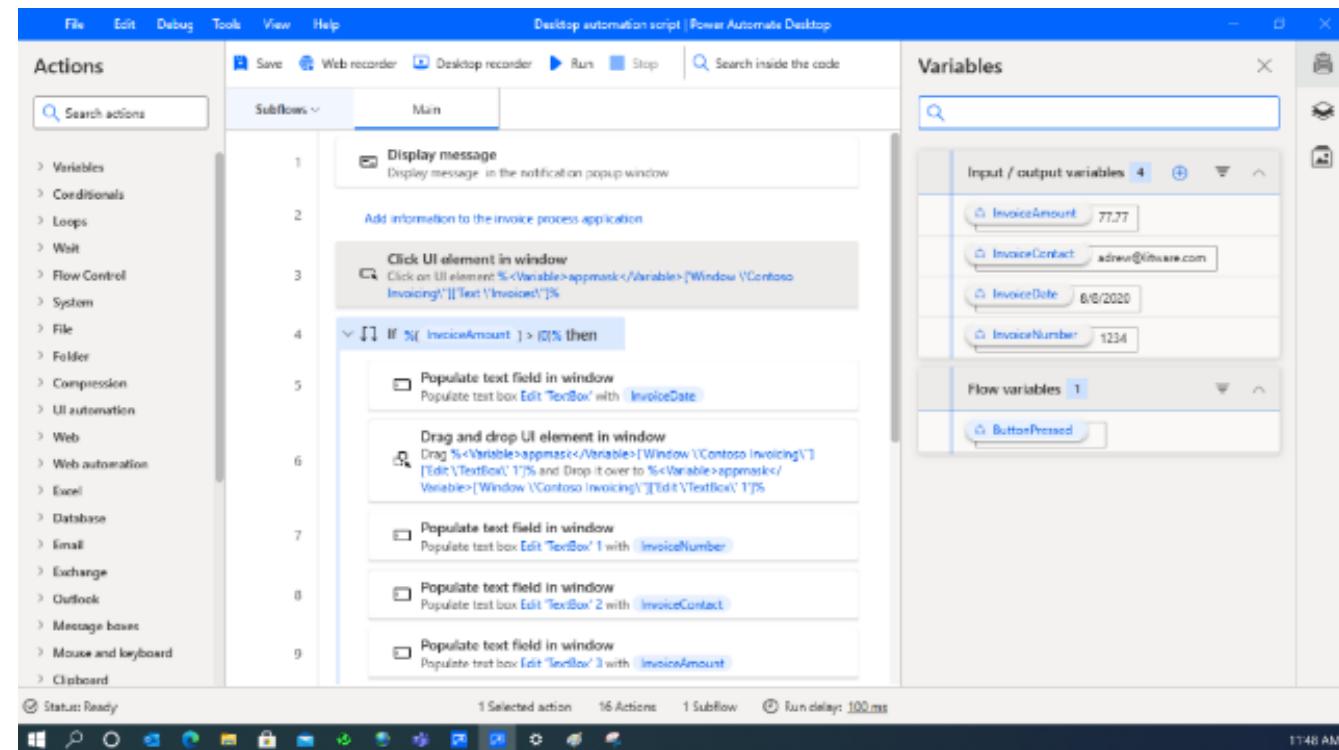
- Ease of use and visual appeal:**

"Microsoft customers seeking RPA get an easy, attractive offering that fits business users, citizen developers and professional developers alike." "The design experience is rich, yet intuitive, and will please citizen and professional developers alike."



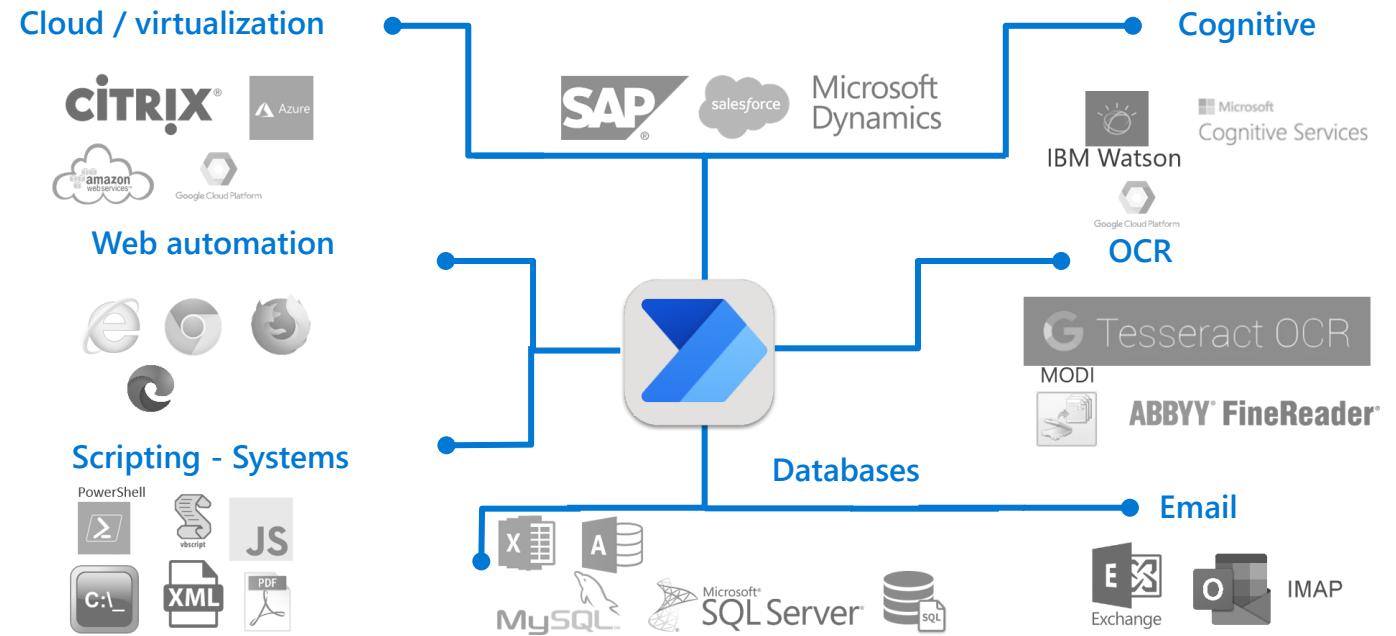
Introducing Power Automate Desktop

- Technology and intellectual property acquired from Softomotive, now an integrated Power Automate experience.
- Ease of use - Low-code/no-code Drag & drop approach with Recorders (Desktop and Web)
- Advanced Debugging features
- Reusability of Controls, Images and Functions
- User and Process collaboration through message boxes
- Advanced Error handling features
- Support for advanced coding-scripting (*VBScript, JavaScript, Python, PowerShell, Command Line*)
- Attended and Unattended execution mode
- Concurrent process execution



Power Automate Desktop Includes more than 400 actions covering all users needs

- Web - Desktop applications
- Citrix and VDI Environments
- Cloud Automation (Microsoft Azure, Amazon AWS) and Cognitive capabilities (IBM, Google, Microsoft)
- Databases-SQL Excel
- PDF & XML
- Files, Folders and Mouse-Keyboard
- Scripting (Python, VBScript, JavaScript, PowerShell, Command Line)
- Email (IMAP, smtp, exchange, outlook)
- Computer Vision and Image recognition
- Encryption – Cryptographic actions, CyberArk support
- OCR for Structured and Unstructured data capturing and handling
- Text manipulation





All Labs are located here:
<https://aka.ms/rpa-in-aday>

TODAYS LABS

- Lab 1 – Lab Platform build (Pre-Req)
 - Lab 2 – Automation & Process Advisor
 - Lab 3 – Power Automate Desktop Flow
-



Hyper Automation

Diverse interfaces

AI, cloud services (APIs), and legacy Desktop-based systems

Infusion of AI

Documents,
Forms, invoices, images, etc...

API-automation (DPA)

Cloud services and internal
API services

UI-automation (RPA)

Legacy web, windows,
terminal apps

Forms understanding
+ OCR + Digital Paper
AI builder

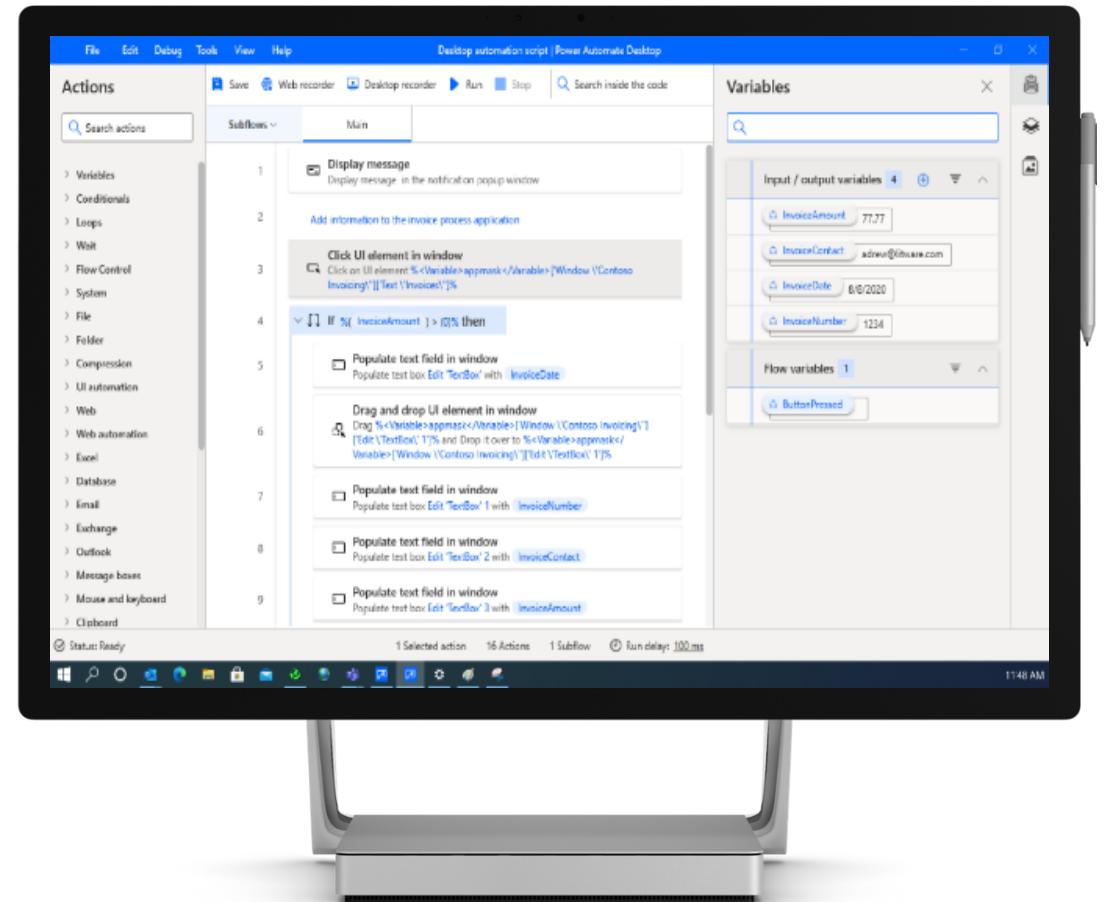
470+ connectors + custom
connectors in Azure

User Interface automation

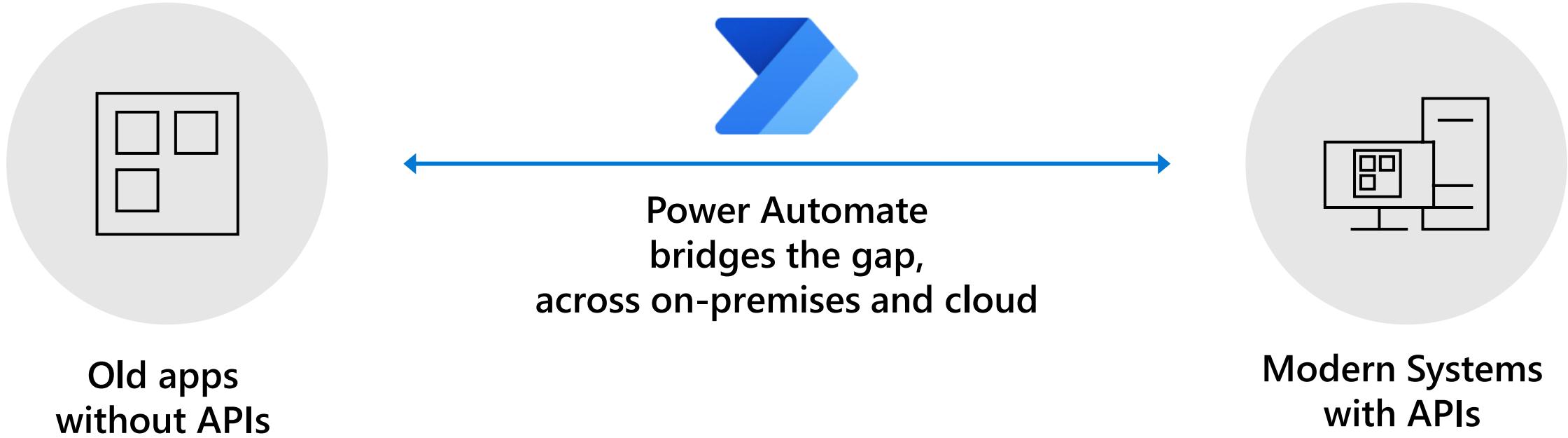
Power Automate
Workflow designer and orchestrator

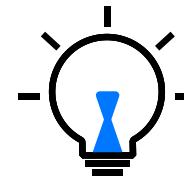
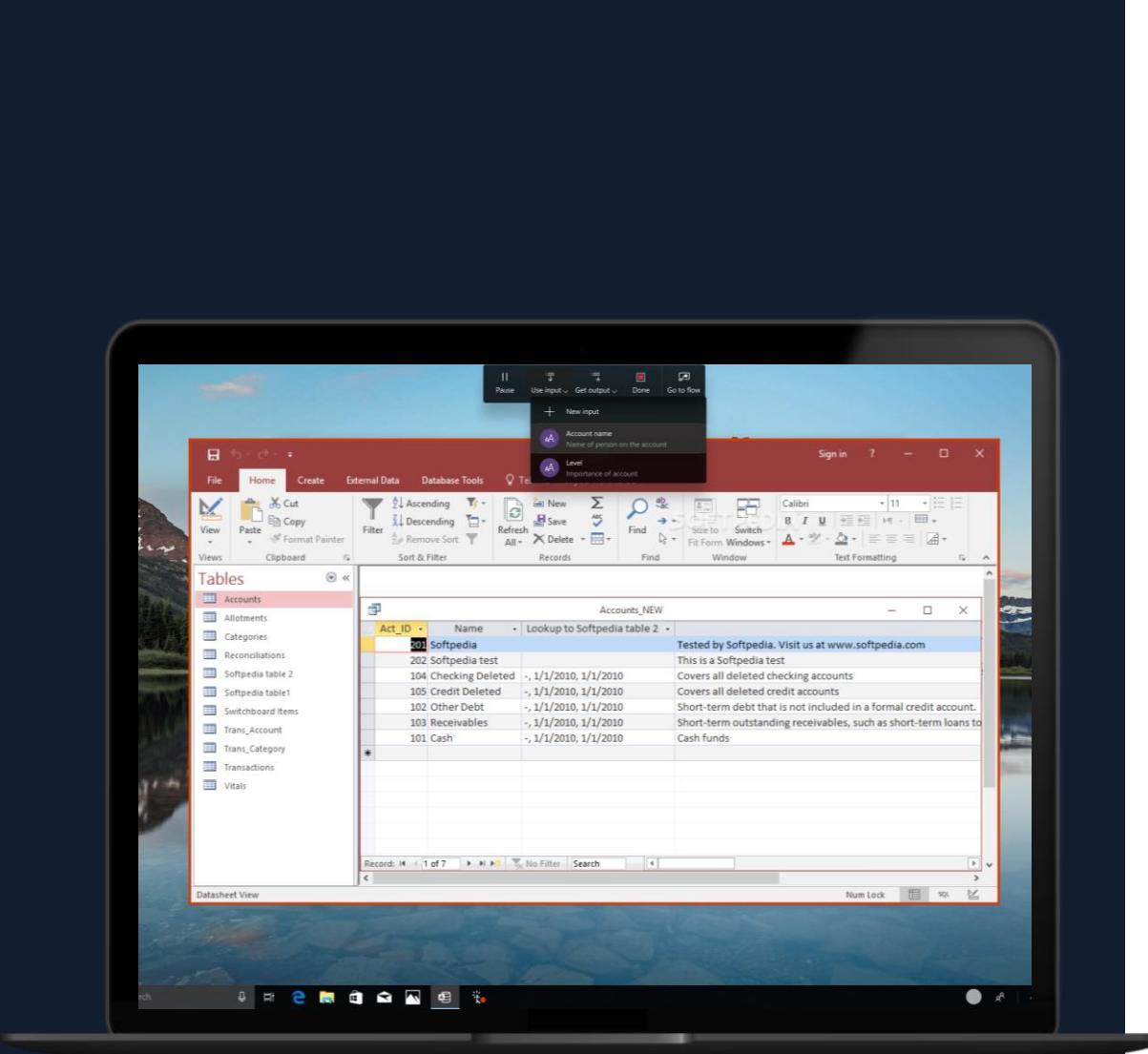
Microsoft Power Automate

Automate modern applications
Automate legacy applications



Bridging automation between the old and new





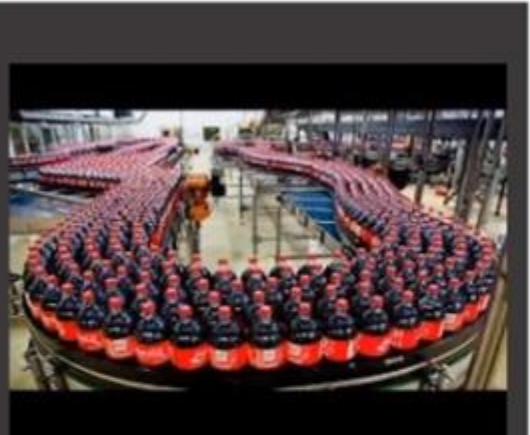
Making automation intuitive

Simple UI makes recording flows easy

Repetitive tasks can be automated by frontline workers with or without APIs.

Customer RPA use case demo

Coca-Cola United



9 Production Centers
54 Warehouses



~ 5,000 trucks
>300,000 coolers etc.



All Consumer Channels
~200,000 customers



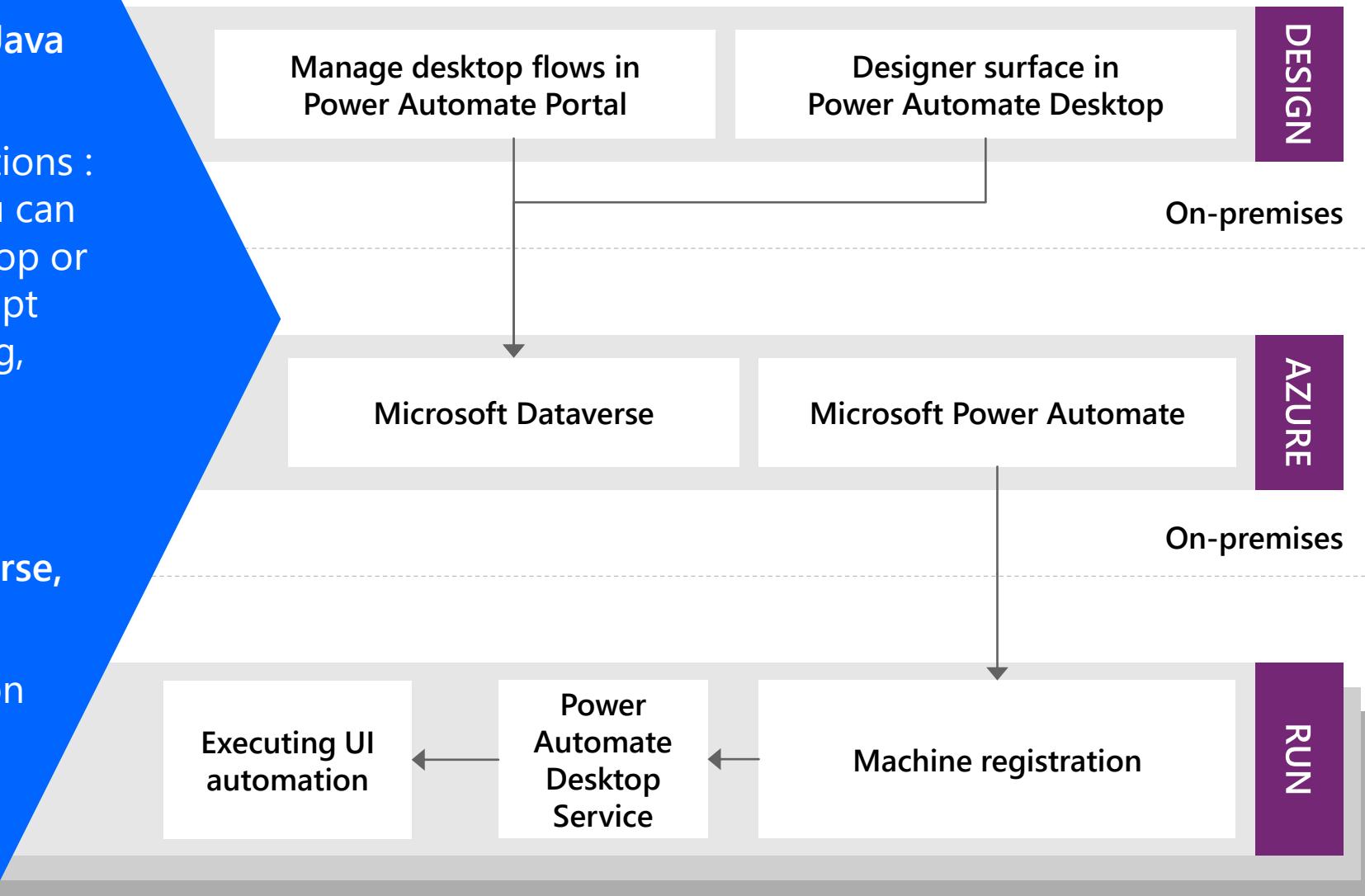
Packaging and Delivery
to Consumer

<https://aka.ms/mbas/cocacolaunited>

Power Automate Technical Architecture

Desktop flows details

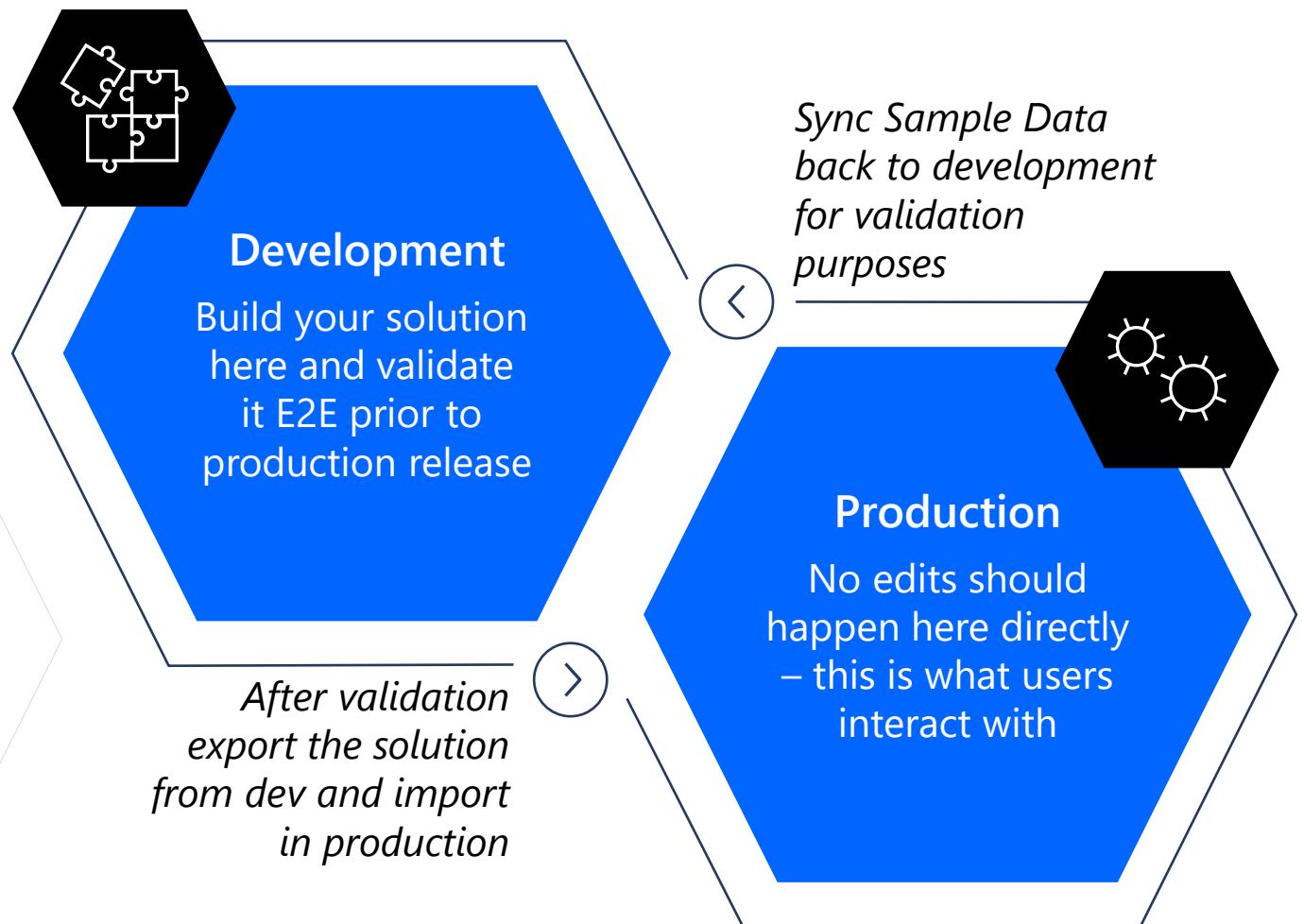
- Automate on-premises Windows, Java and Web applications.
- Windows, Java and & Web applications : With Power Automate Desktop you can get started with the intuitive Desktop or Web Recorder and extend your script with advanced cloud flow authoring, multi-layer exception handling and scripting support
- Desktop flow scripts and execution history **stored in Microsoft Dataverse, invoked by cloud flows**
- Desktop flows service enables logon and execution for **Unattended** scenarios, Machine registration provides **clustering**



Environments

Each **environment** in is a collection of components which can share lifecycle, data and administration

Changes should be tested first in a development environment before brought to production



Power Automate Environments:

Easy to create, manage, monitor



Create new environments from the Power Platform Admin Center



Select production or trial environment



Specify your region

The screenshot shows the Power Platform Admin Center interface on a laptop screen. The left sidebar has a 'Environments' section expanded, showing 'Analytics', 'Help + support', 'Data integration', 'Data gateways (preview)', 'Data policies', and 'Admin centers'. The main area is titled 'Environments' and lists one environment: 'demo company' (Type: Trial (21 days), State: Ready, Region: United States, Created on: 03/03/2020 9:). A 'Feedback' button is at the bottom right.

Environment	Type	State	Region	Created on	
demo company	...	Trial (21 days)	Ready	United States	03/03/2020 9:

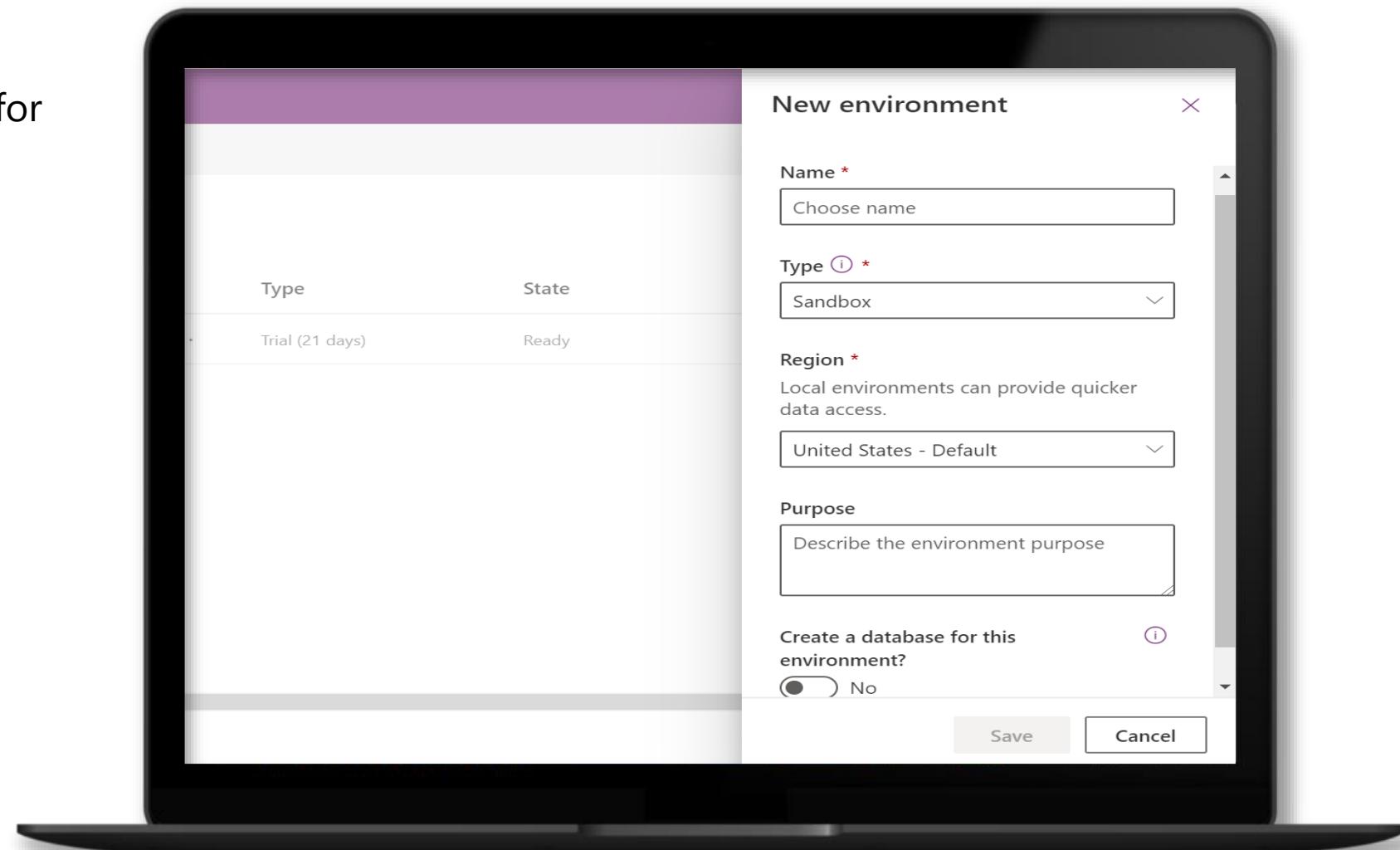
Power Automate Environments: database



Option to create a database for the environment



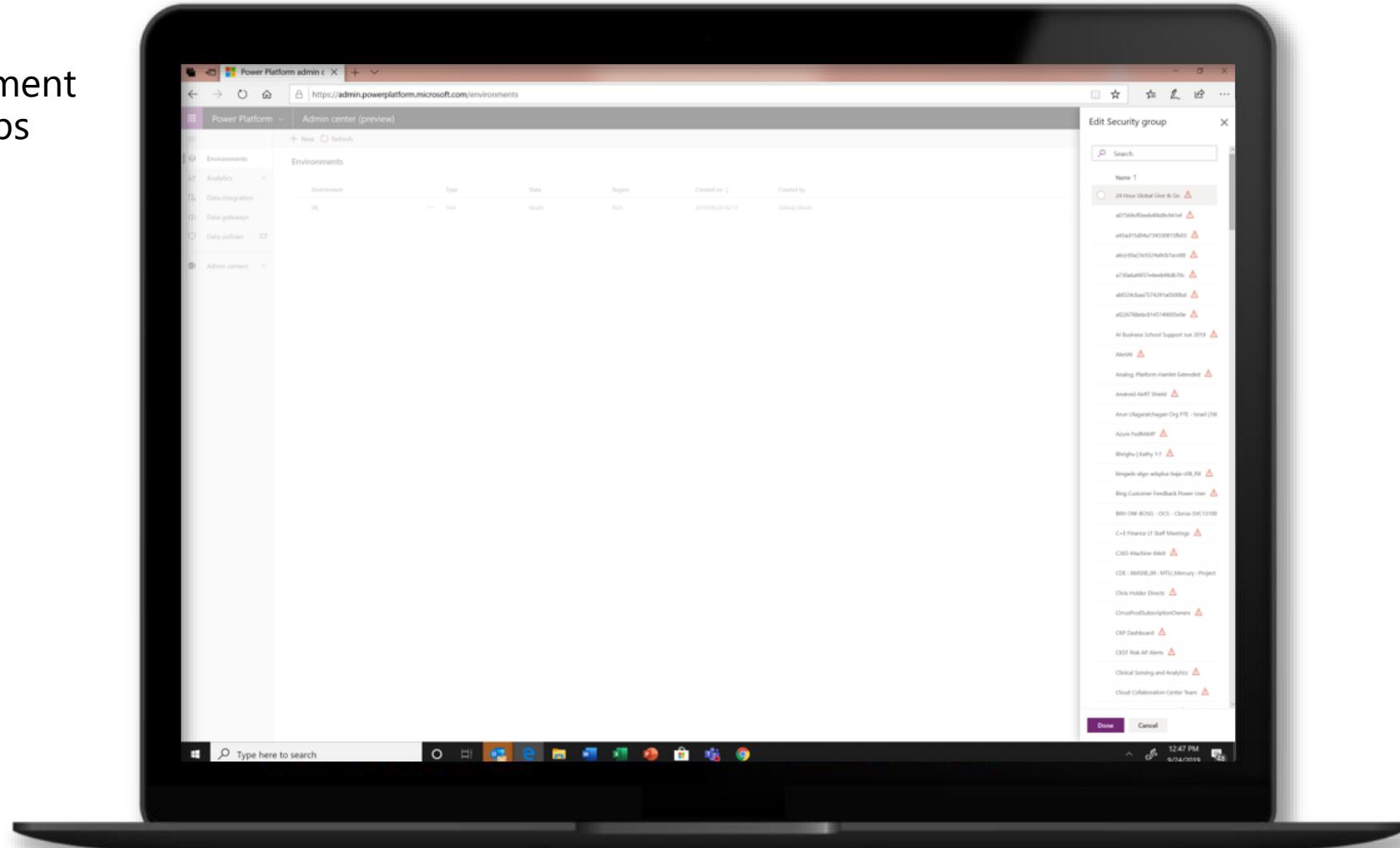
Use the Microsoft Dataverse as a data store



Power Automate Environments: Access management



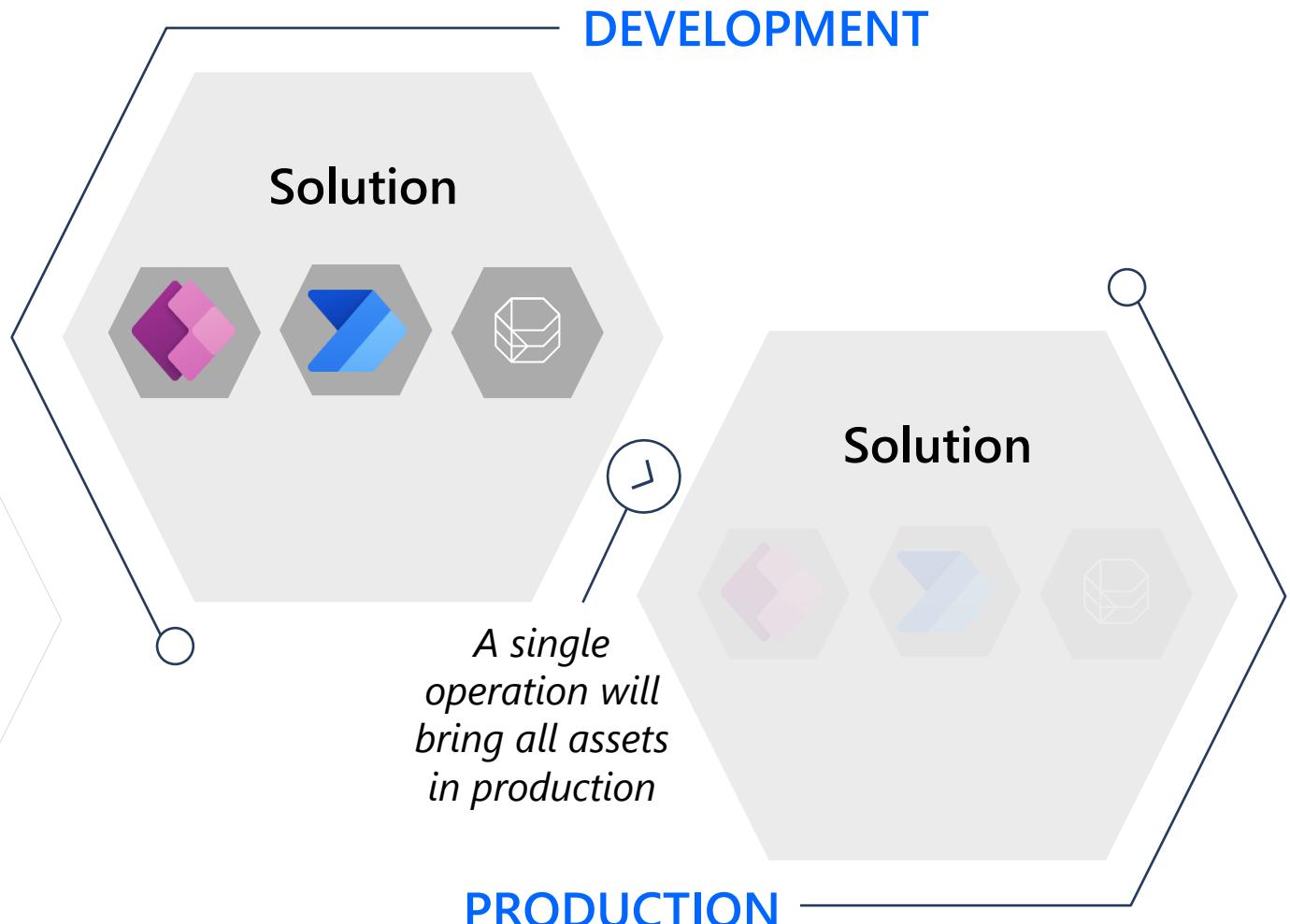
Secure access to the environment by selecting which user groups can access the environment



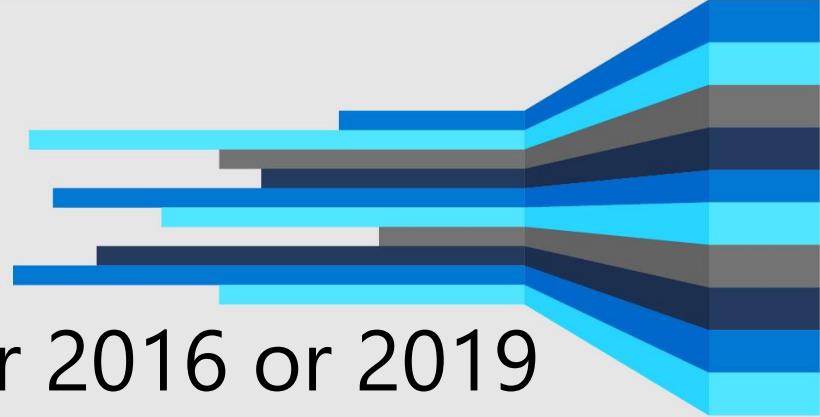
Solutions

Each **environment** is a collection of components which can share lifecycle, data and administration

Changes should be tested first in a development environment before brought to production

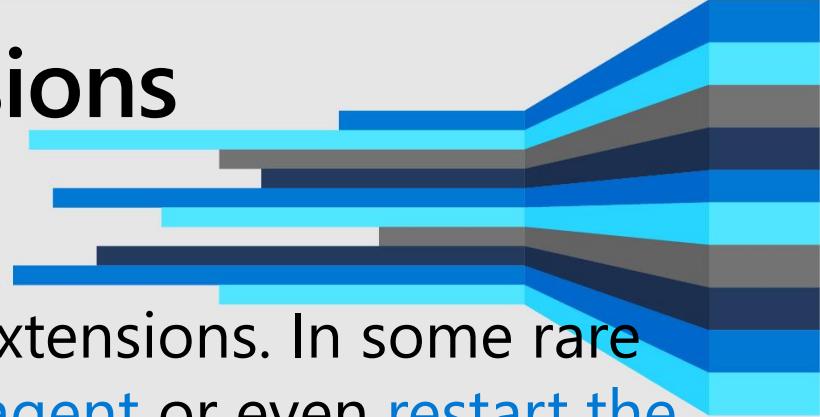


Tips & Tricks before you started



- ✓ Have a computer of Win10 or Win server 2016 or 2019 (note you cannot record through remote desktop now).
- ✓ Have .NET 4.7.2.
- ✓ Have permission to install apps on the machine.
- ✓ Have a username/password can be used to log into the machine.
- ✓ Have a browser of Edge (chromium) or Chrome installed on the machine.

Tips & Tricks: Installing Browser Extensions

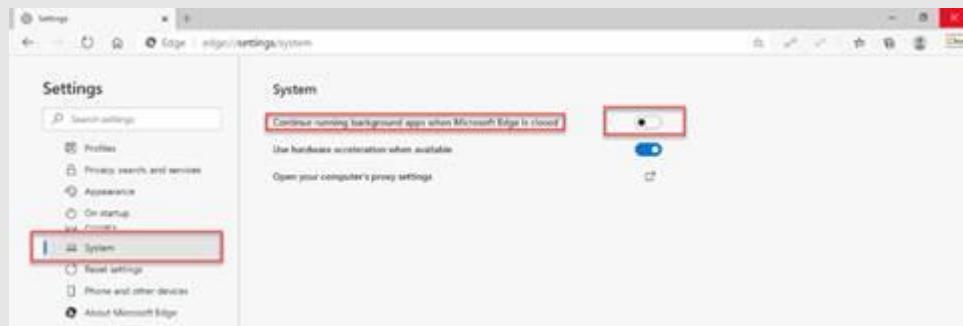


- ✓ May need to **restart browser** after installing the web extensions. In some rare cases it requires to **uninstall/reinstall the desktop flow agent** or even **restart the machine**.
- ✓ Make sure Power Automate Desktop is running (not the dark color icon in the task bar, but a white color icon).
- ✓ Double check if the web extension is **installed** and **enabled** after installing desktop flow
 - For desktop flow, you need one web extension "**Microsoft Power Automate Desktop**".
 - You don't need to uninstall then reinstall. You can upgrade directly.
- ✓ To run the desktop flow from a cloud flow, you also need machine registered and create a desktop flow connection.

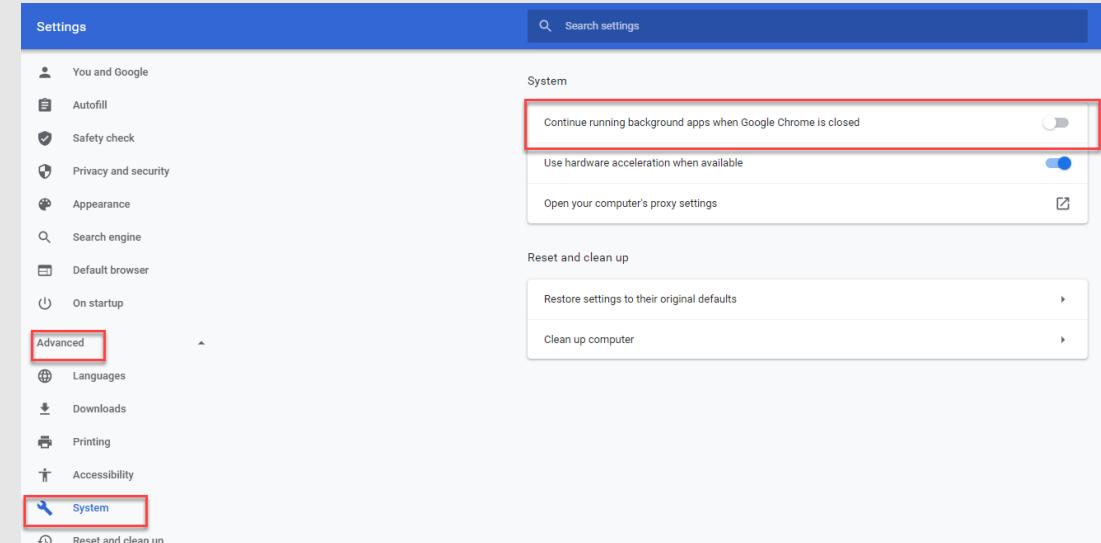
Tips & Tricks: Browser & Display Settings

- ✓ If you're experiencing difficulties to capture controls and web elements due to misalignment, make sure your display settings are supported.
<https://support.softomotive.com/support/solutions/articles/35000137070-cannot-capture-control-orange-rectangle-in-wrong-place>

- ✓ Make your browser session management (*Continue running background apps when [browser vendor] is closed*) is switched **off**
 - ✓ Microsoft Edge (Chromium)



Google Chrome



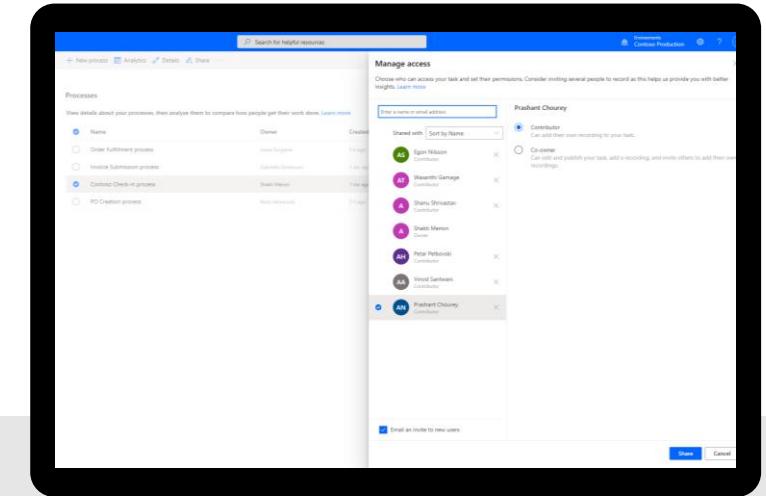
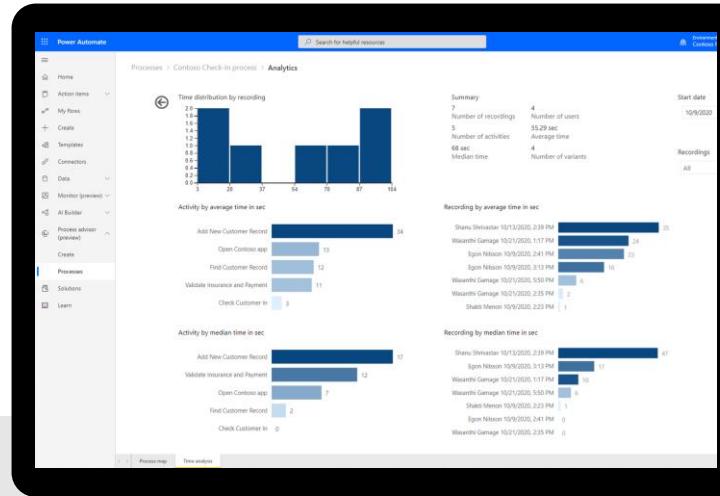
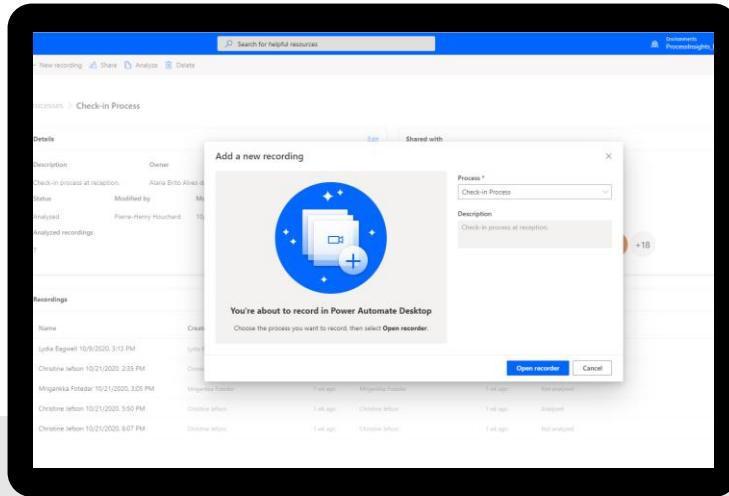
Session 2: Identify automation opportunities using Process advisor



Introducing Process advisor (Public Preview)

Introducing Process advisor

Enabling automation for everyone to optimize how they work



Get started quickly
with the intuitive interface
for capturing and recording
your tasks.

Gain deeper insights
on processes and break down
complex processes.

Discover new ways of
working and drive
collaboration.

5 easy steps to get started

Start turning processes into reality with process advisor



Create

Set up a new process and identify potential areas of opportunity for automation.



Share

Invite colleagues to collaborate and add new recordings.



Record

Record the actions either you or your colleagues take to complete the process at hand.



Annotate/Edit

Remove sensitive information, then group your actions into meaningful activities.



Analyze

Generate a process map so that you can analyze it and get insights.



Microsoft
Power Automate

Microsoft Confidential

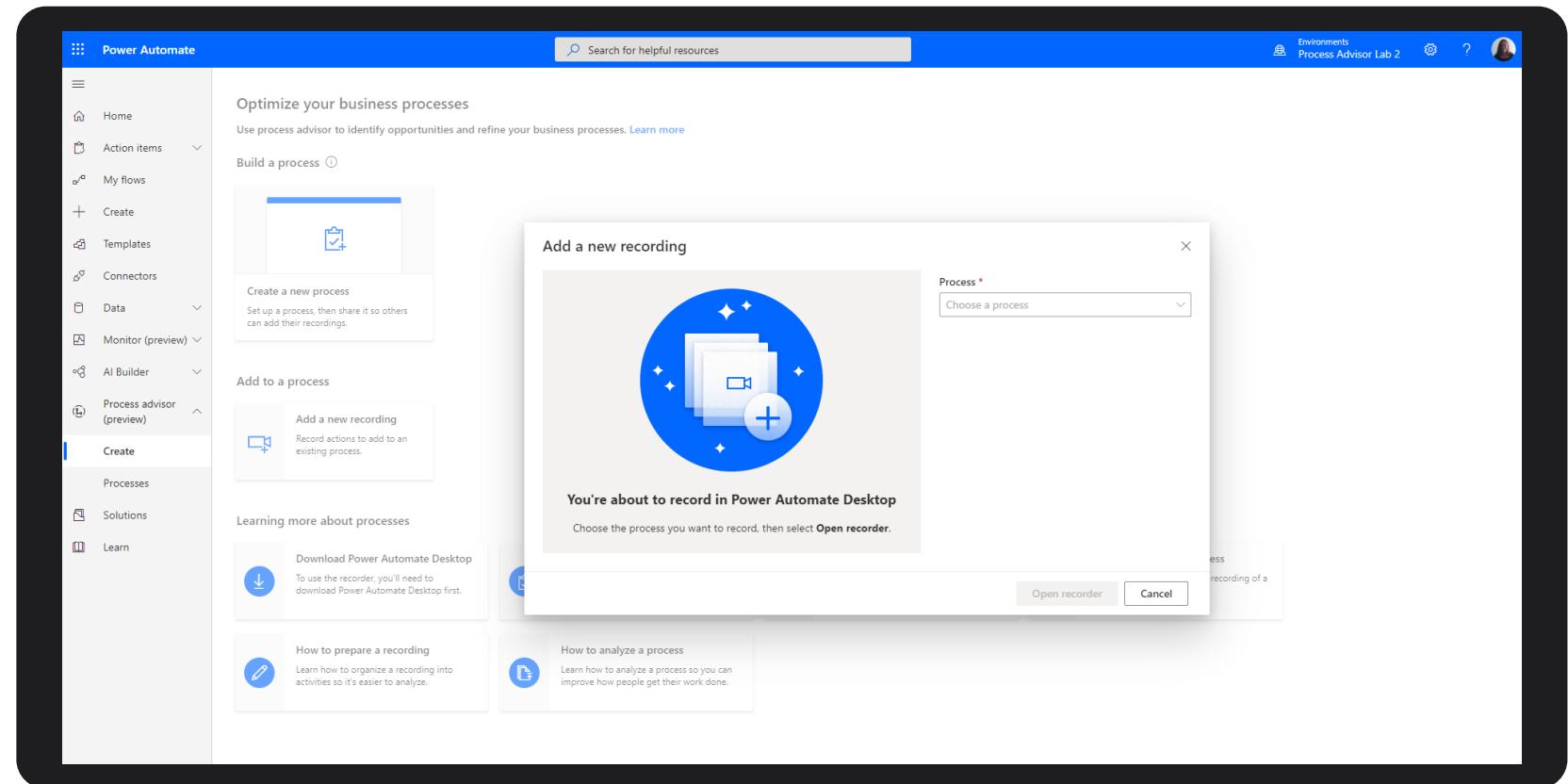
Get started quickly to understand your business tasks and processes across the company using process/task recordings



Record processes for detailed steps of any process

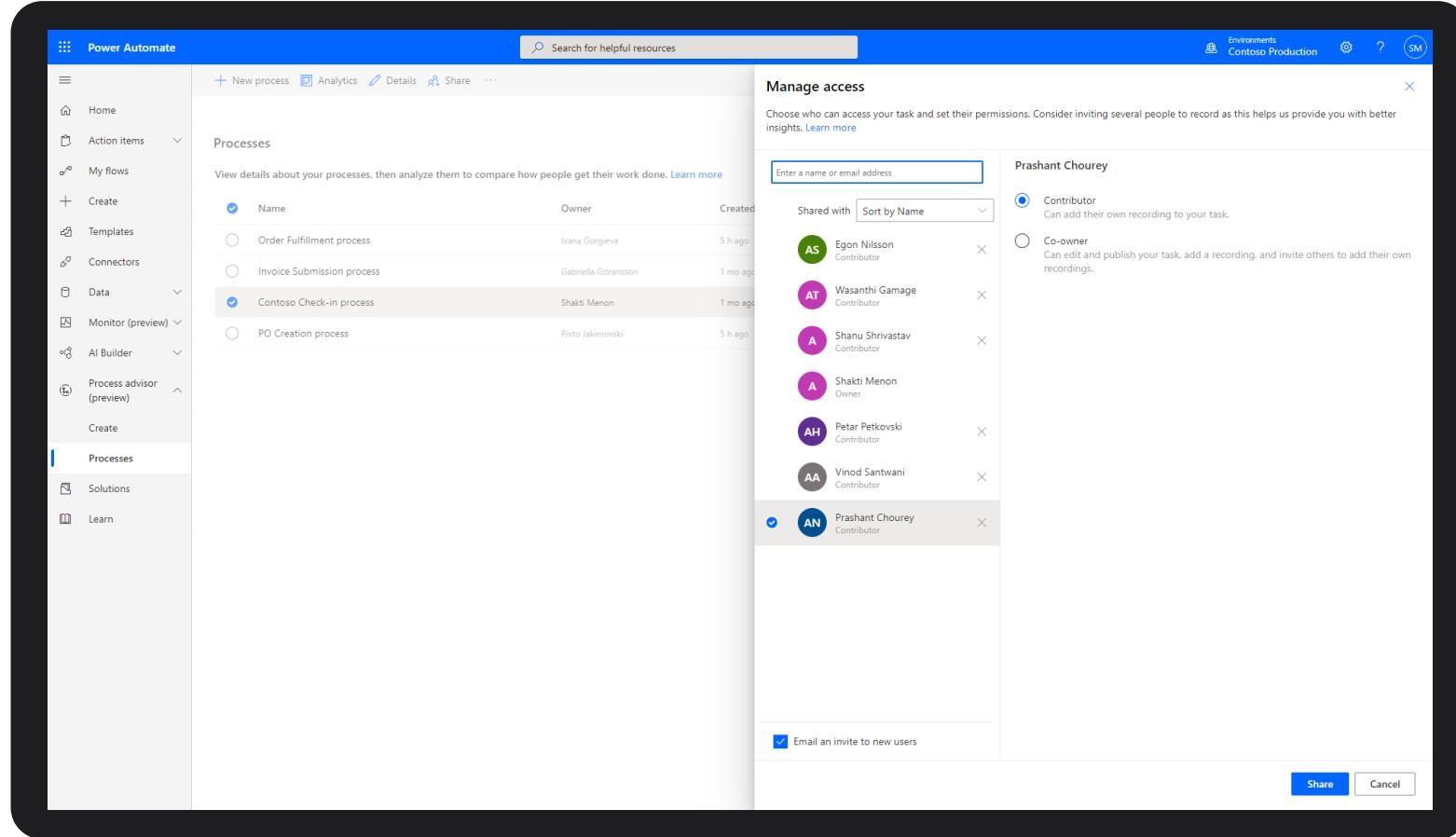


Easy to use, intuitive interface



Microsoft
Power Automate

Empower yourself and others



The screenshot shows the Microsoft Power Automate interface. On the left, the navigation bar includes Home, Action items, My flows, Create, Templates, Connectors, Data, Monitor (preview), AI Builder, Process advisor (preview), Create, Processes (selected), Solutions, and Learn. The main area displays a list of processes: Order Fulfillment process, Invoice Submission process, Contoso Check-in process (selected), and PO Creation process. The 'Manage access' dialog box is open over the process list, titled 'Manage access'. It instructs users to choose who can access their task and set their permissions. It notes that inviting several people to record helps provide better insights. A search bar at the top of the dialog box says 'Enter a name or email address'. Below it, a dropdown menu shows 'Shared with' and 'Sort by Name'. A list of users is shown, each with a profile icon, name, and role: Egon Nilsson (Contributor), Wasanthi Gamage (Contributor), Shanti Menon (Owner), Petar Petkovski (Contributor), Vinod Santwani (Contributor), and Prashant Chourey (Contributor). The 'Prashant Chourey' entry is highlighted with a blue selection bar. At the bottom of the dialog box is a checkbox for 'Email an invite to new users' and two buttons: 'Share' and 'Cancel'.

Include multiple recordings from you and your colleagues



Share processes and collaborate



Microsoft
Power Automate

Annotate your recording and remove any sensitive information



Easily group steps and keep standardized with existing groups



Manage sensitive data

Processes > Contoso Check-in process > Recordings > Preston Morales 11/29/2020, 7:41 PM

Start time: 11/29/2020, 07:43:08 PM Status: Not analyzed Steps: 8 Length: 37 second(s)

07:43:08 PM Click UI element in window Tree Item 'LegacyInvoicingApp.Models.FolderModel' in Window 'Contoso Invoicing'

07:43:17 PM Populate text field in window Edit 'TextBox' in Window 'Contoso Invoicing'; Text: 'Joe smith llc'

07:43:21 PM Populate text field in window Edit 'TextBox' 2 in Window 'Contoso Invoicing'; Text: 'Joe smith'

07:43:31 PM Populate text field in window Edit 'TextBox' 3 in Window 'Contoso Invoicing'; Text: 'joesmith@joesmith.com'

07:43:34 PM Click UI element in window Window 'Contoso Invoicing'

07:43:39 PM Click UI element in window Image 'Image' in Window 'Contoso Invoicing'

07:43:41 PM Click UI element in window Image 'Image' 2 in Window 'Contoso Invoicing'

07:43:45 PM Press button in window Power Automate Recorder - 1 running window in Quick Launch Bar

Group name *

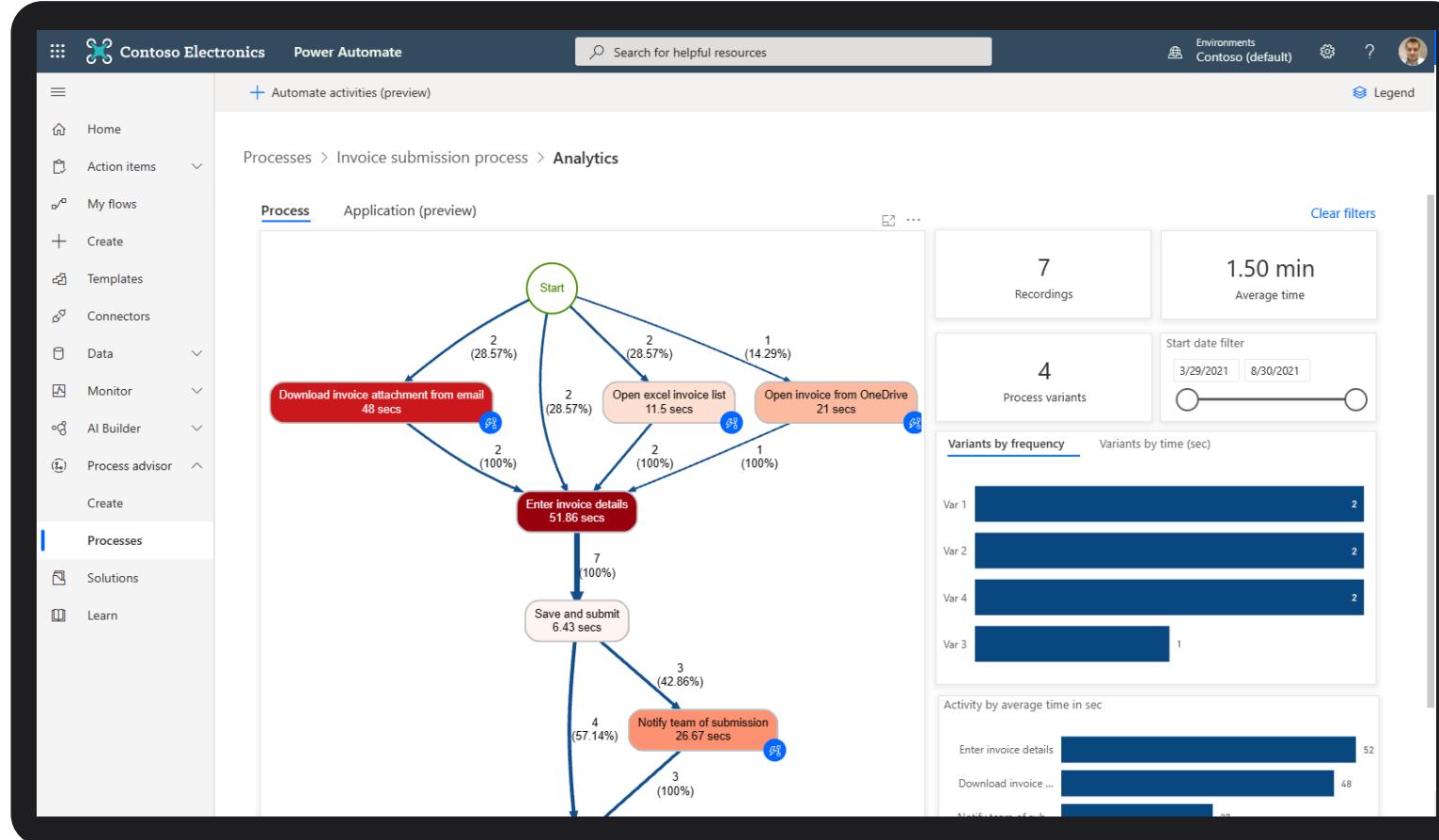
Check In Customer

Quick tips

- Select a published group, or create a new one.
- Try to create a simple and meaningful name, such as "Download invoice attachment" or "Enter invoice details".
- To see a group on the process map, publish the process first.
- Deleting a group will only remove it from this recording.



Get rich, process maps and learn the variations across the process



Identify inefficiencies and areas for potential automation

Use default analytics to gain insights

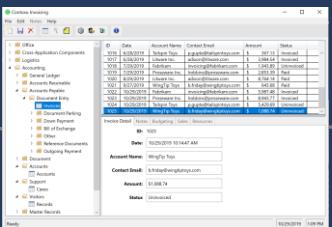
View the end-to-end visualization



Lab 2: Identify automation opportunities using Process advisor (45 minutes)



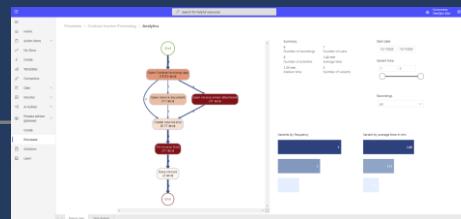
- Record Contoso Invoicing interactions
- Edit recording transcripts and add groups
- Analyze process performance, identify bottlenecks and gain insights
- Prepare for automation



Contoso Invoicing
Legacy Application



Power Automate
Recording



Process advisor
Analytics

Session 3:

Create your first Power Automate desktop flow

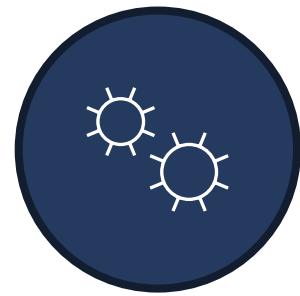
Desktop flows: Automating Apps without APIs for our Modern World



Record the Task

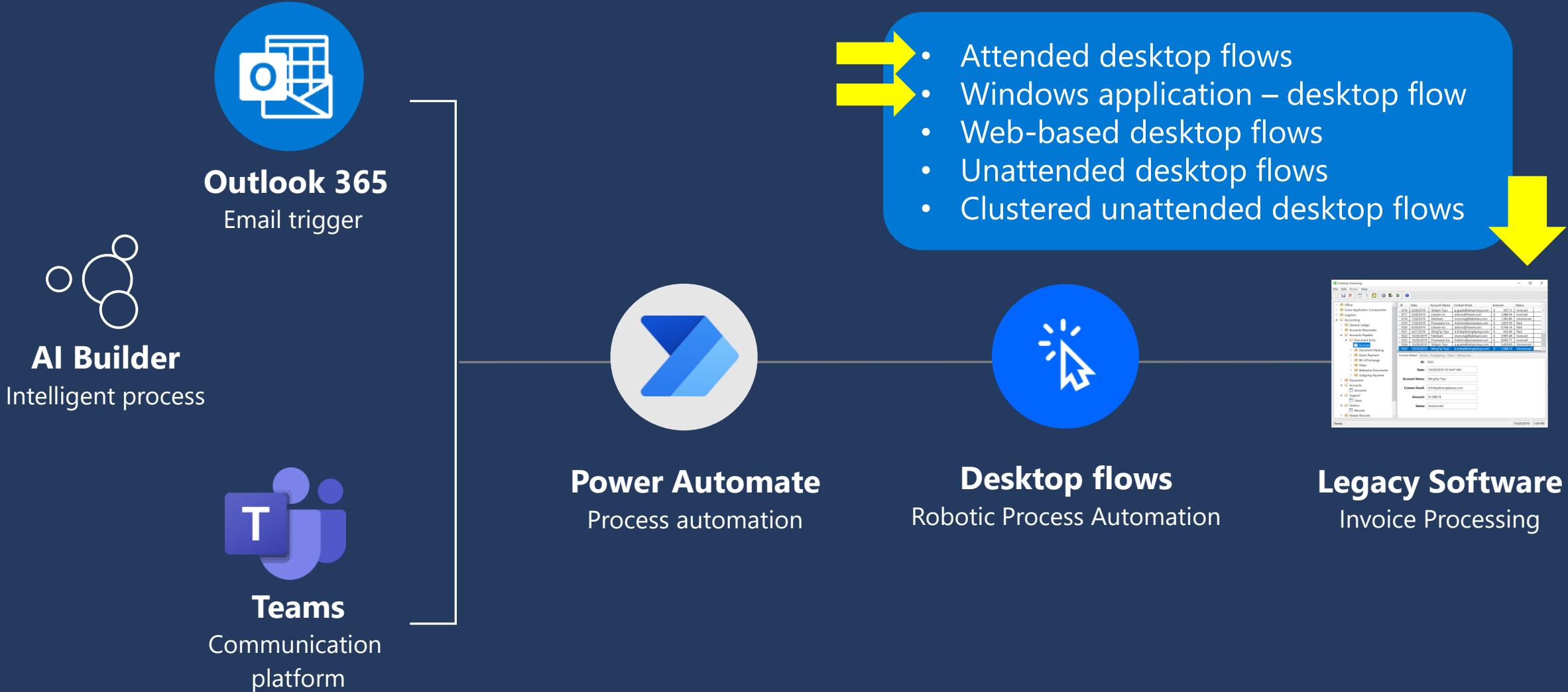


Test and Validate



Playback to
execute the Task

Lab 3: Create your First Power Automate desktop flow (25 minutes)



Student's demo lab 3 for creating your first desktop flow

Edit recorded actions



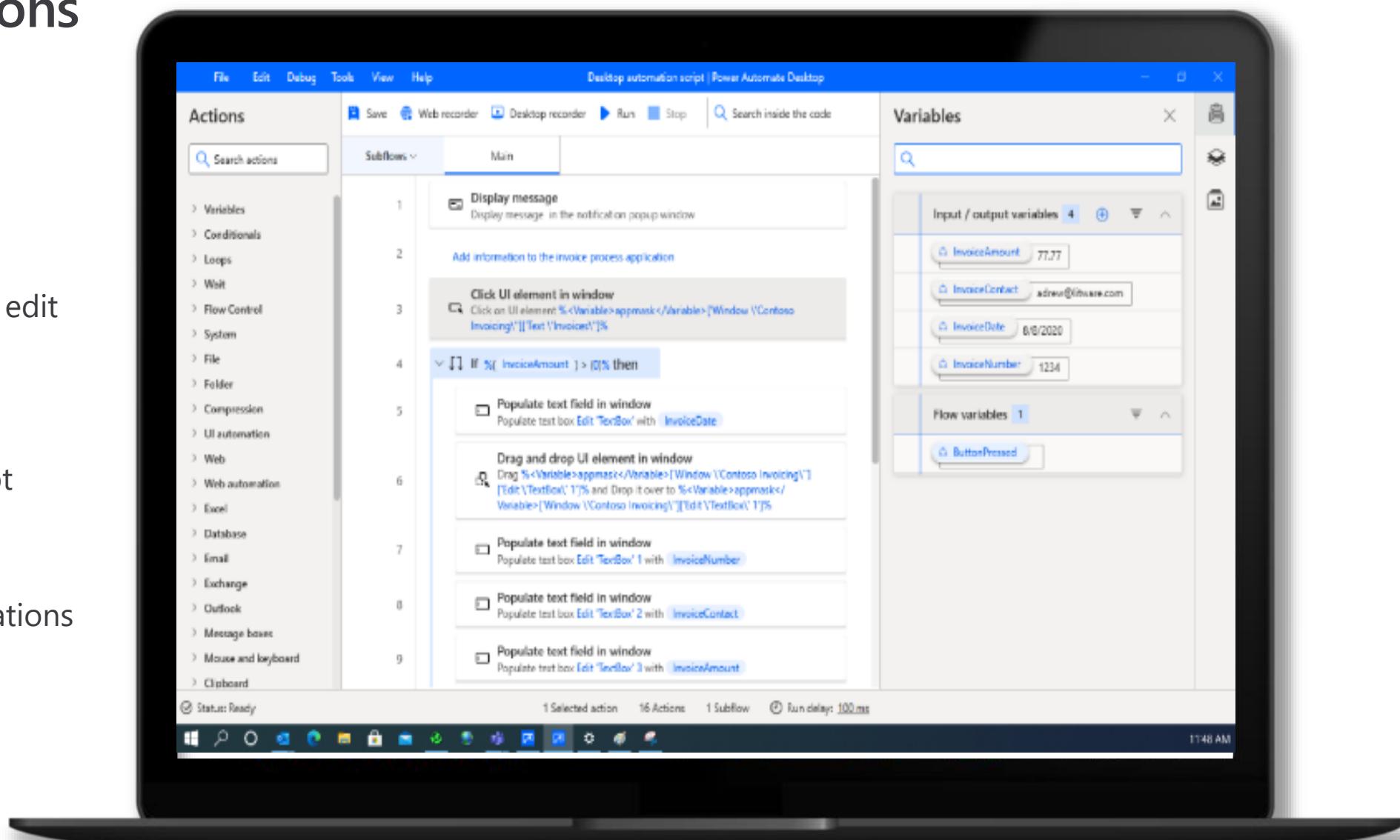
Easy to review and edit



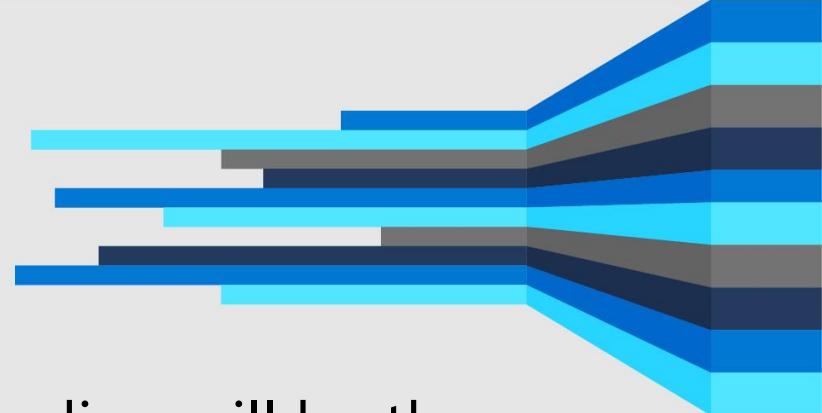
Detailed screenshot



Advance customizations
are available

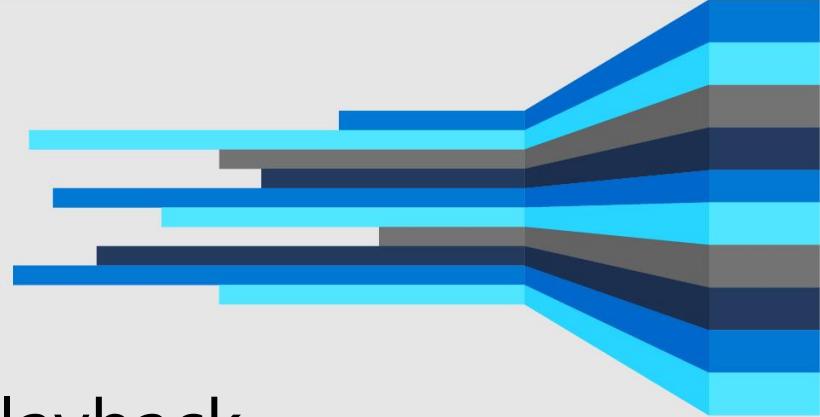


Lab 3 Review: Tips & Tricks Recording



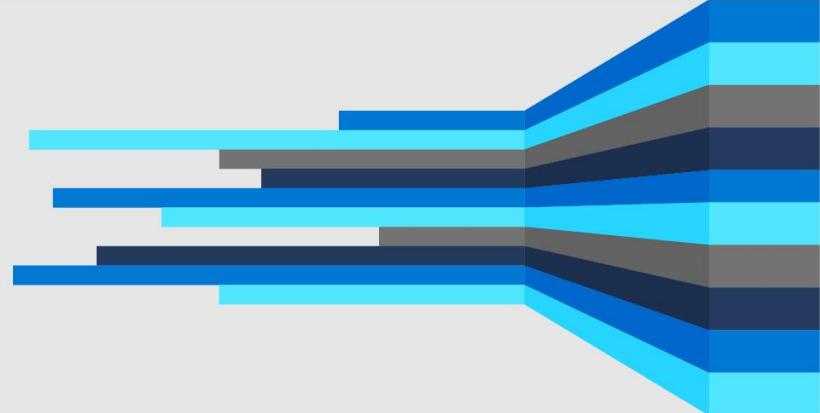
- ✓ Ensure you are using the right environment.
- ✓ Ensure that the keyboard layouts you use during recording will be the same as for playback.
- ✓ Use shortcuts instead of clicking, for instance copy paste with `ctrl + c` & `ctrl + v` instead of right click copy.
- ✓ Use “enter static text” if you are working with strings for better readability.
- ✓ When you insert text into a field that already has text inside, you should click `ctrl + A` and backspace to clear up the field first.
- ✓ Playback uses accessibility by default, can fallback to coordinate as well if you turn it on:
 - Use a standard resolution and scale setting that across your recording and playback devices.
 - Maximize the application window that you are recording.
 - Finish the recording in one monitor if possible.

Lab 3 Review: Tips & Tricks Playback



- ✓ Do not use the keyboard and mouse during playback.
- ✓ Try to adjust your app to have the same initial state as during recording time.
- ✓ Use the same keyboard and locale setting as during recording time.
- ✓ If you are using coordinate offset fallback:
 - Current coordinate-based fallback is conservative and ensures the control is same as what was recorded, including the size.
 - Use the same resolution and scale setting as recording time.
 - Maximize the app size to minimize disruption.

Lab 3 Review Tips & Tricks – Edit and optimize your desktop flow



- ✓ Adjust the wait time in the designer. By default the script waits as long as the recording process took.
- ✓ Be default, desktop flows launches applications. You can edit the script to change if you want to launch or attach the app.
- ✓ Enable coordinate-based playback if you know your app is safe to be used in that mode.
- ✓ Add validation and error handling using advanced editor.

Agenda (5th May)

- 10:00 – Overview
- 10:10– Lab 4 Input Output Parameters
- 10:50 – Lab 5 Trigger Desktop Flows
- 11:10 – Lab 6 Integration with Outlook
- 11:40 – Lab 7 AI Builder
- 12:00 - Closing

Rules and Housekeeping



Please do not share the meeting invite URL with anybody



This is an action-packed agenda, so please stay on mute



Please ask questions on the chat and be patient when waiting for a response

Power Platform Events from Microsoft UK

RPA In A Day

Power Automate Desktop - Train the Partner event

If you're a Power Platform, Dynamics, Modern Work or Azure partner and you're looking to expand your practice to include automation, or indeed if you're already an automation partner considering Power Automate for Desktop, this **free** event the event for you.

The hands-on, step-by-step lab exercises will guide you through building a modern end to end enterprise-style RPA scenario to process incoming invoices. Whilst working through the labs, you will use Power Automate capabilities such as: Power Automate Desktop, API connectors to automate a business process and form processing models developed in AI Builder.

Join us
10 am – 12 pm
4th, 5th & 6th May

aka.ms/RPAInADay_May

Session 4: Use Inputs and Outputs in desktop flows

Use Inputs to pass data in



Can be added from either web or recorder



Easy to manage



Support multiple types including sensitive text

The screenshot shows the 'RPA in a Day | Power Automate Desktop (Preview)' application interface. On the left, a sidebar lists various action categories such as Variables, Conditionals, Loops, Wait, Flow Control, System, File, Folder, Compression, UI automation, Web, Web automation, Excel, Database, Email, Exchange, Outlook, Message boxes, Mouse and keyboard, Clipboard, Text, Datetime, CMD session, and Terminal emulation. The main workspace displays a sequence of numbered actions:

- 1 Start of autogenerated actions using the web recorder
- 2 Launch new Internet Explorer
Launch Internet Explorer, navigate to '<https://sprintcs.quickbase.com/db/main?2=SignIn&nexturl=https%3A%2F%2Fsprintcs.quickbase.com%2Fdb%2Fmain%3Fa%3Dmyqb&rc=psi>' and store the instance into 'Browser'
- 3 Populate text Field on web page
Populate text field `input` with "gtmtempbhole@sprint.com" using emulated typingwithout using emulated typing
- 4 Populate text Field on web page
Populate text field `input 1` with "*****8" using emulated typingwithout using emulated typing
- 5 Click link on web page
Click on `span 1` of web page
- 6 Click link on web page
Click on `span 2` of web page
- 7 Click link on web page
Click on `div 1` of web page
- 8 Populate text Field on web page
Populate text field `input 2` with "1234" using emulated typingwithout using emulated typing
- 9 Set drop-down list value on web page
Select options 'CANCELED' in `select`
- 10 Populate text Field on web page
Populate text field `input 3` with "PR1234" using emulated

The 'Variables' pane on the right shows three input/output variables: `emailAddress`, `ID`, and `userName`. It also shows one flow variable named `Browser`.

Use Outputs to pass data out



Added at recording time



Easy to view and manage



Value can be reused immediately
in current or future recordings

The screenshot shows the Power Automate Desktop (Preview) interface. On the left, there's a sidebar titled "Actions" with a search bar and a list of categories: Variables, Conditionals, Loops, Wait, Flow Control, System, File, Folder, Compression, UI automation, Web, Web automation, Excel, Database, Email, Exchange, Outlook, Message boxes, Mouse and keyboard, Clipboard, Text, Datetime, CMD session, and Terminal emulation. The main area displays a flow with 10 steps:

- Start of autogenerated actions using the web recorder
- Launch new Internet Explorer
Launch Internet Explorer, navigate to "<https://sprintscs.quickbase.com/db/main?a=SignIn&nexturl=https%3A%2F%2Fsprintscs.quickbase.com%2Fdb%2Fmain%3Fa%3Dmyqb&rc=psi>" and store the instance into **Browser**
- Populate text Field on web page
Populate text field **input** with "gtmtempbmodel@sprint.com" using emulated typing without using emulated typing
- Populate text Field on web page
Populate text field **input 1** with "*****&" using emulated typing without using emulated typing
- Click link on web page
Click on **span 1** of web page
- Click link on web page
Click on **span 2** of web page
- Click link on web page
Click on **div 1** of web page
- Populate text Field on web page
Populate text field **input 2** with "1234" using emulated typing without using emulated typing
- Set drop-down list value on web page
Select options 'CANCELED' in **select**
- Populate text Field on web page
Populate text field **input 3** with "PR1234" using emulated typing

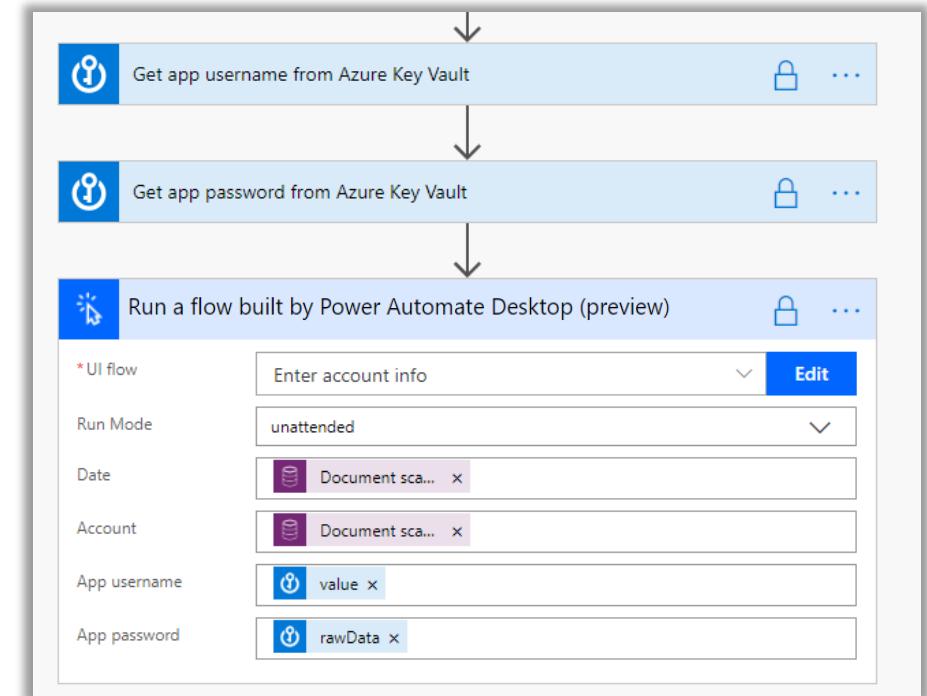
The "Variables" pane on the right shows three input/output variables: **emailAddress**, **ID**, and **userName**. It also lists one flow variable: **Browser**. The bottom status bar indicates 0 Selected actions, 36 Actions, 1 Subflow, and a Run delay of 100 ms.

Why use inputs/outputs?

Used to pass parameters from/to a cloud flow

The screenshot shows the Power Automate Desktop flow editor. On the left, a list of steps in the 'Main' flow includes: 'Run application' (running 'C:\Program Files (x86)\Contoso, Inc\Contoso Invoicing\Legacy\InvoicingApp.exe'), 'Start of autogenerated actions using the desktop recorder', 'Click UI element in window' (clicking 'Text: 'Invoices''), 'Click UI element in window' (clicking 'Image: 'Image'), 'Populate text field in window' (populating 'Edit TextBox' with 'WingTip Toys'), 'Populate text field in window' (populating 'Edit TextBox' 1 with 'b.friday@wingtiptoys.com'), 'Populate text field in window' (populating 'Edit TextBox' 2 with '\$500'), and 'Set drop-down list value in window' (selecting 'Invoiced' in 'Combo Box ComboBox'). On the right, a 'Variables' panel lists 'Input / output variables' (Account: WingTip Toys, Amount: \$500, Contact: b.friday@wingtiptoys.com, InvoiceID) and 'Flow variables' (AppProcessId, AttributeValue).

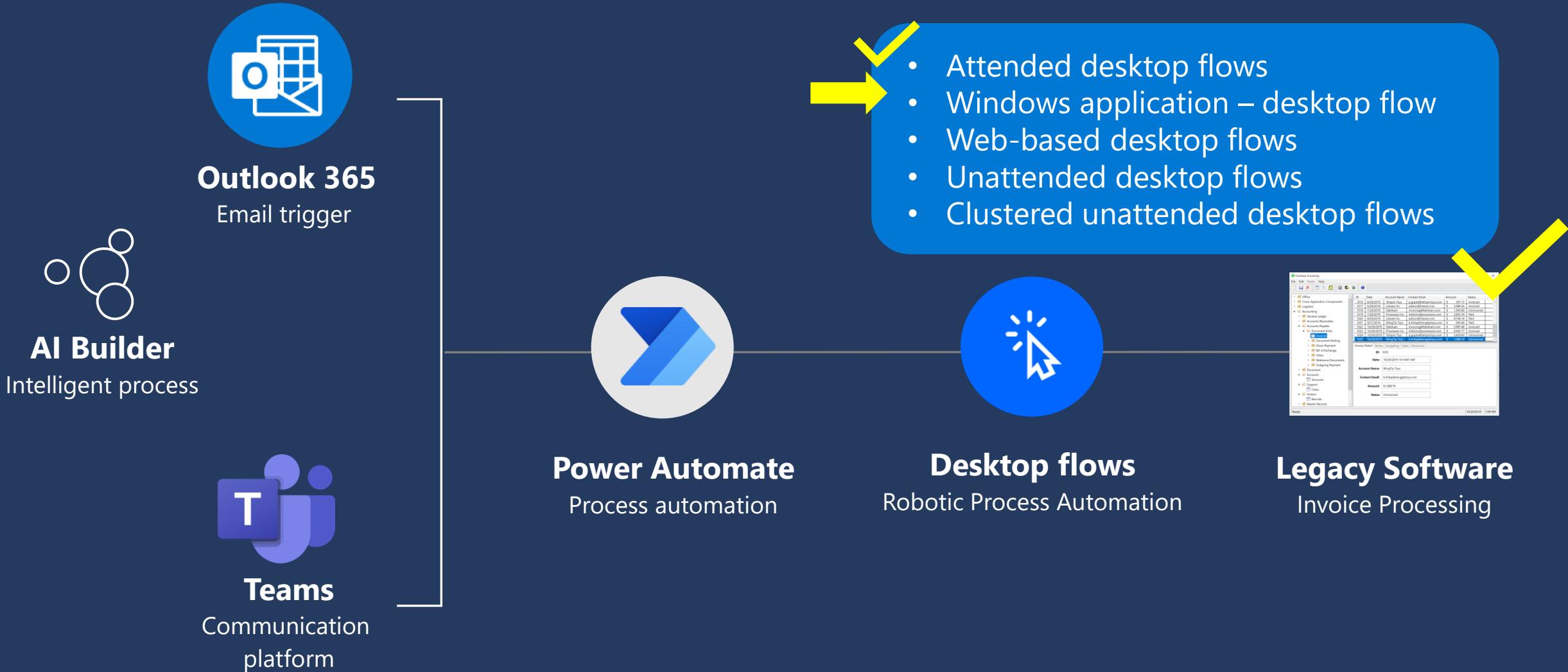
Define inputs/outputs in desktop flows



Bind them in the cloud flow that runs the desktop flow

Lab 4: Use Input and Output Parameters

(25 minutes)



Student's demo of lab 4 using input and output

Session 5: Use desktop flow connector in Power Automate through gateway and connection

What is a cloud flow

- A cloud service that allow you to automate your business process

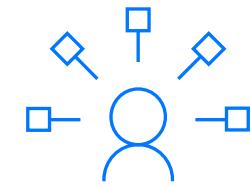
What makes a cloud flow



Trigger



Action



Conditional Logic

Trigger

Three Types of Triggers



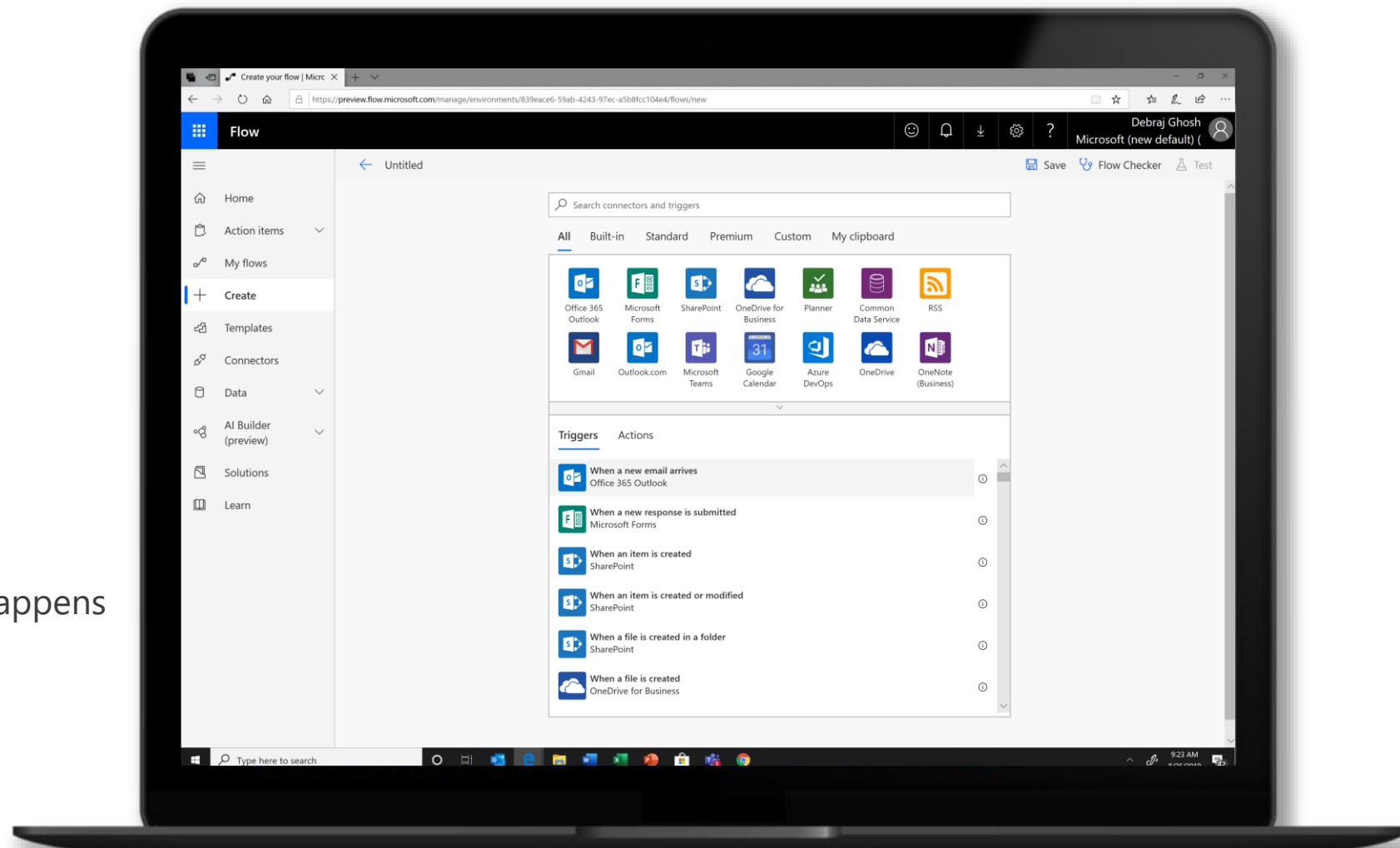
Manual Action



Run on a Schedule



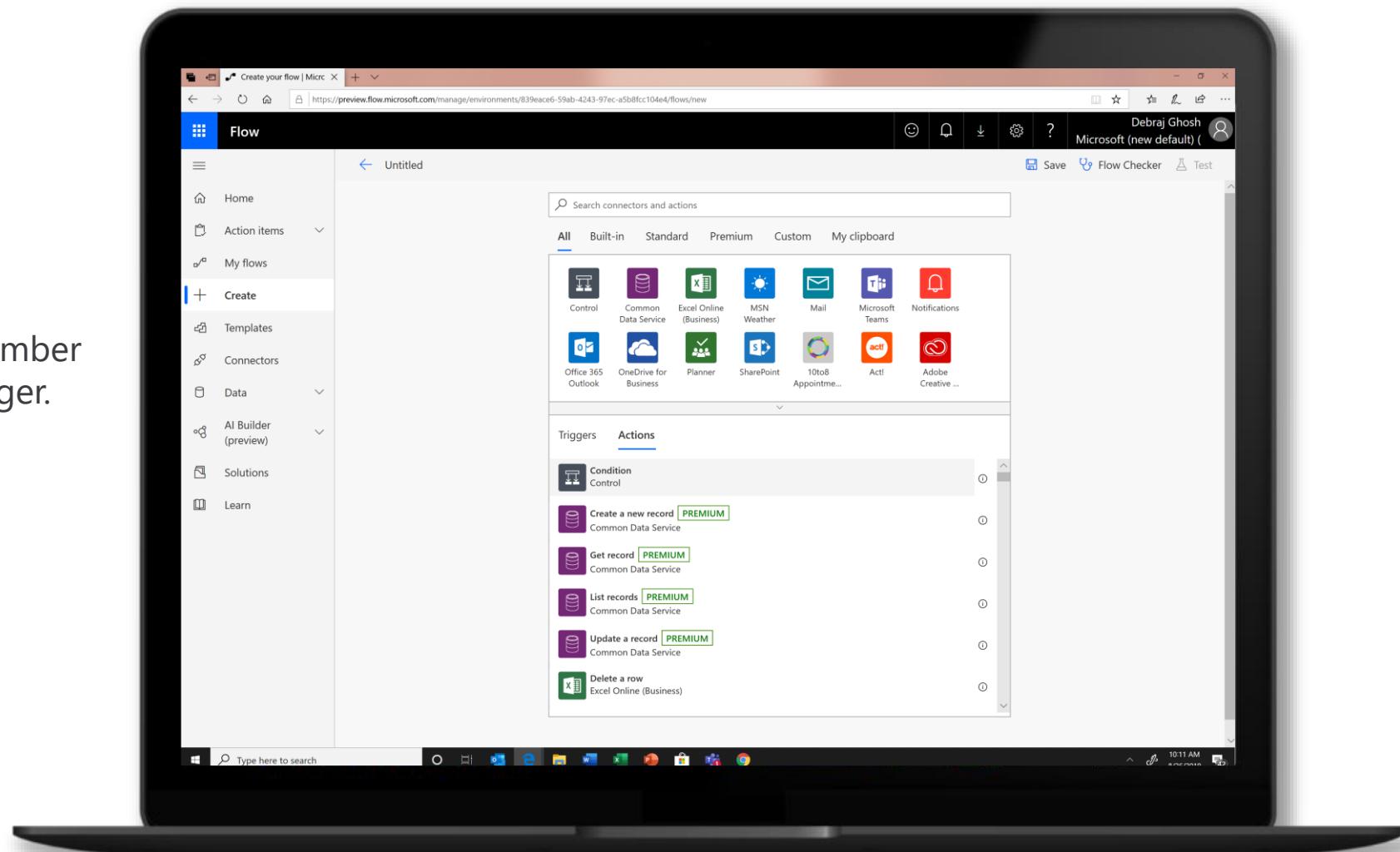
Run based on an event that happens
in a cloud or on-prem service



Action



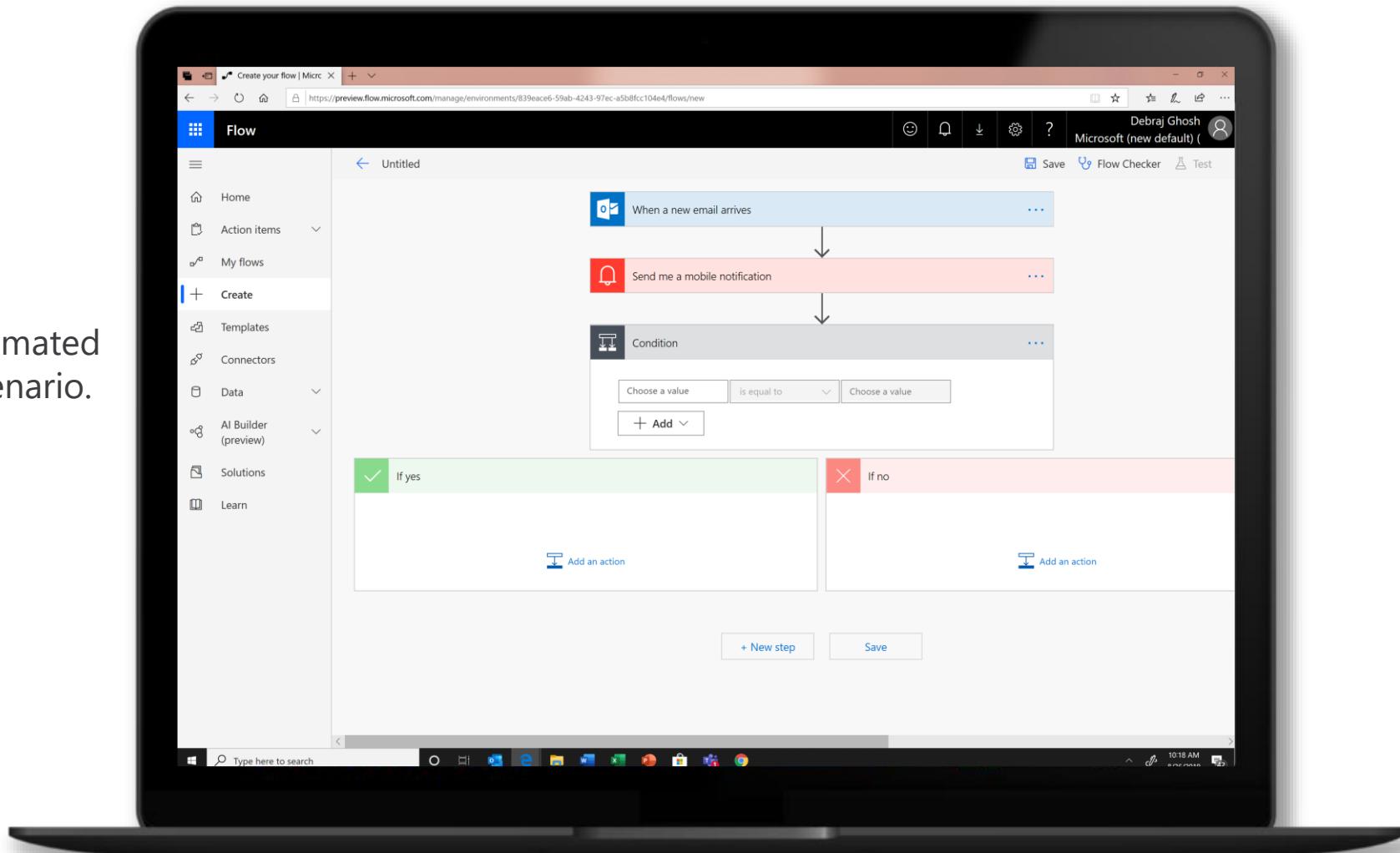
A cloud flow 'Action' is any number of steps that run after the trigger.



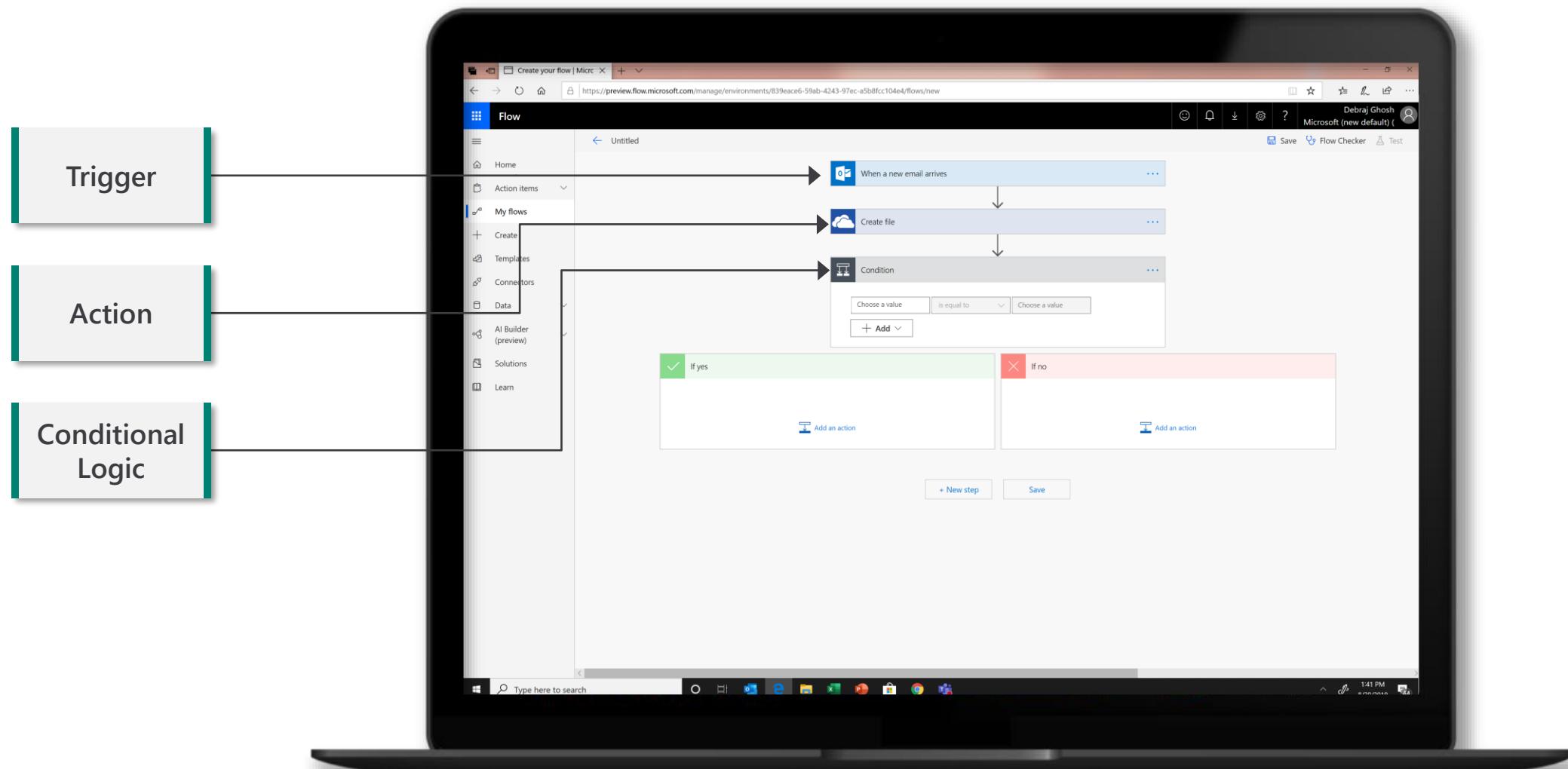
Conditional Logic



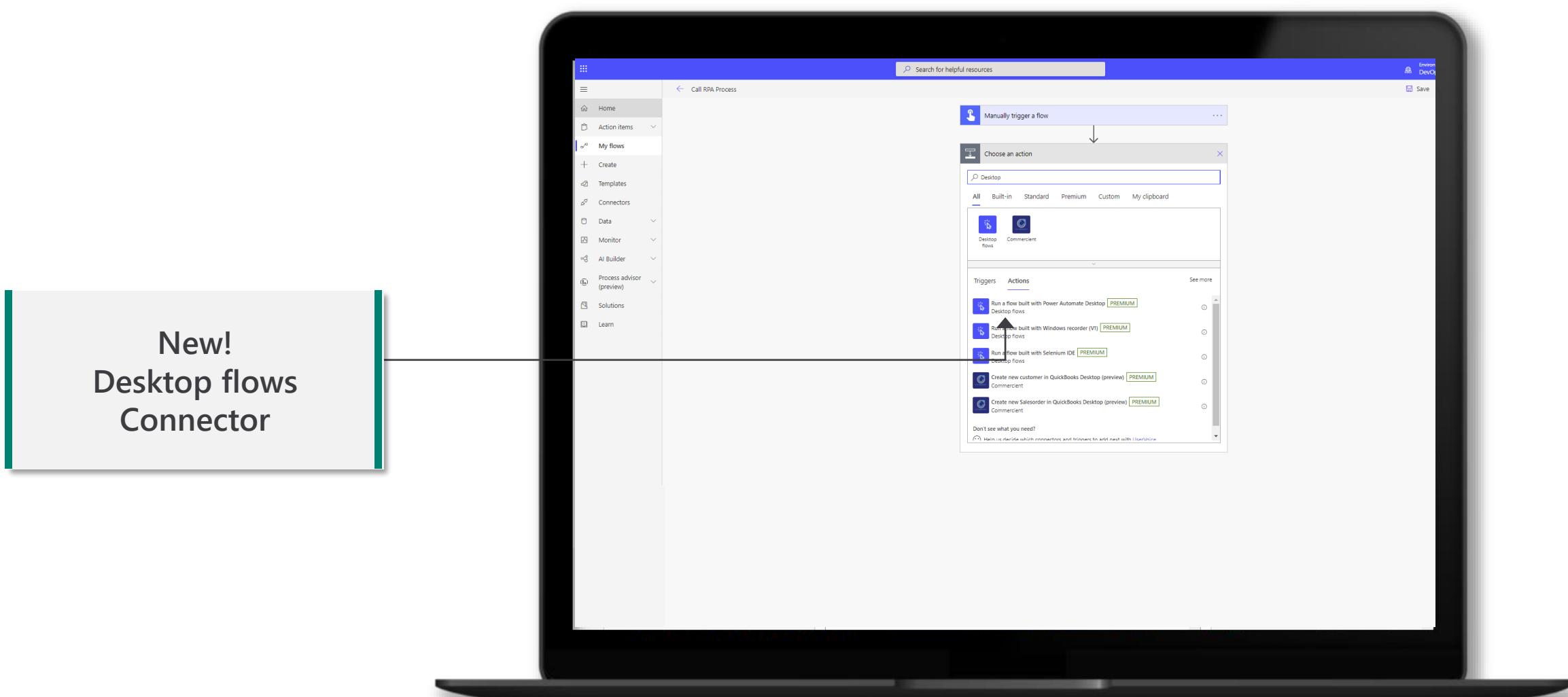
Conditional logic enables automated decisions based on a given scenario.



These building blocks make a Power Automate cloud flow



The new desktop flows Connector to enable RPA



Machine registration



Allows cloud flow to call machines directly, without on-premises data gateways



Allows cloud flows and other services to run tasks on local machine

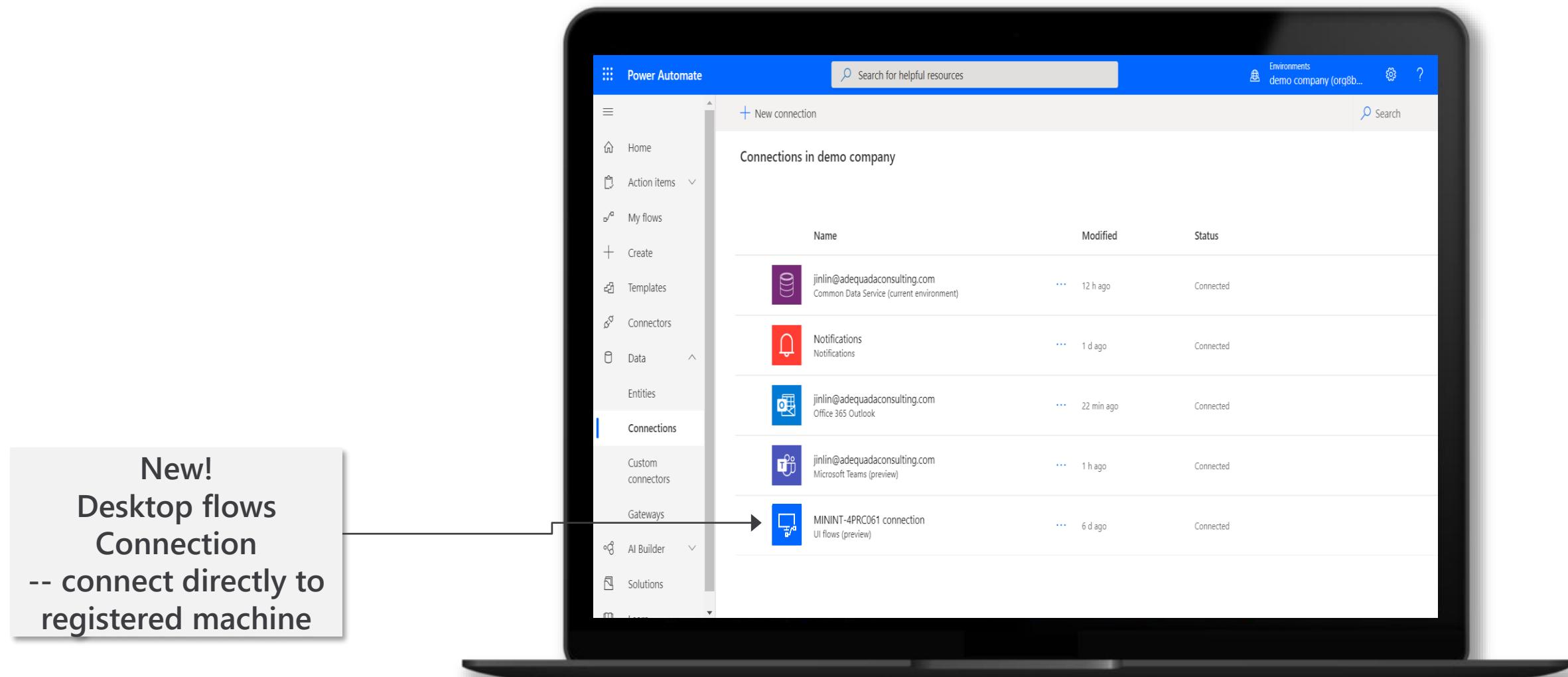


Once registered, can be managed from the cloud

The screenshot shows a Microsoft Power Automate interface titled 'Power Automate'. On the left, there's a navigation sidebar with options like Home, Action items, My flows, Create, Templates, Connectors, Data, Monitor, Cloud flow activity, Desktop flow runs, Desktop flow queues, and Machines. The 'Machines' option is selected. The main area is titled 'Machines' and contains a table with the following data:

Machine name	Description	Group	Status	Flows running	Flows queued	Access	Owner
High-density device	—	—	Busy	3	2	Owner	Carlos Slattery
IBMKT-HHTB2	Very long description of a machine that is...	IBM machines group	Online	0	—	Co-owner	Allan Munger
IBMKT-HHTB24	—	IBM machines group	Busy	1	—	Co-owner	Robert Tolbert
IBMKT-HHTB3	This is a very long machine description rela...	IBM machines group	Busy	2	—	Co-owner	Henry Brill
IBMKT-HHTB5	This is a long machine description that give...	IBM machines group	Online	1	—	Co-owner	Katri Ahokas
MININT-4HCA	This is a machine description	SAP machines group	Busy	1	—	Co-owner	Johnie McConnell
MININT-4HCB	This is a long machine description that give...	SAP machines group	Online	0	—	Co-owner	Elvia Atkins
MININT-4HCC	—	SAP machines group	Busy	2	—	Co-owner	Amanda Brady
MININT-4HCD	—	SAP machines group	Busy	1	—	Owner	Carole Poland
MININT-4HCS	Description of a machine named MININT-4...	—	Offline	0	3	Owner	Allan Munger
My network machine	This is a machine description	—	Busy	1	4	Co-owner	Kat Larsson
My other machine	This is a long machine description that give...	—	Available	0	5	Owner	Johnie McConnell

Desktop flows Connection – allow desktop flow to call registered machines directly



Integrate desktop flows into a complete E2E cloud flow



Desktop flows



**Seamlessly integrate
UI automation with
API based automation**

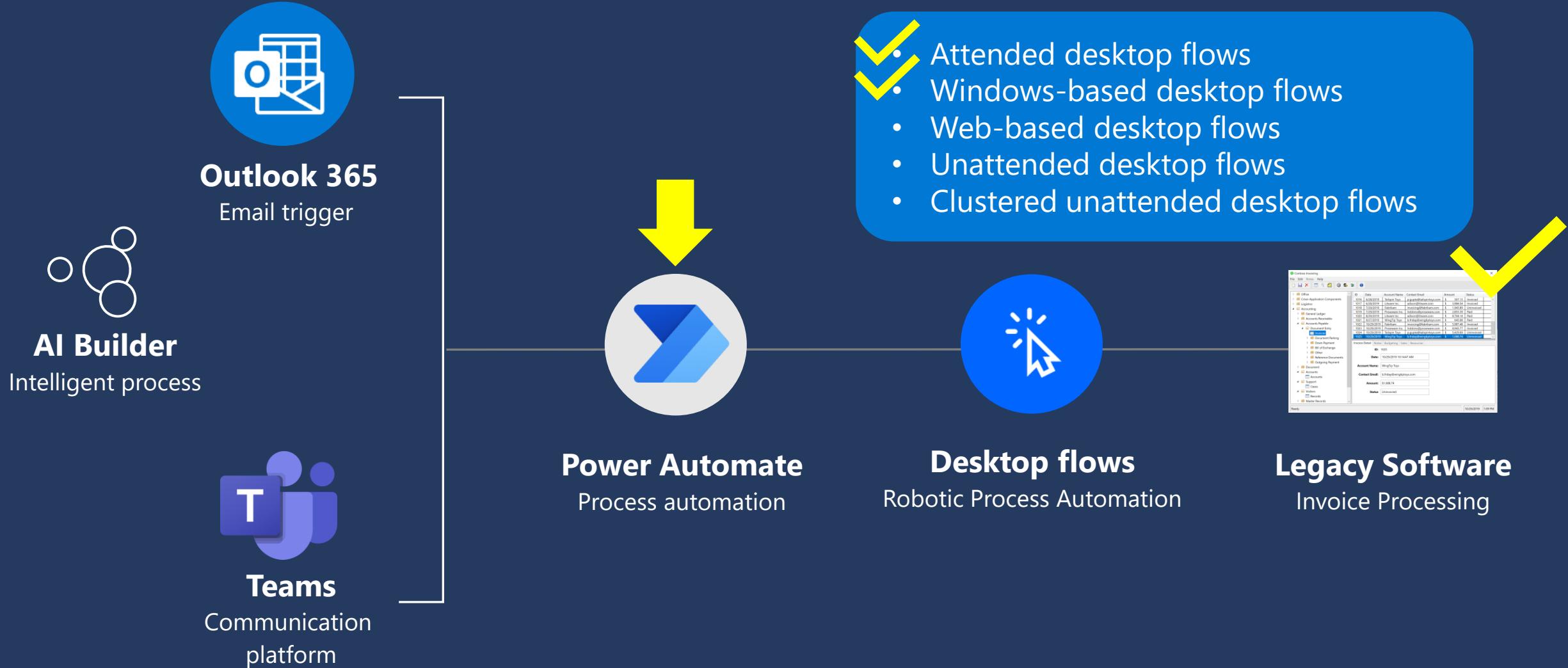
Use Desktop flows with Cloud flows

Automate with dynamic values

Record step-by-step UI actions

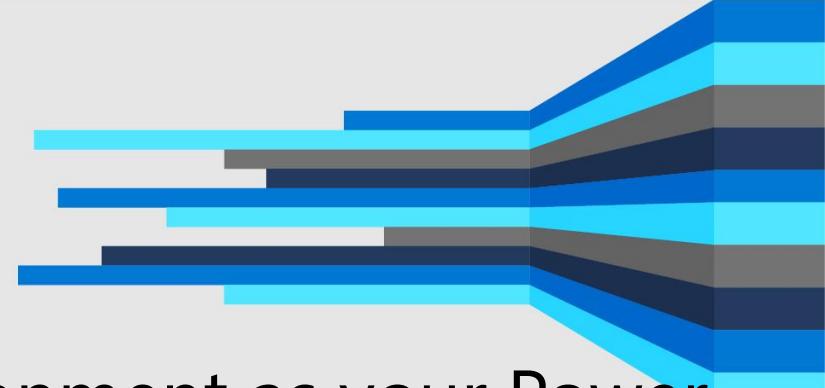
Replay and test actions

Lab 5: Integrate cloud flows (55 minutes)



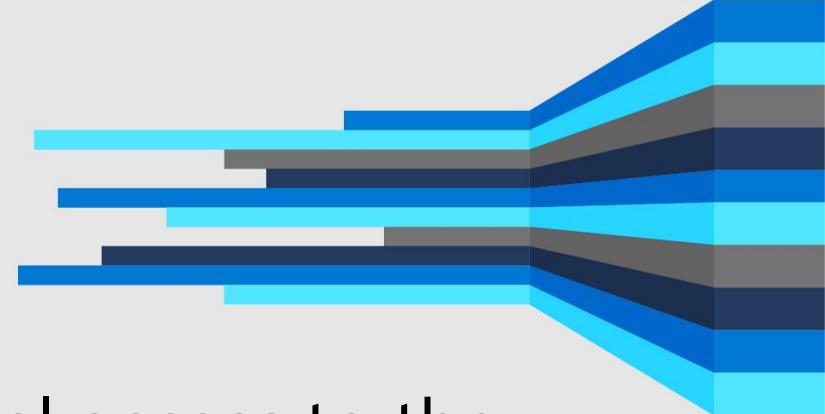
Student's demo of lab 5 using desktop flows in a cloud flow

Lab 5 review: Tips & Tricks Machine registration



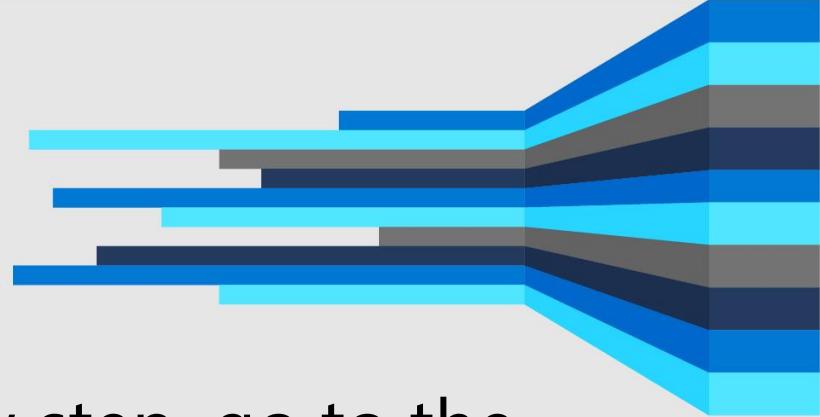
- ✓ Machine must be registered in the same environment as your Power Automate desktop flow. This is necessary to ensure data moving between the service and machine honors data sovereignty rules.
- ✓ Use the same account that you are logging into portal to setup the machine.
- ✓ If you need to switch environment, you must re-register machine.
- ✓ If you only need to switch an account, you can just log in using the new account.
- ✓ Machine will be online even if you're not logged in. You can check its status from the portal.

Lab 5 review: Tips & Tricks desktop flow Connection



- ✓ Use a user account and password that has local access to the registered machine.
- ✓ Desktop flows supports local machine accounts, Active Directory accounts for AD domain-joined machines and Azure AD accounts for Azure AD-managed machines. Microsoft Account (MSA) is not supported.
- ✓ Make sure to check that you are using the correct connection if your desktop flow did not run successfully. You can check the connection details under Data->Connection in the portal.

Lab 5 review: Tips & Tricks Monitor the cloud flow run



- ✓ If the cloud flow run failed at the desktop flow step, go to the desktop flow page to look up run history from there to see detail error messages.

Session 6: Use API Connectors to connect to Outlook

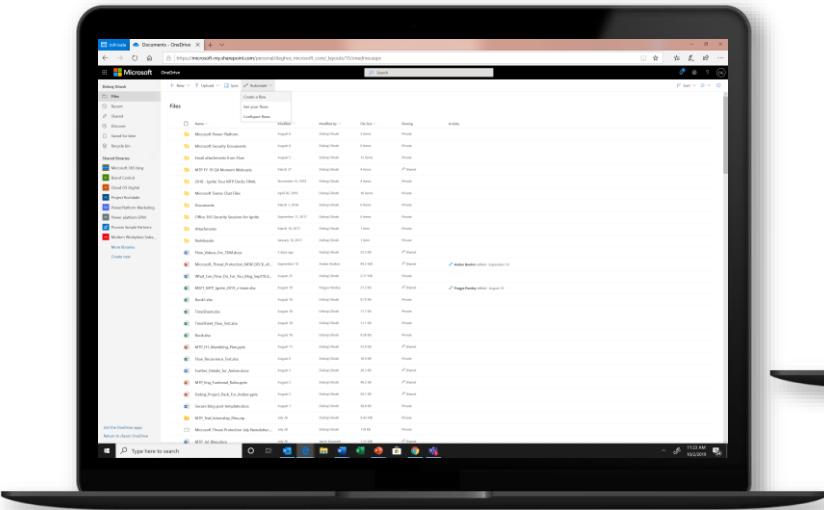
API connectors available in Power Automate



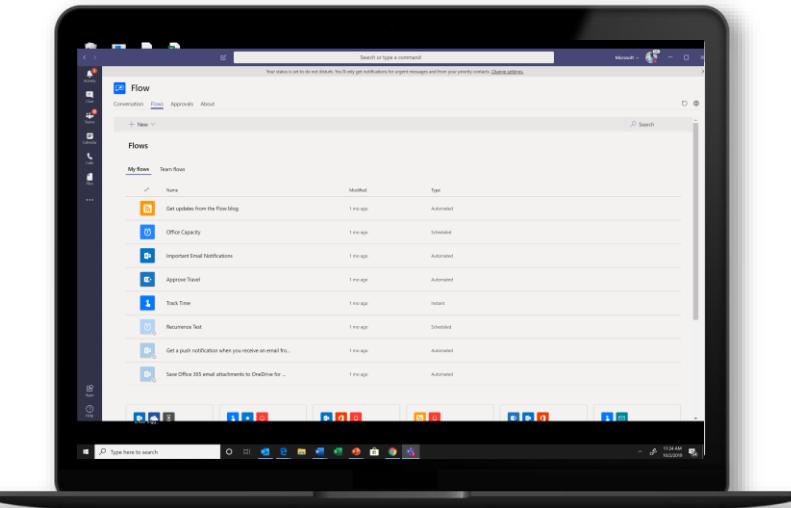
More than 470
app connectors
(including on-prem applications)

Native Integration With Widely Used Services

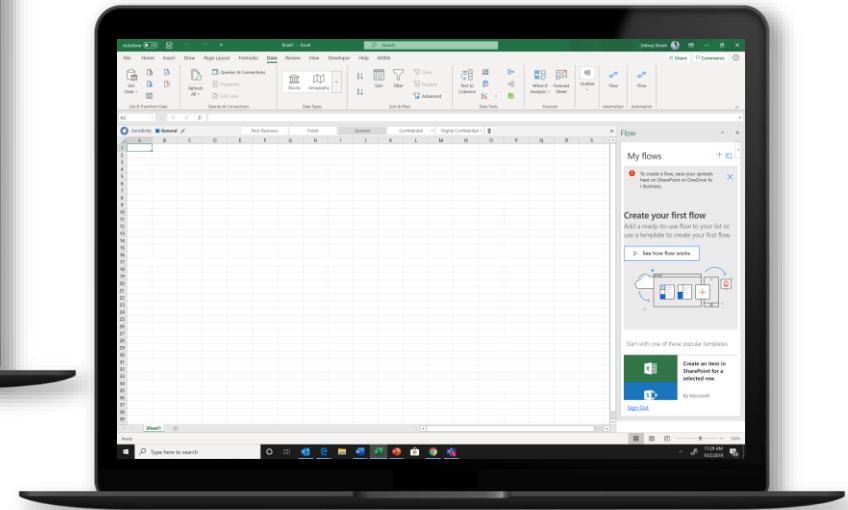
Begin automating
from your OneDrive



In-app automation
in Teams



Automate directly
from Excel

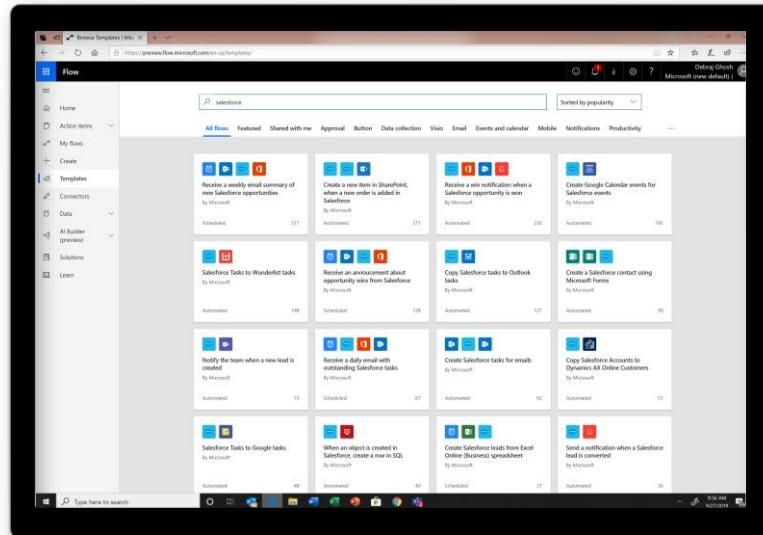


Easily Automate your core operations processes

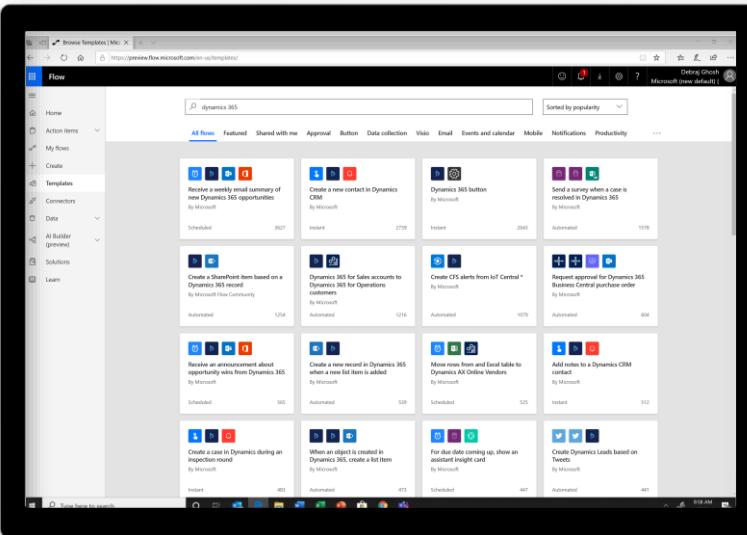
Automate your mission critical tasks with seamless integration to Salesforce, Dynamics 365, and SAP

- Track Salesforce closed converted leads and send an email
- Request approval for Dynamics 365 Business Central purchase order
- Notify your team about new opportunities

Salesforce



Dynamics 365

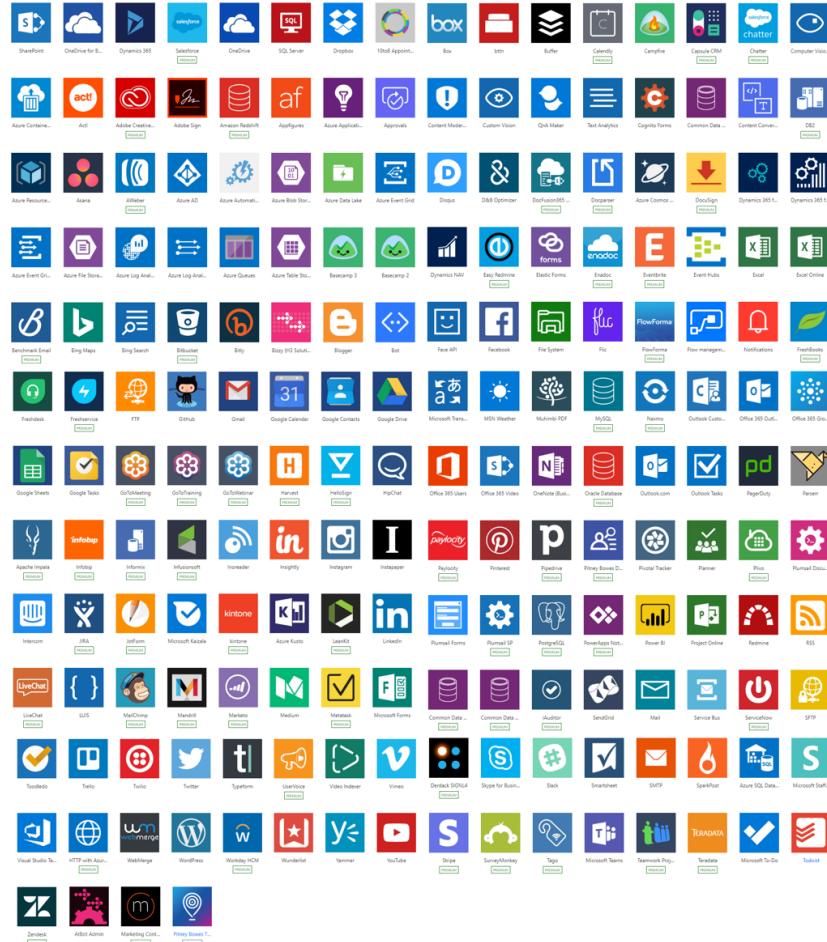


SAP

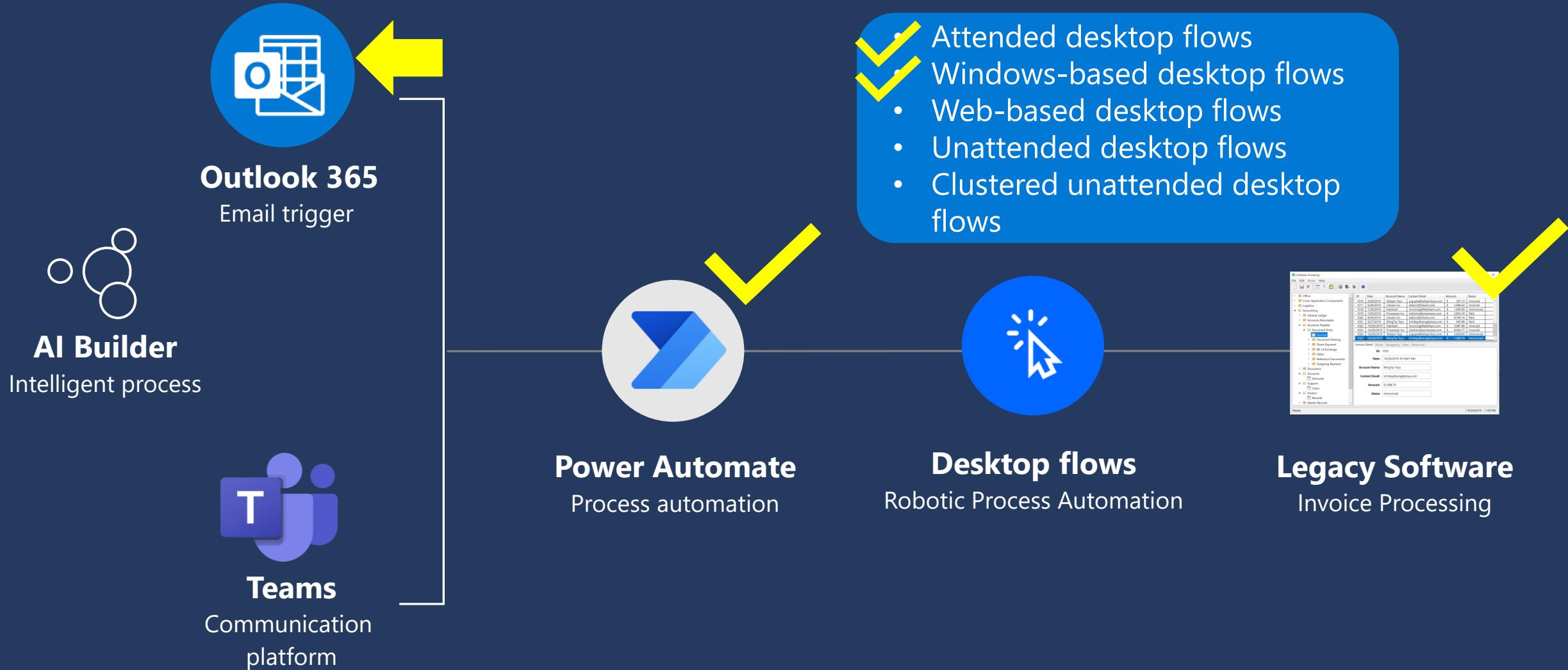


Connectivity & integration

- File providers
- Databases
- Web APIs
- Productivity apps, etc.
- Pluggable extensibility via **Custom Connectors** to integrate existing LOB systems into Power Automate



Lab 6: Use Outlook email to trigger desktop flows and pass inputs (25 minutes)

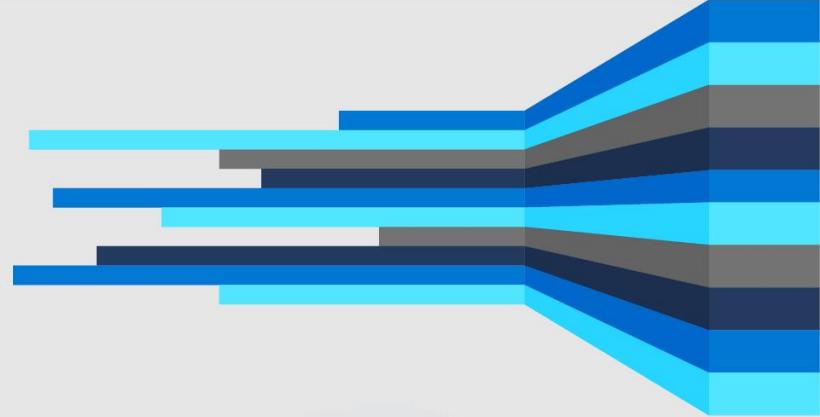


Student's demo of lab 6 using Outlook connector as trigger

Session 7: Integrate with AI Builder

AI transformation

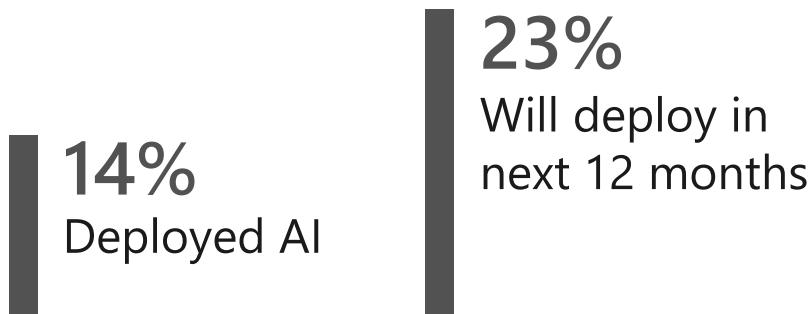
- AI is accelerating the digital transformation for every industry
- Organizations that incorporate AI far outpace their competitors
- However, need a programming or data science background



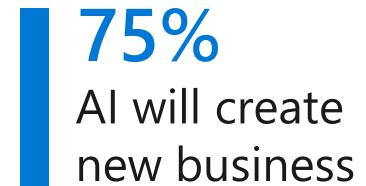
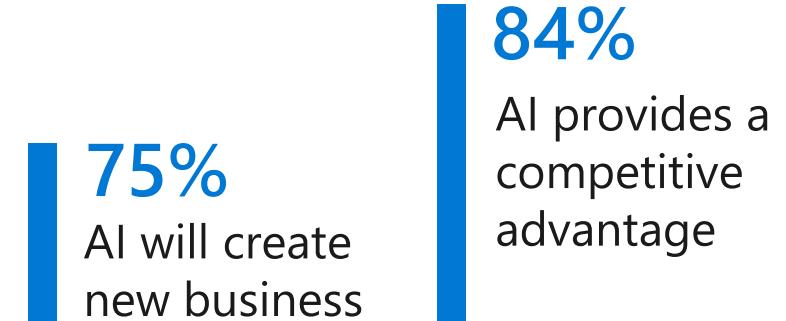
There is a huge gap

Gap

Between actions...



Source
Gartner, 2019. BCG, 2017.



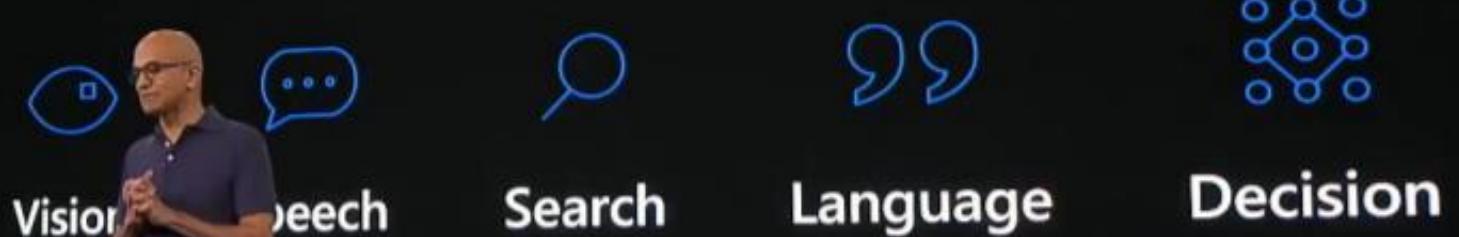
...and expectations.

TAKE THEM TO EDGE DEVICES AND,
OF COURSE, USE RICH ML.

Search



Azure Cognitive Services



Why use AI builder in Power Automate



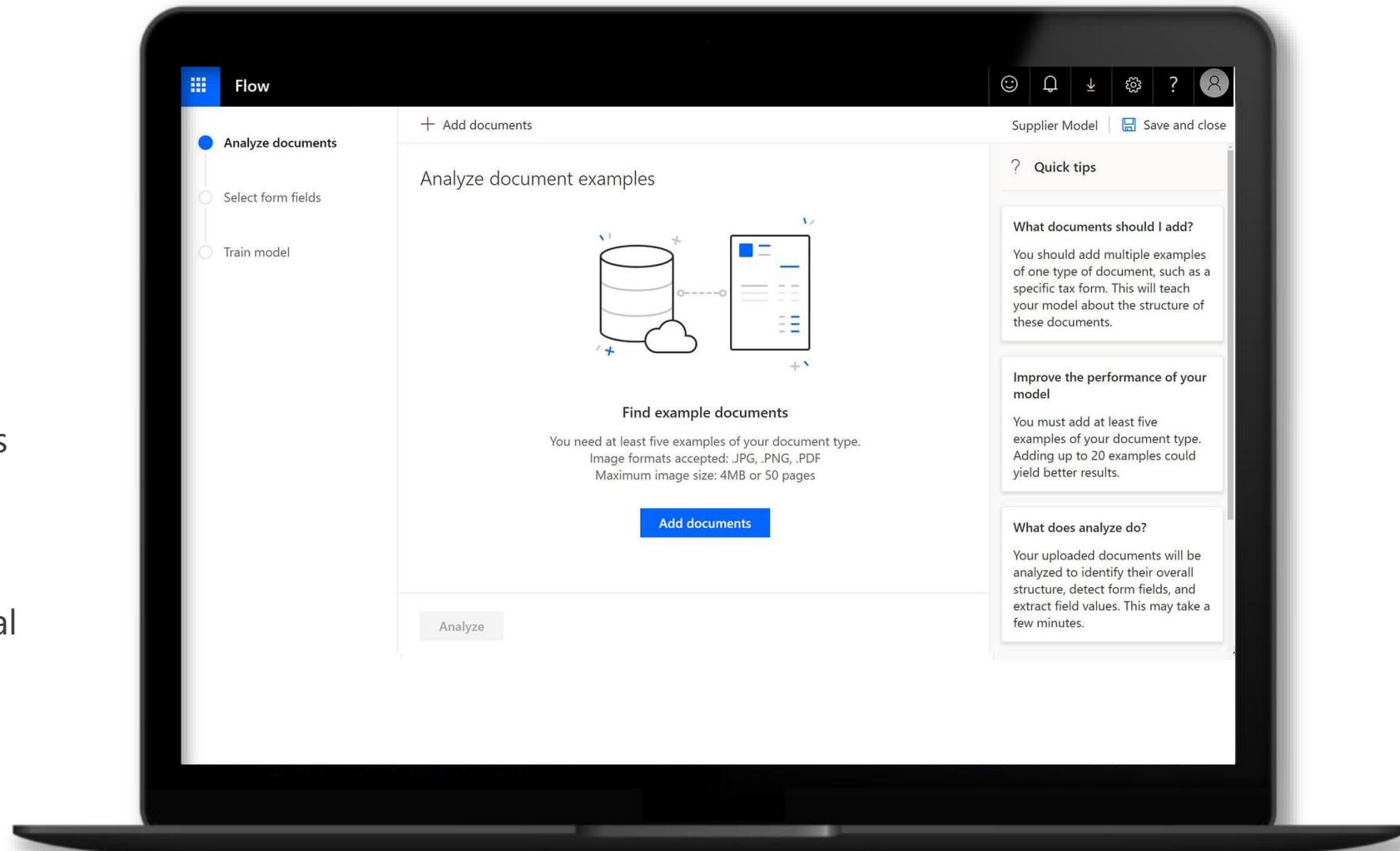
No-code AI



AI for many industry scenarios



AI for multiple industry verticals



Enhance Automation with the Power of AI

Use Powerful Pre-defined AI Models



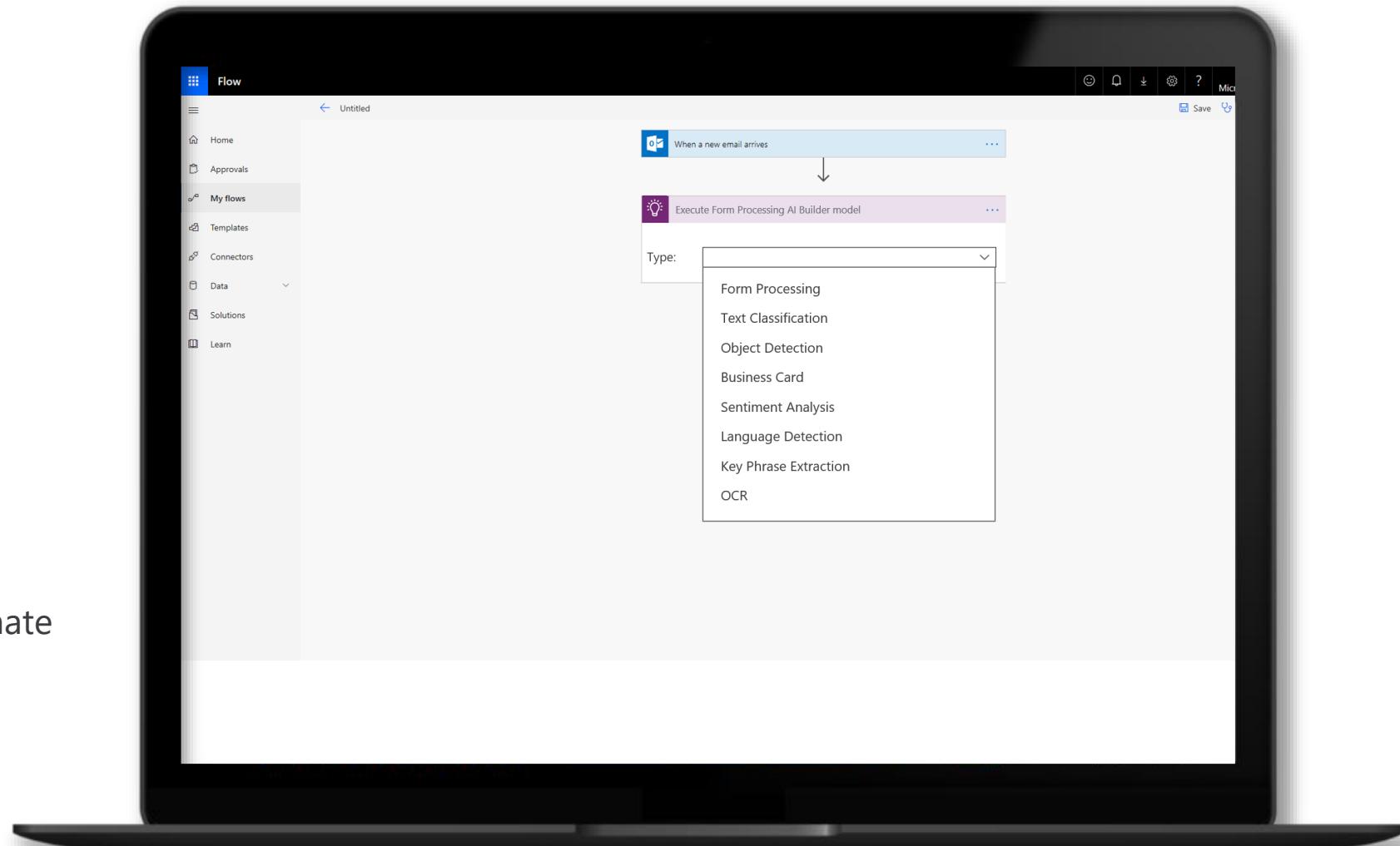
Pre-defined models



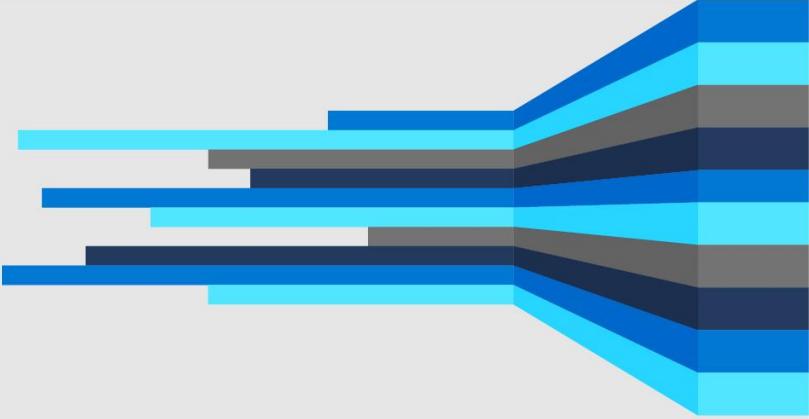
Create Custom Models



Integrate to any Power Automate



Wide range of AI capabilities



Prediction

Prediction



Language

Key phrase extraction
Language detection
Sentiment analysis
Text classification



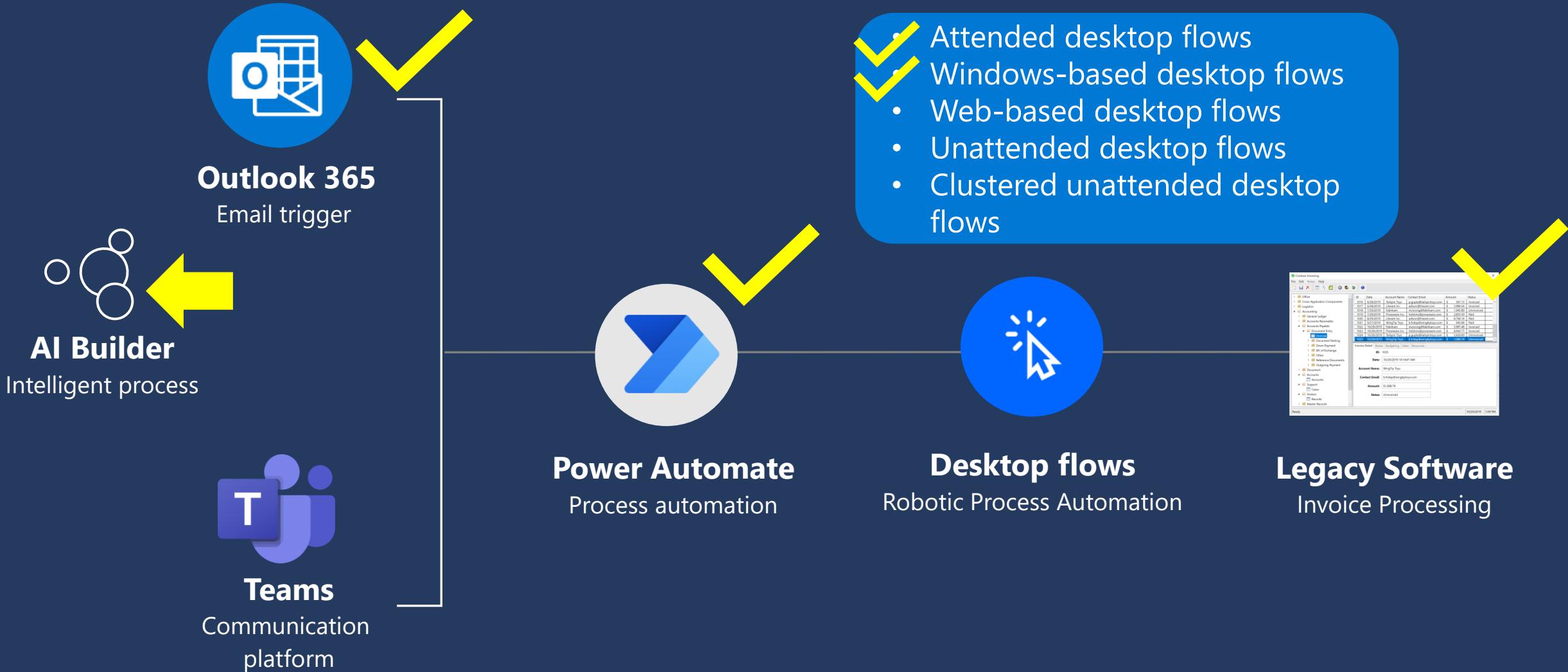
Vision

Business card reader
Form processing
Object detection
Text recognition

Pre-Build Power Automate templates

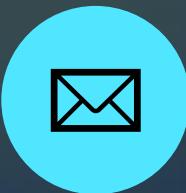
Template	Description	Creator	Status	Popularity
Click a button to read and save information from documents using AI Builder	Click a button to read and save information from documents using AI Builder	By Microsoft	Instant	5420
Extract text from images using AI Builder Text Recognition on button click	Extract text from images using AI Builder Text Recognition on button click	By Microsoft	Instant	1766
Send a notification with the sentiment manager's email using AI Builder	Send a notification with the sentiment manager's email using AI Builder	By Microsoft	Automated	1122
When a new email arrives, extract entities of email text using AI Builder	When a new email arrives, extract entities of email text using AI Builder	By Microsoft	Automated	707
Create contact in CDS from a business card using AI Builder on button click	Create contact in CDS from a business card using AI Builder on button click	By Microsoft	Instant	470
Make Office 365 email image attachments searchable using AI Builder	Make Office 365 email image attachments searchable using AI Builder	By Microsoft	Automated	379
Click a button to recognize and count objects in images using AI Builder	Click a button to recognize and count objects in images using AI Builder	By Microsoft	Instant	355
Route emails according to category of a text by AI Builder on new email	Route emails according to category of a text by AI Builder on new email	By Microsoft	Automated	280
Predict in real time when a CDS record is updated using AI Builder	Predict in real time when a CDS record is updated using AI Builder	By Microsoft	Automated	241
Track expenses by scanning receipts added to your OneDrive for Business	Track expenses by scanning receipts added to your OneDrive for Business	By Microsoft	Automated	233
Route emails as per the language detected by AI Builder on new email	Route emails as per the language detected by AI Builder on new email	By Microsoft	Automated	204
Save Key Phrases from your Yammer group posts into Excel using AI Builder	Save Key Phrases from your Yammer group posts into Excel using AI Builder	By Microsoft	Automated	165
Analyze sentiment of Dynamics emails using AI Builder	Analyze sentiment of Dynamics emails using AI Builder	By Microsoft	Automated	159
Send an Outlook email when a negative tweet is posted as per AI Builder	Send an Outlook email when a negative tweet is posted as per AI Builder	By Microsoft	Automated	82
Translate text into another language using AI Builder on button click	Translate text into another language using AI Builder on button click	By Microsoft	Instant	80
Click a button to read information from invoices using AI Builder	Click a button to read information from invoices using AI Builder	By Microsoft	Instant	60
Update contacts in CDS from OneDrive(Business) records using AI Builder	Update contacts in CDS from OneDrive(Business) records using AI Builder	By Microsoft	Instant	0

Lab 7: Add AI model to process invoice forms (25 minutes)

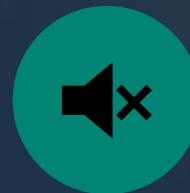


Demo of lab 7 using AI Builder in Power Automate

Rules and Housekeeping



Please do not share the meeting invite URL with anybody



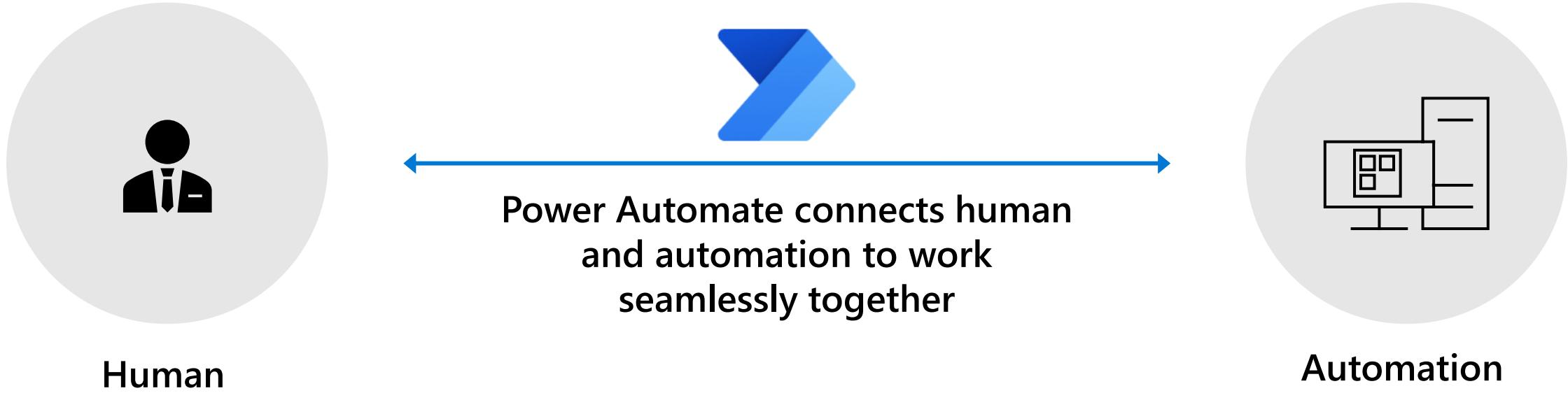
This is an action-packed agenda, so please stay on mute



Please ask questions on the chat and be patient when waiting for a response

Session 8: Integrate with Microsoft Teams

Why invite Human into Automation process



Automate Approvals



Automate approvals to focus on more valuable tasks



Many approval scenarios offered out of the box



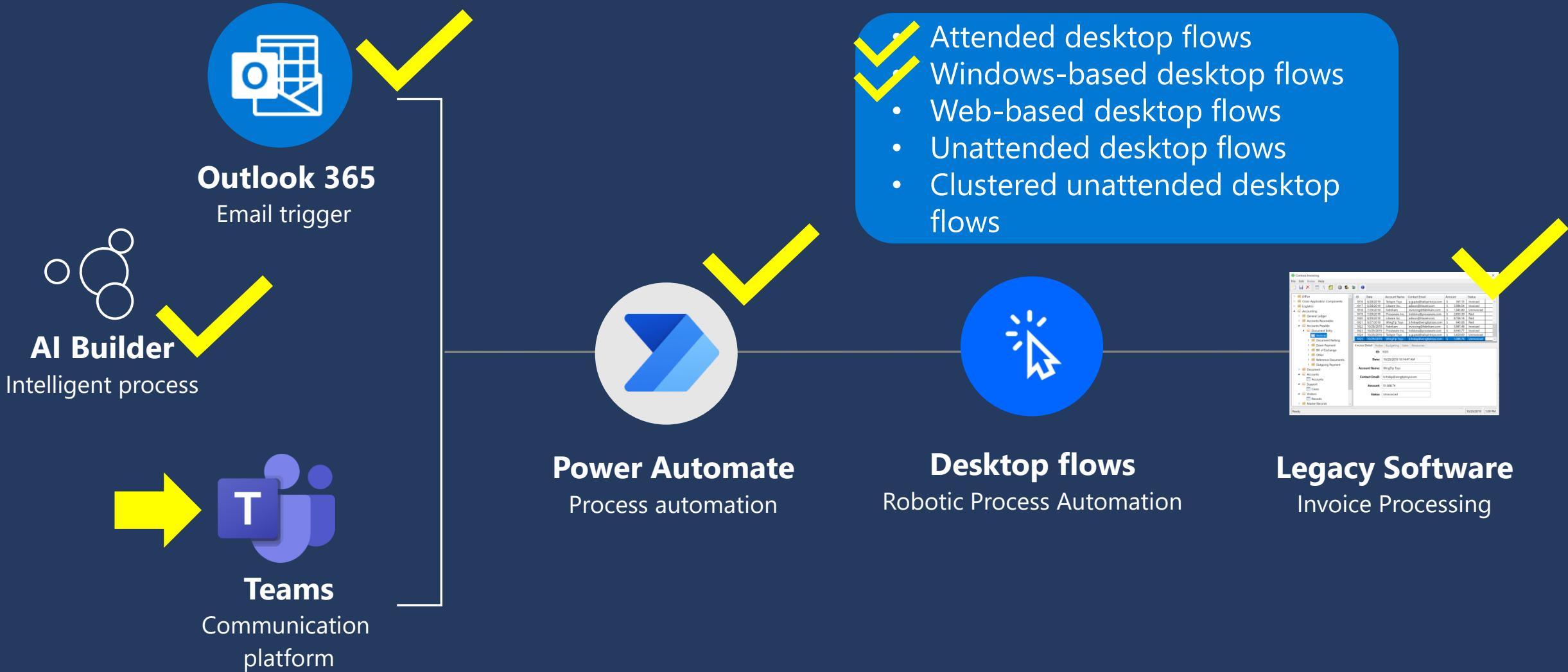
Quickly save departmental time

The Microsoft Power Automate mobile application interface is displayed on a tablet. The left sidebar shows navigation options: Home, Action items, My flows, Create, Templates (selected), Connectors, Data, AI Builder, Solutions, and Learn. The main screen displays a grid of approval-related flow templates. A search bar at the top right says "Search for helpful resources" and a sorting dropdown says "Sorted by popularity". The templates include:

- Save Office 365 email attachments to OneDrive for Business (By Microsoft, Automated, 588108)
- Send myself a reminder in 10 minutes (By Microsoft, Instant, 370534)
- Get a push notification when you receive an email from your boss (By Microsoft, Automated, 326004)
- Get today's weather forecast current location (By Microsoft, Instant, 326004)
- PowerApps button (By Microsoft, Instant, 276985)
- Start approval when a new item is added (By Microsoft, Automated, 259449)
- Send a customized email when a new SharePoint list item is added (By Microsoft, Automated, 246966)
- Send a customized email when a new file is added (By Microsoft, Automated, 246966)
- Record form responses in SharePoint (By Microsoft, Automated, 195121)
- Save Outlook.com email attachments to your OneDrive (By Microsoft Flow Community, Automated, 129899)
- Request manager approval for a selected file (By Microsoft, Automated, 2574)
- Send form responses for approval (By Microsoft, Automated, 2574)

A specific template titled "Request approval in Microsoft Teams when a SharePoint item is created" is highlighted in a callout box.

Lab 8: Use Microsoft Teams to integrate approvals (25 minutes)

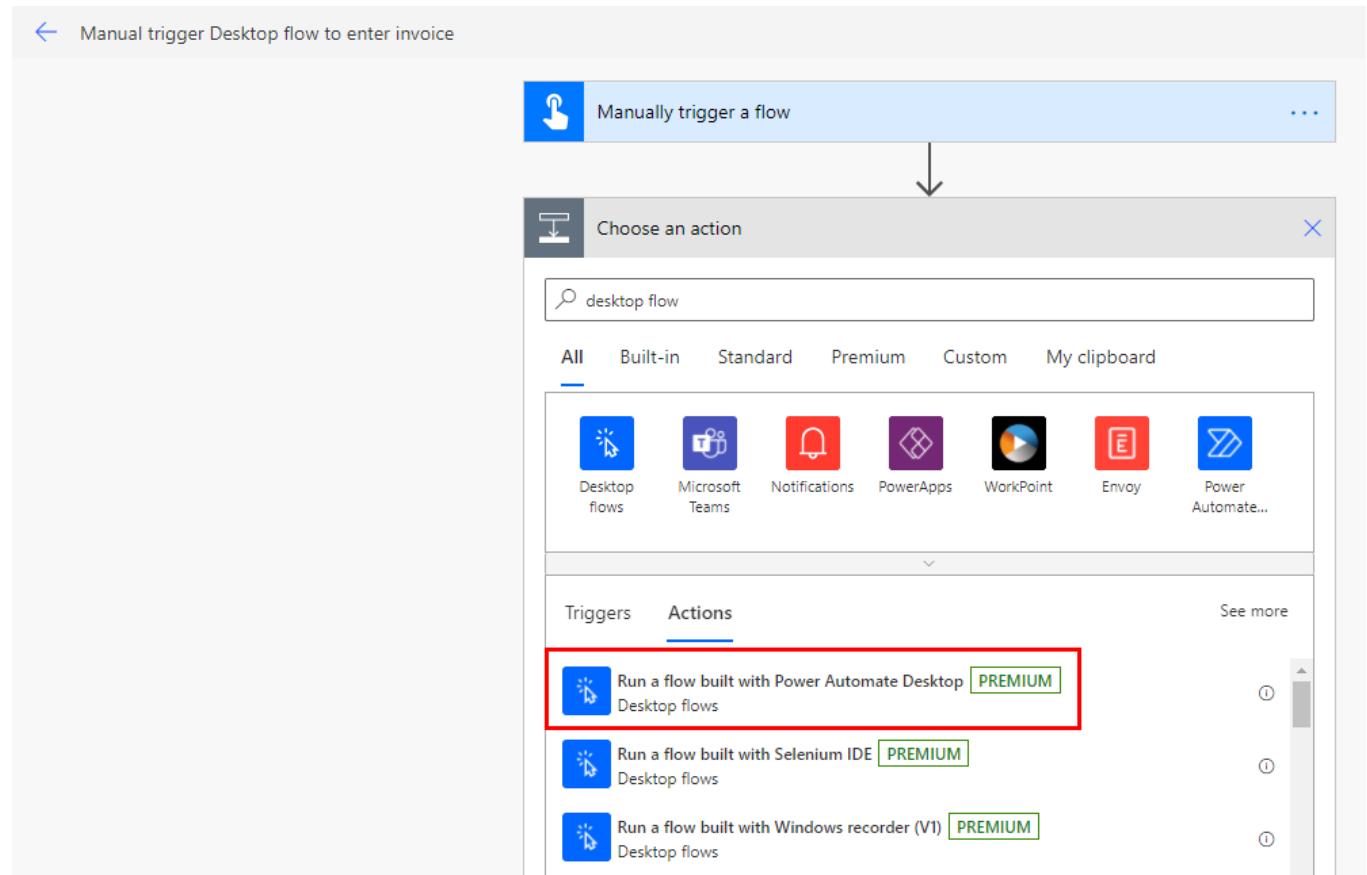


Student's demo of lab 8 using Teams Approval

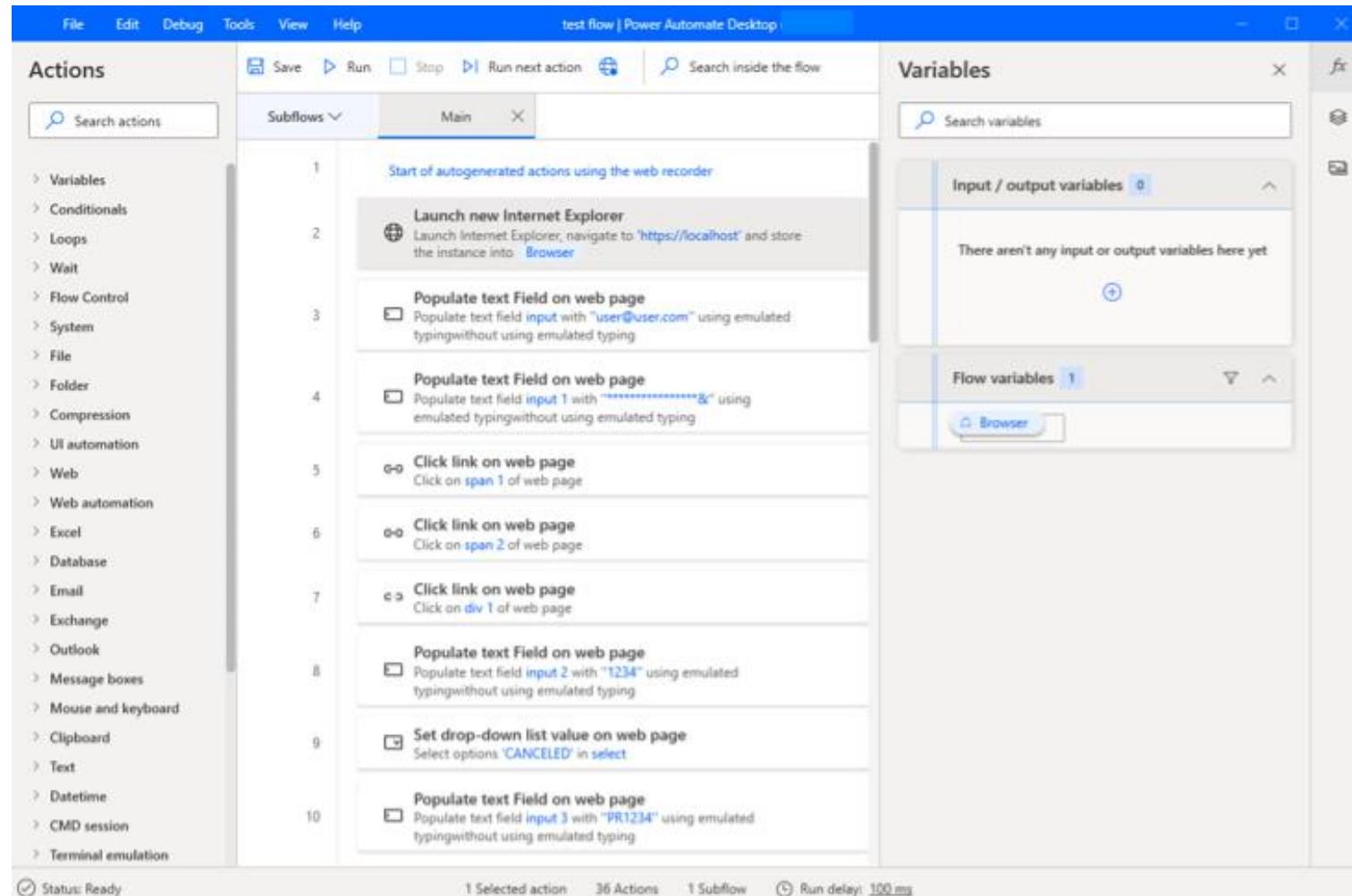
Session 9: Add Power Automate Desktop Web and Excel

Expand Power Automate capabilities by using the desktop flows action to invoke Power Automate Desktop Processes

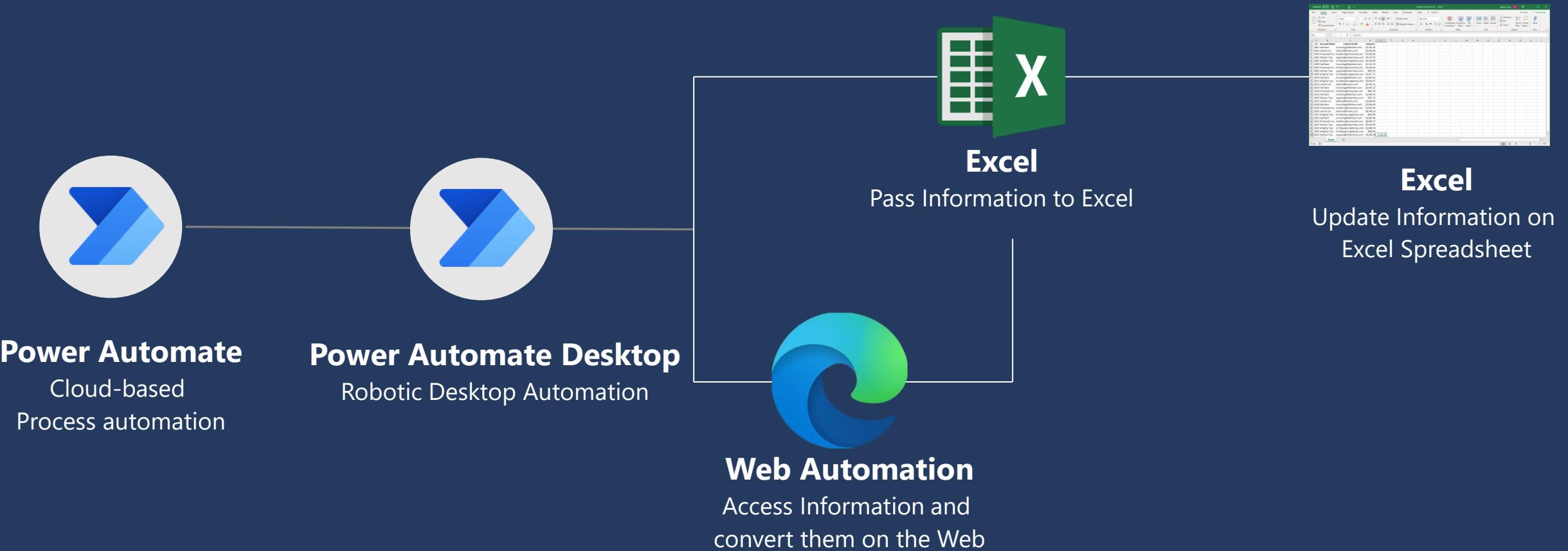
- Almost 400 actions available
- Easy to run a Process and pass variables
- Take RPA Processes to another level



Easy to use - Low-code/no-code approach with a Drag & Drop environment empowering the Citizen Developer



Lab 9: Extend a Power Automate Desktop process to write notes into Excel (90 minutes)



Lab 9 review Tips & Tricks Power Automate Desktop and Power Automate

- ✓ You can drag and drop actions to the workspace to form the Process.
- ✓ Repeating Actions can be copied and then pasted changing just their properties.
- ✓ The backbone of a Process can be captured using the Web and Macro Recorders.
- ✓ Make sure to save the Power Automate Desktop Process and close the Process Designer before running it from Power Automate.

Student's demo of lab 9 using Power Automate Desktop

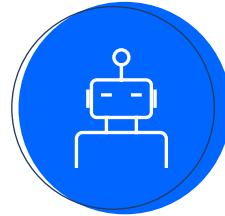
(Optional)
Session 10: Unattended desktop flows

RPA – Attended vs. Unattended

Automation whether you're at your logged in or not



Attended



Unattended

	Personal automation	Enterprise automation
Overview	Drive efficiencies and automate manual, individual tasks across desktop and web	Accelerate the automation of high-volume and tedious tasks without lifting a finger
Scenario	On-demand task automation	Automate company processes at scale
Audience	Citizen developer in business unit	Automation specialist (for now) in a Center of Excellence dedicated to RPA
Requirement	User signed in on their device/human initiated	Jobs on dedicated machines/robots do the work

RPA in Power Automate: Attended

File Edit Debug Tools View Help Enter an invoice | Power Automate Desktop

Actions Subflows Main Write_notes_into_excel Currency_Exchange

Variables

Search actions

Search variables

Input / output variables 4

Run application
Run application 'C:\Program Files (x86)\Contoso, Inc\Contoso Invoicing\LegacyInvoicingApp.exe' with arguments

Start of autogenerated actions using the desktop recorder

Click UI element in window
Click on UI element Text 'Invoices**'

Click UI element in window
Click on UI element Image 'Image'

Populate text field in window
Populate text box Edit 'TextBox' with Account

Populate text field in window
Populate text box Edit 'TextBox' 2 with Contact

Populate text field in window
Populate text box Edit 'TextBox' 3 with Amount

Set drop-down list value in window
Select option(s) 'Invoiced' in Combo Box 'Combo'

Get details of a UI element in window
Get attribute 'Own Text' of a UI element Text '105'

Set variable
Set InvoiceID to AttributeValue

Click UI element in window
Click on UI element Image 'Image' 2

End of autogenerated actions using the desktop recorder

Contoso Invoicing

File Edit Notes Help

ID Date Account Name Contact Email Amount Status

1053	12/15/2020			\$	Uninvoiced
1054	12/15/2020			\$	Uninvoiced
1055	12/15/2020			\$	Uninvoiced
1056	12/15/2020	WingTipToys	b.friday@wingtiptoys.com	\$ 500.00	Invoiced
1057	12/15/2020	WingTip Toys	b.friday@wingtiptoys.com	\$ 500.00	Invoiced
1058	12/15/2020	WingTip Toys	b.friday@wingtiptoys.com	\$ 500.00	Invoiced
1059	12/15/2020	WingTip Toys	b.friday@wingtiptoys.com	\$ 500.00	Invoiced
1060	12/15/2020	WingTip Toys	b.friday@wingtiptoys.com	\$ 200.00	Invoiced
1061	12/15/2020	WingTip Toys	b.friday@wingtiptoys.com	\$ 500.00	Invoiced

Invoice Detail Notes Budgeting Sales Resources

ID: 1061
Date: 12/15/2020
Account: WingTip Toys
Contact: b.friday@wingtiptoys.com
Amount: \$500.00
Status: Invoiced

Ready 12/15/2020 2:31 PM

RPA in Power Automate: Unattended

The screenshot shows the Microsoft Power Automate portal interface. The left sidebar navigation includes Home, Activities, Flows, Create, Connectors, Data, Entities, Connections, Custom connectors, Gateways (which is selected), Solutions, and Team.

The main content area is titled "Gateways > Accounting Legacy app machine". It displays the following details:

- Name:** Accounting Legacy app machine
- Owner:** someone@example.com
- Status:** Online | Latest version
- Gateway cluster:** 3 gateways in cluster
- Flow app status:** Running | Latest version
- Distribution:** Distribute work across all active gateways in this cluster (switch is on)

The "Flow runs" table lists the following data:

Start	Duration	Flow	Run	Machine	Status
Just now	-	New hire flow	Automate invoicing in Comsol desktop app	ProdMachine	Running
9:22 AM, 3/2/18	00:00:05	New hire flow	Automate invoicing in Comsol desktop app	TestMachine	Failed
9:15 AM, 3/3/18	00:00:38	New hire flow	Automate invoicing in Comsol desktop app	TestMachine	Successful
8:20 AM, 2/28/18	00:00:00	New hire flow	Automate invoicing in Comsol desktop app	TestMachine	Successful
8:20 AM, 2/29/18	00:00:38	New hire flow	Automate invoicing in Comsol desktop app	TestMachine	Successful
8:20 AM, 2/29/18	00:00:38	New hire flow	Automate invoicing in Comsol desktop app	TestMachine	Successful
8:20 AM, 2/29/18	00:00:18	New hire flow	Automate invoicing in Comsol desktop app	TestMachine	Successful
8:20 AM, 2/29/18	00:00:38	New hire flow	Automate invoicing in Comsol desktop app	TestMachine	Successful
8:20 AM, 2/28/18	00:00:38	New hire flow	Automate invoicing in Comsol desktop app	TestMachine	Successful
9:20 AM, 2/22/18	00:00:38	New hire flow	Automate invoicing in Comsol desktop app	TestMachine	Successful

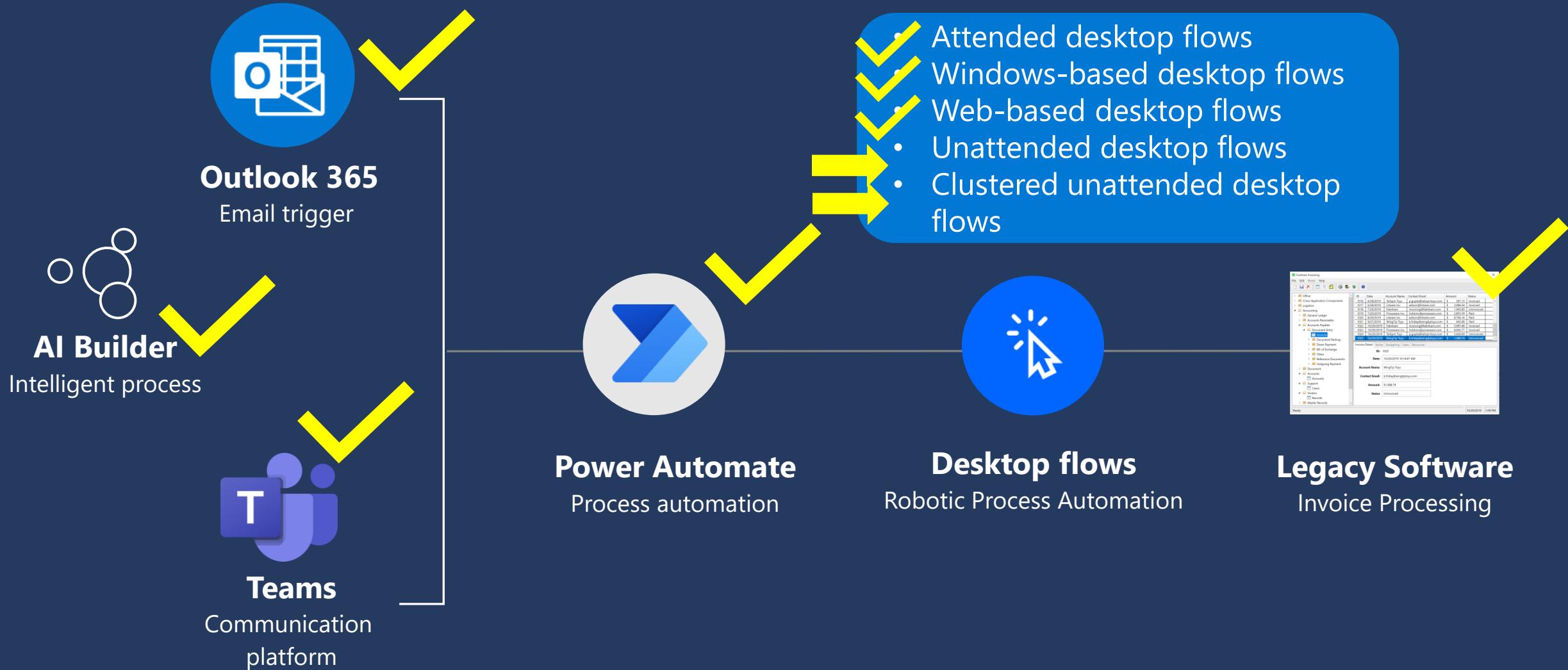
On the right side, there are two sections: "Connections in use" and "Gateways in this cluster".

- Connections in use:** Shows RPA and SharePoint On-Prem connections.
- Gateways in this cluster:** Shows three gateways: JoeWin1, JoeWin2, and Device 1.

Group (cluster) – scale up the automation

- 2 or more machines can join into a group (cluster)
- Easy to scale to maximize hardware productivity
- Require to have the same log in credential

Lab 10: Test RPA in Unattended mode (90 minutes)



Demo of unattended desktop flows that run on group of VMs

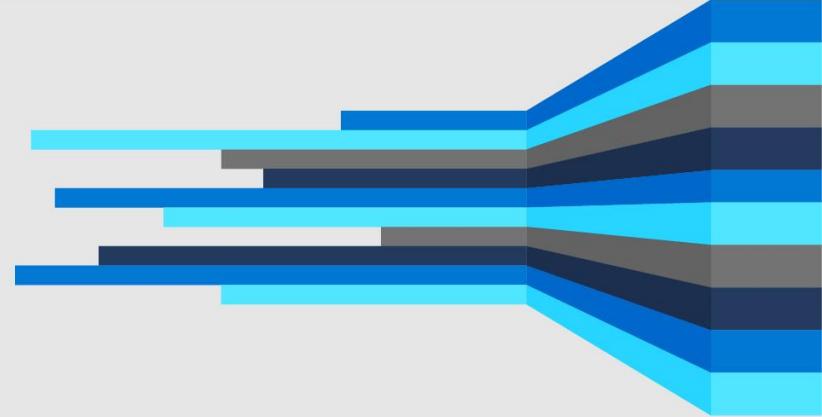
Lab 10 review Tips & Tricks

Unattended desktop flows



- ✓ Unattended mode executes when user is not signed in. Remember to log off from the session (lock the screen is not enough) when running in unattended mode – you should type “logoff” from the windows command bar and select it if you’re working on the machine yourself.
- ✓ You can distribute unattended desktop flow to a group of machines to fully utilize the resource pool capacity.
- ✓ Make sure the machine shows online (so the VMs are turned on).
- ✓ Troubleshooting sequences:
 1. Desktop flow testing -> make sure your desktop flow app and extension are installed and enabled.
 2. Attended flow testing -> make sure the connection is correct, machine is online and execute the run in attended mode.
 3. Unattended flow testing.

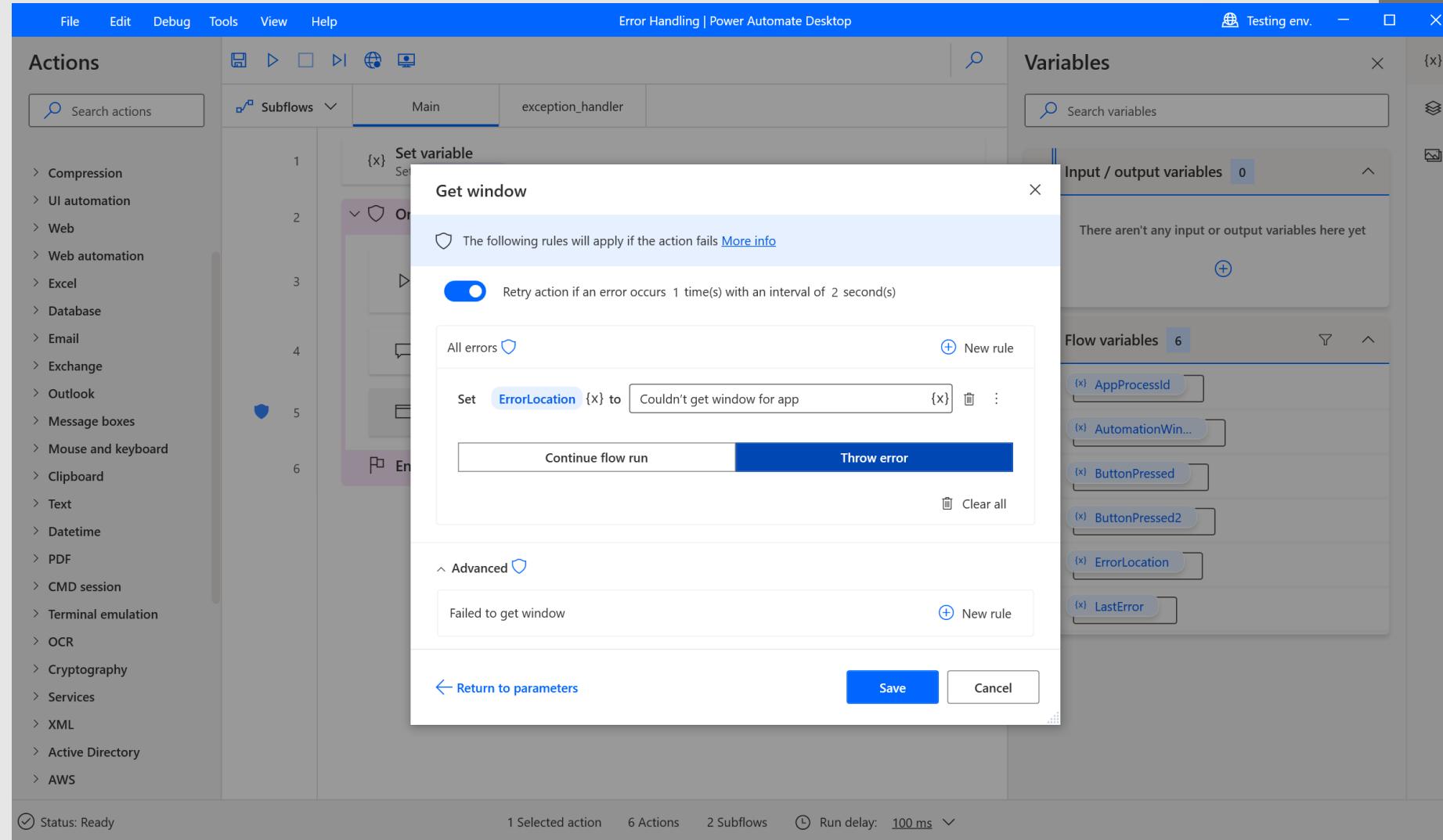
Lab 10 review: Tips & Tricks Groups



- ✓ Group is a set of machines.
- ✓ The group name can be any. Other machines are just added to this existing group (cluster).
- ✓ From the portal groups details page, you will see the other machines in this group.
- ✓ On the portal machines page, you can configure the group to run in distributed mode by toggle **Run on all machines in group**.
- ✓ If you are using local windows accounts, all VMs in the group must have the same local account with the same password, those are the credentials you should use when creating the desktop flow connection.

(Optional) Session 11: Error handling

Action level exception handling



Group level exception handling

The screenshot shows the Power Automate Desktop interface with the title bar "Error Handling | Power Automate Desktop". The main area displays a flow with several steps. A context menu is open over step 2, which is labeled "On block error". The menu is titled "On block error" and contains the following description: "Marks the beginning of a block to handle actions errors [More info](#)". Below this, there is a section titled "Select parameters" with a "Name:" input field containing "Launch_Application". Underneath, there is a "Run subflow" dropdown set to "exception_handler", a "Continue flow run" button, and a "Throw error" button. At the bottom right of the dialog are "Save" and "Cancel" buttons.

Actions

File Edit Debug Tools View Help

Error Handling | Power Automate Desktop

Testing env.

Actions

Subflows Main exception_handler

Search actions

Compression UI automation Web Web automation Excel Database Email Exchange Outlook Message boxes Mouse and keyboard Clipboard Text Datetime PDF CMD session Terminal emulation OCR Cryptography Services XML Active Directory AWS

On block error

Marks the beginning of a block to handle actions errors [More info](#)

Select parameters

Name: Launch_Application

Run subflow exception_handler

Continue flow run Throw error

Clear all

Save Cancel

Variables

Input / output variables 0

There aren't any input or output variables here yet

Flow variables 6

- (x) AppProcessId
- (x) AutomationWin...
- (x) ButtonPressed
- (x) ButtonPressed2
- (x) ErrorLocation
- (x) LastError

Status: Ready

1 Selected action 6 Actions 2 Subflows Run delay: 100 ms

Get last error

The screenshot shows the Power Automate Desktop interface with the title bar "Error Handling | Power Automate Desktop". The main area displays a flow titled "exception_handler" containing two steps:

- Step 1: "Get last error" action. Description: "Get the last error that occurred and store it into `LastError`".
- Step 2: "Display message" action. Description: "Display message 'An Exception has occurred : ' `ErrorLocation` '. Error details: ' `LastError` ' in the notification popup window with title 'My Exception Handler'.

A modal dialog for the "Get last error" action is open, showing its details:

- Description: "Retrieves the last error that occurred in the flow [More info](#)".
- Variables produced: `LastError`.

The "Variables" pane on the right lists the following variables:

- Input / output variables: 0
- Flow variables: 6
 - (x) AppProcessId
 - (x) AutomationWin...
 - (x) ButtonPressed
 - (x) ButtonPressed2
 - (x) ErrorLocation
 - (x) LastError

At the bottom of the interface, status information includes: Status: Ready, 1 Selected action, 2 Actions, 2 Subflows, Run delay: 100 ms.

Lab 11 (optional): Error handling (60 minutes)

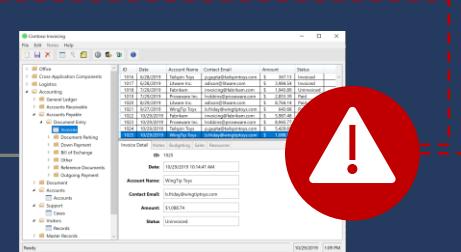
Errors can be caught:

- At action level
- At group of actions (on block error)
- In cloud flow, at “Run a flow built with Power Automate Desktop” action



Power Automate
Cloud-based
Process automation

Power Automate Desktop
Robotic Desktop Automation



Error occurs

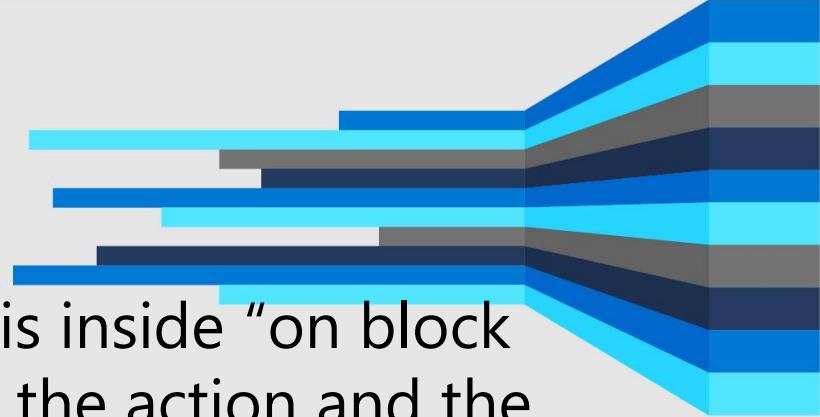
Legacy Software
Invoice Processing

Demo of error handling inside Power Automate Desktop and Power Automate

Lab 11 review Tips & Tricks

Error handling

- ✓ If you configure error handling on an action level that is inside “on block error”, then if exception occurs, both instructions from the action and the block level will be executed.
- ✓ If error handling inside desktop flow is configured to continue the flow, action “Run a flow built with Power Automate Desktop” inside cloud flow will complete successfully as well.
- ✓ If no error handling is configured, in case of exception, desktop flow will terminate with an error as well as action “Run a flow built with Power Automate Desktop” inside cloud flow that triggered it.
- ✓ When handling exceptions inside desktop flows, use “Get last error” action together with “Take screenshot” to gather as much details about the exception as possible.



(Optional)

Session 12: Monitor Desktop flow runs and manage runs queue

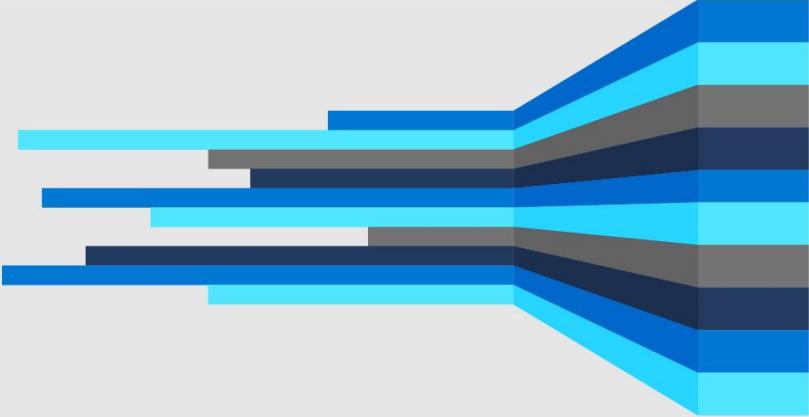
Monitor Desktop Runs on machines or machine groups level

The screenshot shows the Microsoft Power Automate interface. The left sidebar has a 'Machines' section selected. The main area is titled 'Machines' and displays a table of machine groups. The table columns are: Machine group name, Description, Machines, Flows running, Flows que..., Access, and Owner. There are three entries:

Machine group name	Description	Machines	Flows running	Flows que...	Access	Owner
Invoicing	—	2	1	1	Owner	Poszy...
Procurement SAP	—	3	3	2	Owner	Poszy...
Test group	—	2	0	0	Owner	Poszy...

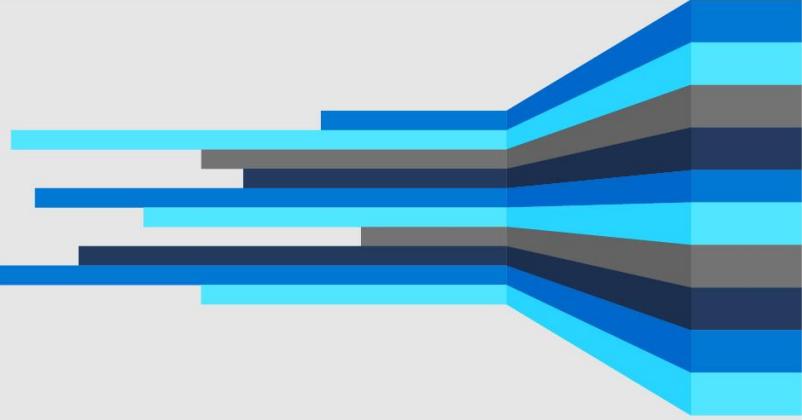
At the top of the main area, there are several navigation links: Edit details, Manage access, Delete group, See details, See machines, See run queue, and See flow runs.

Manage Queue Priorities



Queue	Desktop flow	Requested	Priority	Status	Run start	Parent flow
0	Enter data into invoice application	29 sec ago	High	Running	8 sec ago	Process shipping...
0	Create new Outlook task	30 sec ago	Normal	Running	23 sec ago	Process shipping...
1	Retrieve shipping information	29 sec ago	High	Next to run	---	Process shipping...
2	Find files containing existing text	29 sec ago	Normal	Queued	---	Process shipping...
3	Print document	29 sec ago	Normal	Queued	---	Process shipping...
4	Get folder size	29 sec ago	Normal	Queued	---	Process shipping...
5	Request manager approval for a selected file	29 sec ago	Normal	Queued	---	Process shipping...
6	Zip and email files	29 sec ago	Normal	Queued	---	Process shipping...

Troubleshoot Desktop Flow Runs



Screenshot of the Microsoft Power Automate desktop interface showing the "Desktop flow runs" section.

The left sidebar shows navigation options: Home, Action items, My flows, Create, Templates, Connectors, Data, Monitor (highlighted with a red box), Cloud flow activity, Desktop flow runs (highlighted with a red box), and Desktop flow queues.

The main area displays a table of "Desktop flow runs" with the following columns: Requested, Desktop flow, Status, Run start, Run mode, Duration, and Parent flow.

Requested	Desktop flow	Status	Run start	Run mode	Duration	Parent flow
Mar 29, 08:21 AM (51 min ago)	open calculator	Failed	—	Attended	00 ms	test 11 17
Feb 18, 01:24 AM (1 mo ago)	Flow to share	Succeeded	Feb 18, 01:23 AM (1 mo ago)	—	00:00:02	—
Feb 13, 03:47 AM (1 mo ago)	FlowWithSensitiveInput	Succeeded	Feb 13, 03:47 AM (1 mo ago)	—	00:00:03	—
Feb 9, 07:03 AM (1 mo ago)	WA_06 - Search for a certain value in Excel and retrie...	Succeeded	Feb 9, 07:03 AM (1 mo ago)	—	00:00:12	—
Feb 9, 05:46 AM (1 mo ago)	WA_04 - Loop through Excel Data using indexes (Ex...	Failed	Feb 9, 05:46 AM (1 mo ago)	—	00:00:05	—
Feb 9, 05:42 AM (1 mo ago)	WA_04 - Loop through Excel Data using indexes (Ex...	Failed	Feb 9, 05:41 AM (1 mo ago)	—	00:00:06	—
Feb 9, 05:01 AM (1 mo ago)	Untitled	Succeeded	Feb 9, 05:00 AM (1 mo ago)	—	00:00:03	—

Lab 12 (optional): Monitor desktop flows (60 minutes)

- Monitor desktop flow runs
- Review runs queue
- Change queued desktop flows order
- Set execution priority
- Cancel desktop flow execution



Power Automate

Cloud-based
Process automation



Outlook

Get message priority
and use as desktop flow
priority



Power Automate Desktop

Robotic Desktop Automation

Queue	Desktop flow	Requested	Priority	Status	Run start	Run end
1	Create new Outlook task	20 min ago	Normal	Running	1 hr ago	Power Automating...
2	Review shipping information	20 min ago	High	Ready to run	...	Power Automating...
3	Find files containing existing text	20 min ago	Normal	Queued	...	Power Automating...
4	Print document	20 min ago	Normal	Queued	...	Power Automating...
5	Get folder size	20 min ago	Normal	Queued	...	Power Automating...
6	Request manager approved for a selected file	20 min ago	Normal	Queued	...	Power Automating...
7	Zip and send file	20 min ago	Normal	Queued	...	Power Automating...
8	Print document	20 min ago	Normal	Queued	...	Power Automating...
9	Get folder size	20 min ago	Normal	Queued	...	Power Automating...
10	Request manager approved for a selected file	20 min ago	Normal	Queued	...	Power Automating...
11	Zip and send file	20 min ago	Normal	Queued	...	Power Automating...

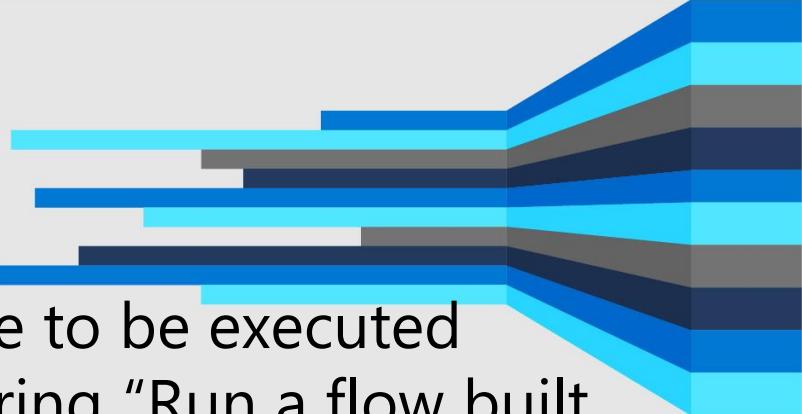
Monitor

Use Monitor and runs queue
to see desktop flows
execution queue
and details about each instance

Demo of monitoring desktop flow runs and managing runs queue

Lab 12 review Tips & Tricks

Monitoring and queues



- ✓ If you have important desktop flows that you would like to be executed before others, set their priority to "High" when configuring "Run a flow built with Power Automate Desktop" action.
- ✓ Use runs queue to change order of desktop flows execution that are waiting in the queue.
- ✓ Use Monitor to review execution logs, including errors, input and output data at each action, and to get more details about each desktop flow instance.
- ✓ If you would like to cancel desktop flow that is already running, go to Monitor and cancel it there.

Session 13: Summary

Power Automate RPA Licensing & Roadmap

Licensing

<https://flow.microsoft.com/pricing/>

	Per user plan \$15 user/month	Per user plan with attended RPA \$40 user/month	Per flow plan Starting at \$500 per month
Run flows			
Active flows per user	Unlimited ³	Unlimited ³	N/A
Active attended RPA bots	--	1 bot ⁴	--
Active unattended RPA bots	--	\$ per bot	\$ per bot
AI Builder service credits ⁵	\$	5,000/month	\$
What's included			
Connect to your data	Use pre-built connectors		
	Use custom and on-premises connectors		
Store and manage data	Create and access custom entities		
	50 MB database capacity ⁶		
	200 MB file capacity ⁶		

³ Usage subject to service limits. Please review <https://aka.ms/platformlimits> for more details.

⁴ UI flow authoring, and bot orchestration and management are included.

⁵ AI Builder service credit capacity is pooled at the tenant level. Purchase additional capacity per 1M service credits for \$500/month.

⁶ Common Data Service database and file capacity entitlements are pooled at the tenant level.

¹Pricing information provided above is intended solely to be a non-binding estimate as of the date this guidance is provided. It does not constitute an offer by Microsoft. The actual pricing will be reflected on the EA Price List.

Completing the automation portfolio w/RPA



Diverse interfaces

AI, cloud services (APIs), and legacy UI-based systems

Infusion of AI

Documents,
Forms, invoices, images, etc...

API-automation (DPA)

Cloud services and internal
API services

UI-automation (RPA)

Legacy web, windows,
terminal apps

Forms understanding
+ OCR + Digital Paper
AI builder

470+ connectors + custom
connectors in Azure

User Interface automation

Power Automate
Workflow designer and orchestrator

Language support

- **Support for UI localization**

Does not include right-to-left languages (Arabic, Hebrew, etc.)

Languages	Locale
Bulgarian (Bulgaria)	bg-BG
Catalan (Catalan)	ca-ES
Czech (Czech Republic)	cs-CZ
Danish (Denmark)	da-DK
German (Switzerland)	de-ch
German (Germany)	de-DE
Greek (Greece)	el-GR
English (Australia)	en-au
English (Canada)	en-ca
English (United Kingdom)	en-gb
English (Ireland)	en-ie
English (India)	en-in
English (New Zealand)	en-nz
English (Singapore)	en-sg

Languages	Locale
English (United States)	en-US
English (South Africa)	en-za
Spanish (Spain, International Sort)	es-ES
Spanish (Latin America)	es-mx
Estonian (Estonia)	et-EE
Basque (Basque)	eu-ES
Finnish (Finland)	fi-FI
French (Belgium)	fr-be
French (Canada)	fr-ca
French (Switzerland)	fr-ch
French (France)	fr-FR
Galician (Galician)	gl-ES
Hungarian (Hungary)	hu-HU
Indonesian (Indonesia)	id-ID

Languages	Locale
Italian (Italy)	it-IT
Japanese (Japan)	ja-JP
Kazakh (Kazakhstan)	kk-KZ
Korean (Korea)	ko-KR
Lithuanian (Lithuania)	lt-LT
Latvian (Latvia)	lv-LV
Malay (Malaysia)	ms-MY
Norwegian, Bokmål (Norway)	nb-NO
Dutch (Belgium)	nl-be
Dutch (Netherlands)	nl-NL
Polish (Poland)	pl-PL
Portuguese (Brazil)	pt-BR
Portuguese (Portugal)	pt-PT
Romanian (Romania)	ro-RO

Languages	Locale
Russian (Russia)	ru-RU
Slovak (Slovakia)	sk-SK
Slovenian (Slovenia)	sl-SI
Serbian (Cyrillic, Serbia and Montenegro (Former))	sr-Cyrl-CS
Serbian (Latin, Serbia and Montenegro (Former))	sr-Latn-CS
Swedish (Sweden)	sv-SE
Thai (Thailand)	th-TH
Turkish (Turkey)	tr-TR
Ukrainian (Ukraine)	uk-UA
Vietnamese (Vietnam)	vi-VN
Chinese (Simplified, PRC)	zh-CN
Chinese (Traditional, Hong Kong S.A.R.)	zh-HK
Chinese (Traditional, Taiwan)	zh-TW

Session 14

Innovation backlog app

Use the Innovation Backlog app to manage app and flow ideas

The Center of Excellence wants to ensure the most impactful and valuable scenarios are selected for development. They want to ensure ideas are submitted via a standard process that gathers information on personas, tools, and pain points.

A canvas app can be used by everyone in the organization to describe their ideas and pain points, or vote on existing ideas.

For more information:

[Use the Innovation Backlog app to manage app and flow ideas - Power Platform | Microsoft Docs](#)

[Set up Innovation Backlog components - Power Platform | Microsoft Docs](#)

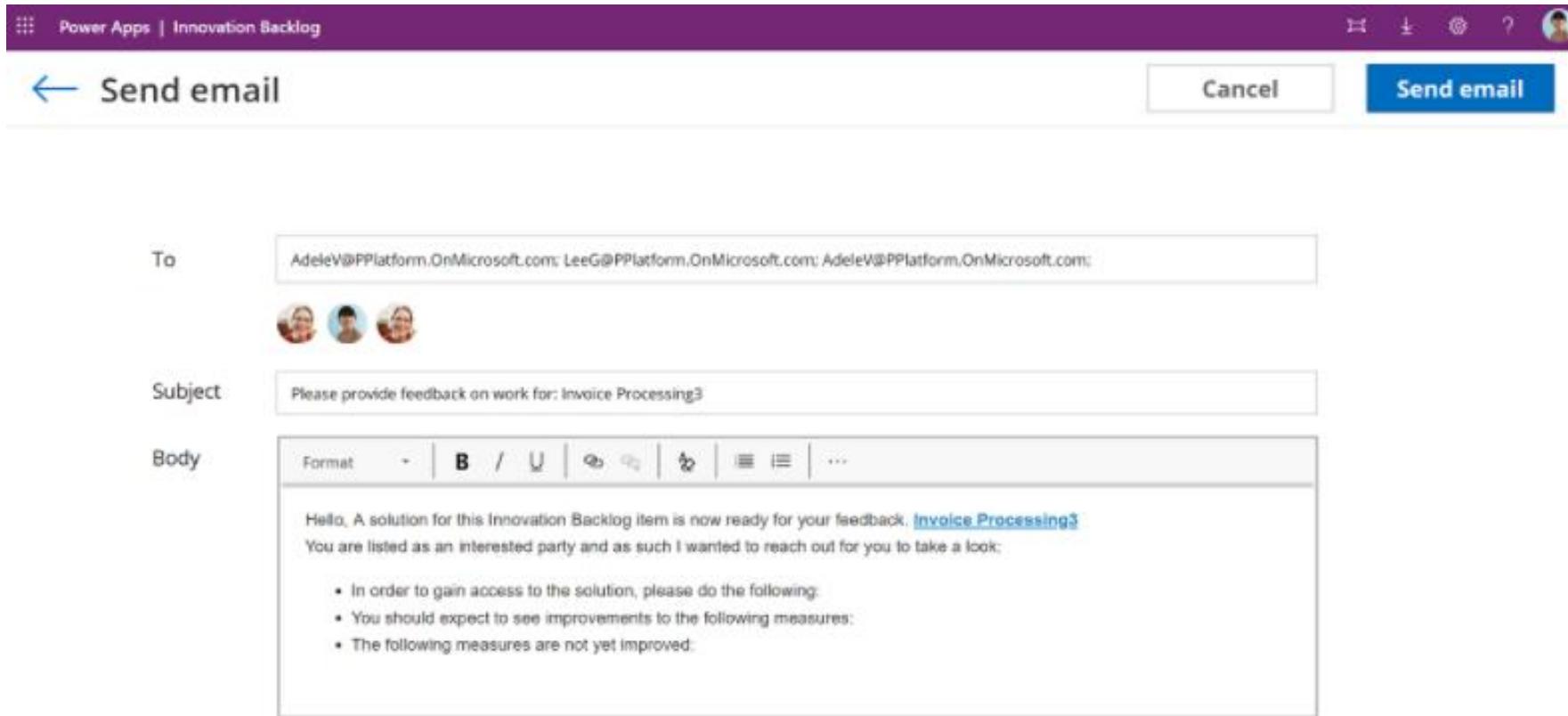
Business team add a new idea

Power Apps Innovation Backlog

Submitted Ideas

	Edit Email voters Email creators Share Send for testing Get feedback on solution	
+ Add idea		
Supplier Invoice Processing Developer Owner: Available Not configured 108.7 hours/month Complexity	Idea Supplier Invoice Processing Remove like Pain Points Time Consuming Manual Work, Error Prone, Data Loss	Number of Likes: 1 New Edit status Developer Owner Available Edit dev owner
	Estimated return on investment Not Configured 108.7 hours/month	
	Complexity Complexity	Being developed for + Add team repro Finance
	Keywords invoice, excel	
	Tools 	

CoE pick an idea for development



The screenshot shows a Microsoft Power Apps interface for sending an email. The title bar reads "Power Apps | Innovation Backlog". The main area is titled "Send email". It includes a "Cancel" button and a "Send email" button. The "To" field contains three email addresses: AdeleV@PPlatform.OnMicrosoft.com, LeeG@PPlatform.OnMicrosoft.com, and AdeleV@PPlatform.OnMicrosoft.com. Below the "To" field are three small circular icons representing the recipients. The "Subject" field contains the text "Please provide feedback on work for: Invoice Processing3". The "Body" field contains the following text:

Hello, A solution for this Innovation Backlog item is now ready for your feedback. [Invoice Processing3](#)
You are listed as an interested party and as such I wanted to reach out for you to take a look:

- In order to gain access to the solution, please do the following:
- You should expect to see improvements to the following measures:
- The following measures are not yet improved:

Vote on ideas and add your own scenario

Submitted Ideas

	Search	Edit	Email voters	Email creators	Share
+ Add idea					
Automate Environment Developer Owner: Available \$20,000.00 /month 0.2 hours/month Not Configured	Idea Automate Environment Provisioning	Being developed for + Add team repro	An app that will collect information about the		
	Pain Points Time Consuming Manual Work, Processing Delays				
Customer Feedback Developer Owner: Available \$12,777.00 /month 103.3 hours/month 25 Complexity	Estimated return on investment \$20,000.00 /month 0.2 hours/month	Number of Likes: 1 Add like	Status New		
	Complexity Not Configured		Edit status		
Find the Expert Developer Owner: Available \$4,953.00 /month 38.1 hours/month 28 Complexity	Keywords Power Platform Environment		Developer Owner Available		
	Tools 		Edit dev owner		
Make the Awesomizer actually Developer Owner: Available \$836.54 /month					

For deep dive, please sign up for

Power Automate in a day

Advanced Power Automate in a day

Power Platform Admin in a day

to learn more

Join the Power Automate Community



[Microsoft Power Automate Community](#)



Follow all the latest Power Automate news on the [Power Automate Blog](#)



Automate IT - Power Automate RPA Patterns and Practices [YouTube Channel](#)



[Monday & Tuesday Video Series on YouTube](#)



[Power Automate Product Roadmap](#)

Open discussion and feedback

Group discussion – How can we help you?

-  1 How will you be integrating these products within your business?
-  2 How do you see the business potential?
-  3 How do you see us vs. our competitors?
-  4 What are the biggest challenges/risks you will face when scaling these solutions? How can we help?
-  5 What else do you need from us to be successful?

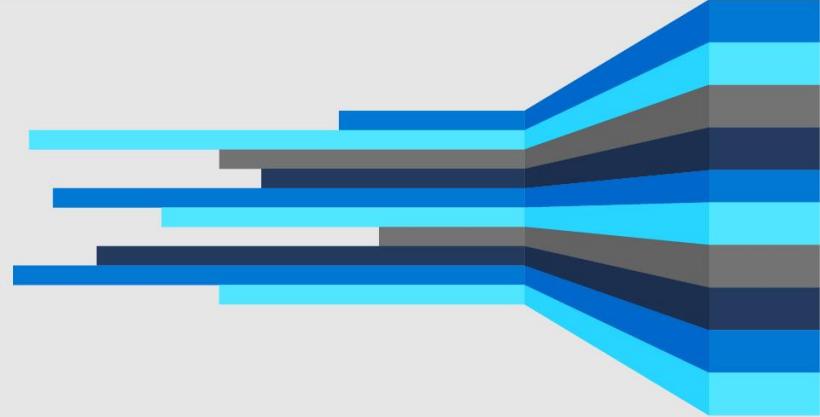


**Thank you!
Please complete the workshop survey to help
us continuously improve**

<http://aka.ms/rpaiad/feedback>

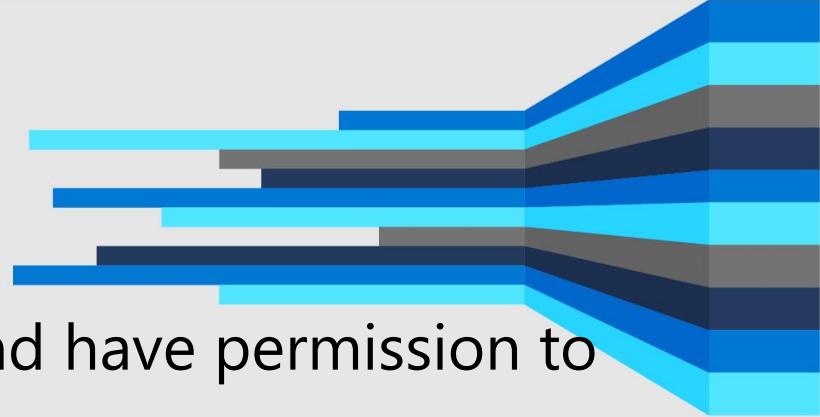
APPENDIX: Desktop flows Tips, Tricks and Troubleshooting

Desktop flows Tips and tricks



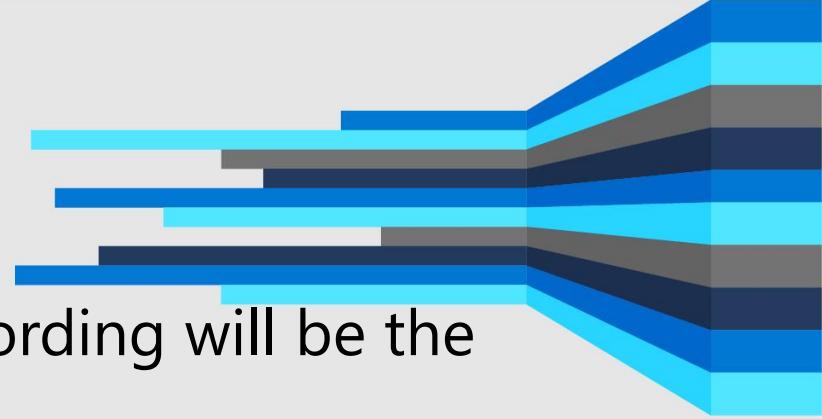
- Installing
- Recording
- Playback
- Edit and optimize
- Monitor the run
- Machine registration and groups
- Desktop flow Connection
- Unattended
- Web desktop flows
- Use the full power of Cloud + desktop flows

Installing



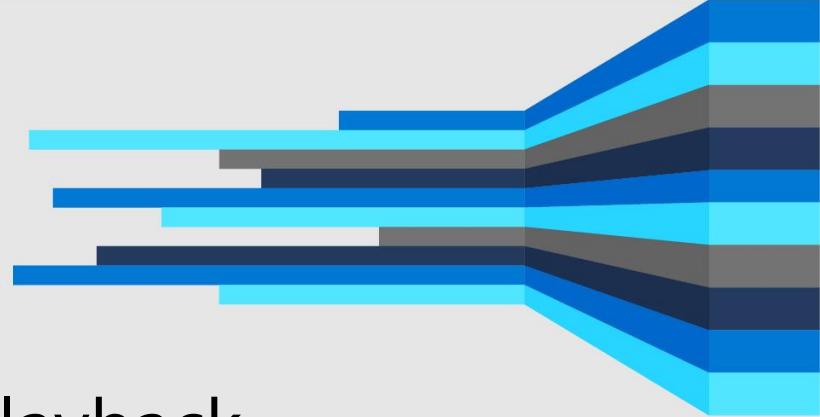
- ✓ Have a computer of Win10 or Win server 2016/2019 and have permission to install apps on it.
- ✓ For browsers, use Edge (chromium) or Chrome.
- ✓ Need to restart browser after installing.
- ✓ Make sure Power Automate Desktop app is running (not the dark color icon in the task bar, but a white color icon).
- ✓ Double check if the web extensions are enabled after installing Power Automate Desktop:
 - For desktop flow, you need one web extension "**Microsoft Power Automate Desktop**".
 - You don't need to uninstall then reinstall. You can upgrade directly.
- ✓ To run the desktop flow from a cloud flow, you also need to register the machine and create a desktop flow connection.

Recording



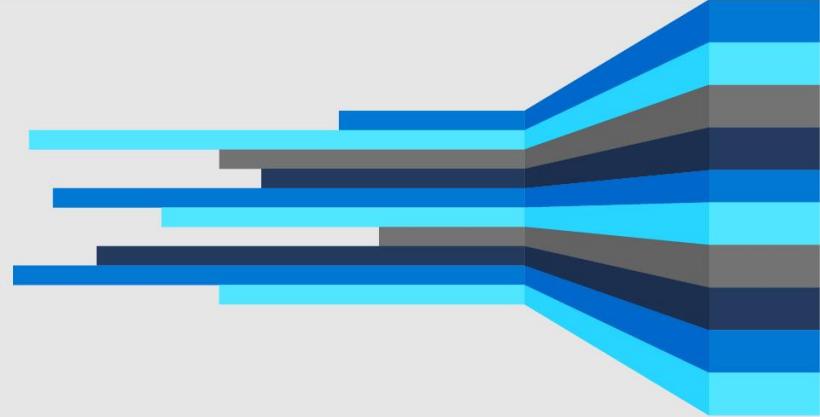
- ✓ Ensure that the keyboard layouts you use during recording will be the same as for playback.
- ✓ Use shortcuts instead of clicking. For instance, copy paste with `ctrl + c` & `ctrl + v` instead of right click copy.
- ✓ Use “enter static text” if you are working with strings for better readability.
- ✓ When you insert text into a field that already has text inside, you should click `ctrl + A` and backspace to clear up the field first.
- ✓ Playback uses accessibility by default, can fallback to coordinate as well if you turn it on:
 - Use a standard resolution and scale setting that across your recording and playback devices.
 - Maximize the application window that you are recording.
 - Finish the recording in one monitor if possible.

Playback



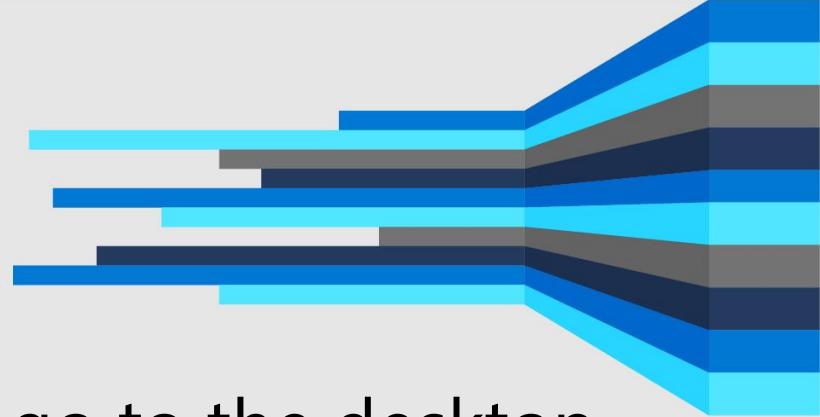
- ✓ Do not use the keyboard and mouse during playback.
- ✓ Try to adjust your app to have the same initial state as during recording time.
- ✓ Use the same keyboard and locale setting as during recording time.
- ✓ If you are using coordinate offset fallback:
 - Current coordinate-based fallback is conservative and ensures the control is same as what was recorded, including the size.
 - Use the same resolution and scale setting as recording time.
 - Maximize the app size to minimize disruption.

Edit and optimize your desktop flow



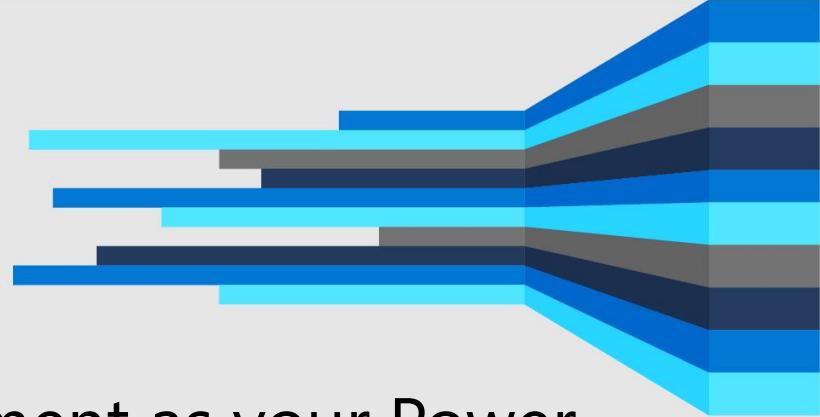
- ✓ Adjust the wait time in the designer. By default, the script waits as long as the recording process took.
- ✓ By default, desktop flows launches applications. You can edit the script to change if you want to launch or attach the app.
- ✓ Enable coordinate-based playback if you know your app is safe to be used in that mode.
- ✓ Add validation and error handling using advanced editor.

Monitor the run



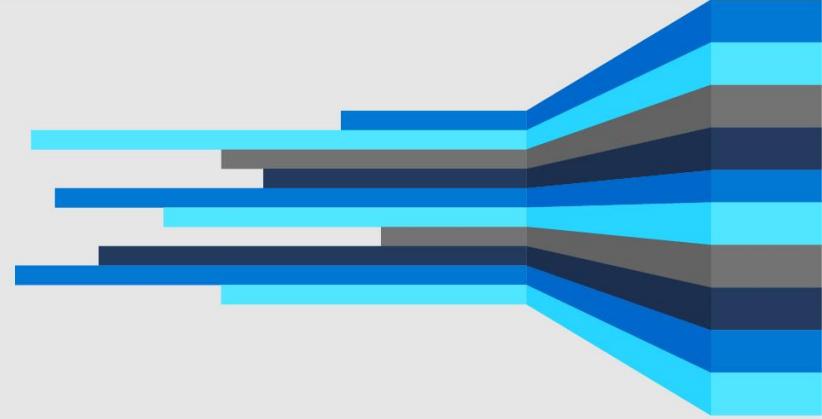
- ✓ If the flow run failed at the desktop flow step, go to the desktop flow page to look up run history from there to see detail error messages.

Machine registration



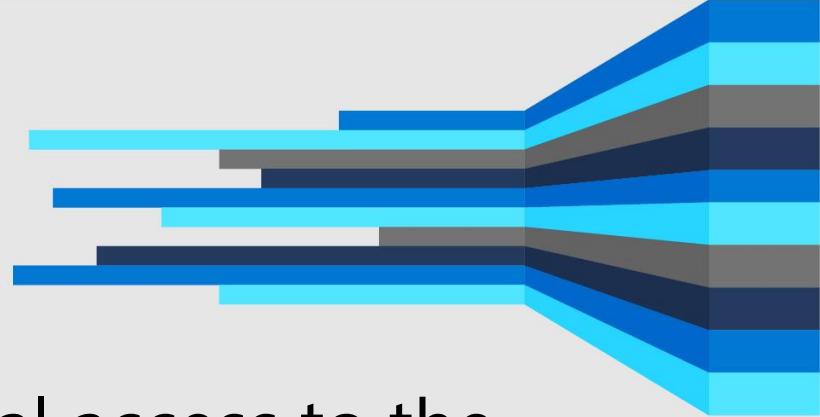
- ✓ Machine must be registered in the same environment as your Power Automate desktop flow. This is necessary to ensure data moving between the service and machine honors data sovereignty rules.
- ✓ Use the same account that you are logging into portal to setup the machine.
- ✓ If you need to switch environment, you must re-register machine.
- ✓ If you only need to switch an account, you can just log in using the new account.
- ✓ Machine will be online even if you're not logged in. You can check its status from the portal.

Machine groups



- ✓ Group is a set of machines.
- ✓ The group name can be any. Other machines are just added to this existing group (cluster).
- ✓ From the portal groups details page, you will see the other machines in this group.
- ✓ On the portal machines page, you can configure the group to run in distributed mode by toggle **Run on all machines in group**.
- ✓ If you are using local windows accounts, all VMs in the group must have the same local account with the same password, those are the credentials you should use when creating the desktop flow connection.

Desktop flow Connection



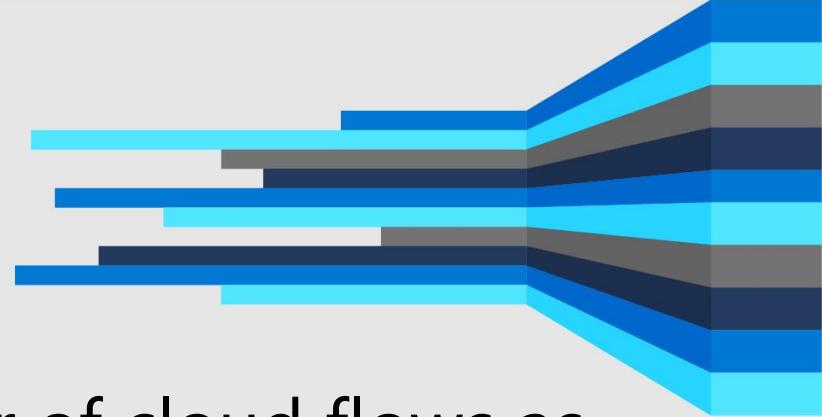
- ✓ Use a user account and password that has local access to the registered machine.
- ✓ Desktop flows supports local machine accounts, Active Directory accounts for AD domain-joined machines and Azure AD accounts for Azure AD-managed machines. Microsoft Account (MSA) is not supported.
- ✓ Make sure to check that you are using the correct connection if your desktop flow did not run successfully.
- ✓ When registering a machine, you can as well add it to an existing group.

Unattended



- ✓ Unattended mode executes when user is not signed in. Remember to log off from the session (lock the screen is not enough) when running in unattended mode – you should type “logoff” from the windows command bar and select it if you’re working on the machine yourself.
- ✓ You can distribute unattended desktop flow to a group of machines to fully utilize the resource pool capacity.
- ✓ Make sure the machine shows online (so the VMs are turned on)
- ✓ Troubleshooting sequences:
 1. Desktop flow testing -> make sure your desktop flow app and extension are installed and enabled.
 2. Attended flow testing -> make sure the connection is correct, machine is online and execute the run in attended mode
 3. Unattended flow testing.

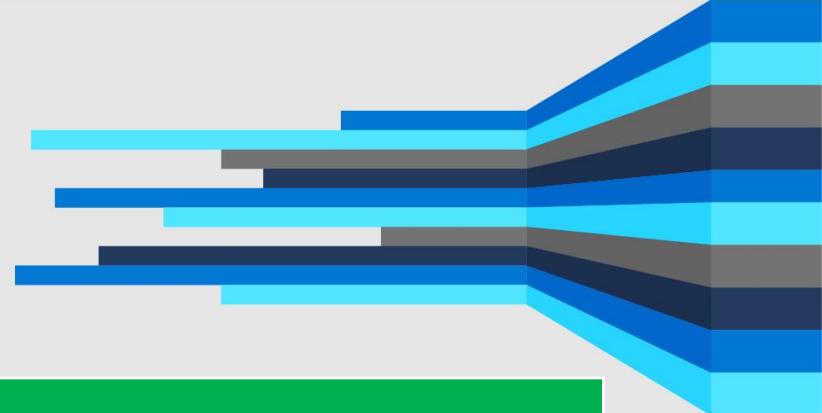
Use the full power of cloud + desktop flows



Desktop flows are not standalone. Use the power of cloud flows as well. This includes:

- Loops, use the loops on cloud flows.
 - Loops can also execute in parallel, enabling you to run desktop flows in parallel on a cluster
 - Loops also supported in Power Automate Desktop and are useful for local processing
- Passing parameters into the desktop flow and retrieving outputs
 - Pass in usernames and passwords
 - Retrieve generated identifiers for use in additional API calls or to report to the user
- Connecting to data sources such as LOB apps, SQL, Excel.
- Etc.

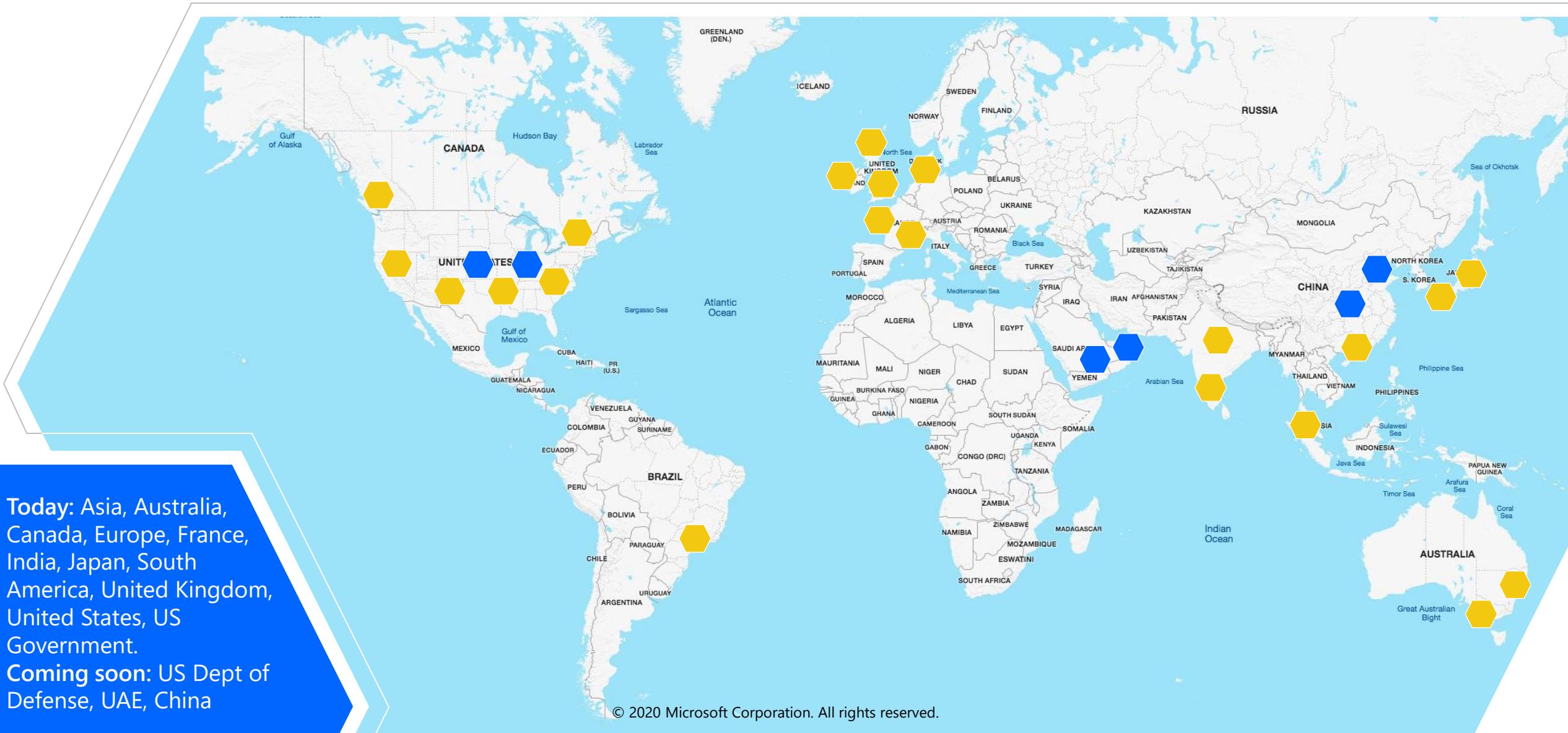
When to use desktop and cloud flows



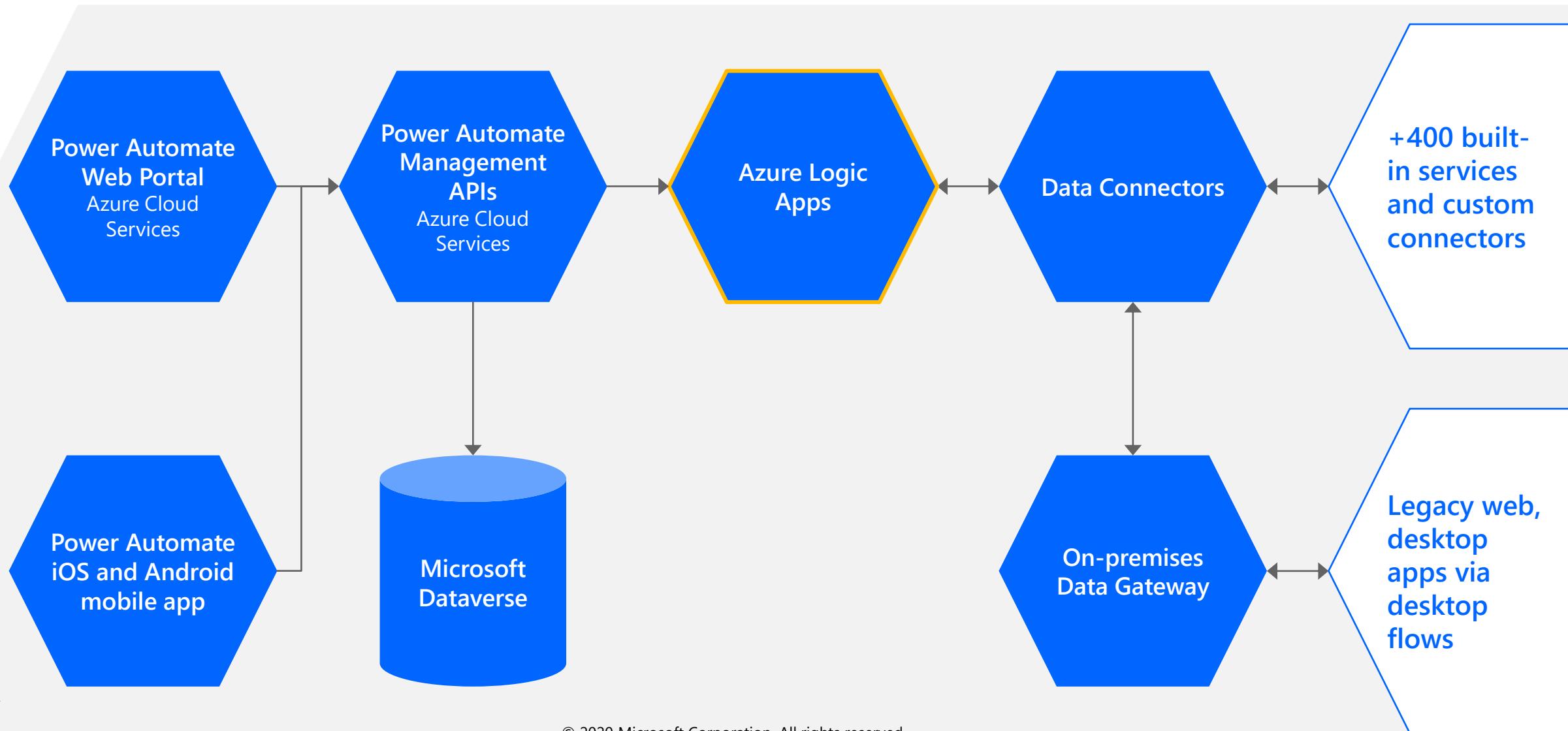
	When to use
cloud flow	<ul style="list-style-type: none">• Higher reliability than UI automation• Runs in the Power Automate service at planet scale• Resistant to software UI updates• 470+ connectors available, no-code custom connectors can be created
desktop flow	<ul style="list-style-type: none">• When APIs are not available• Easy to create, driving high ROI & user reach within corporations

APPENDIX: Architecture Details

Geographic availability

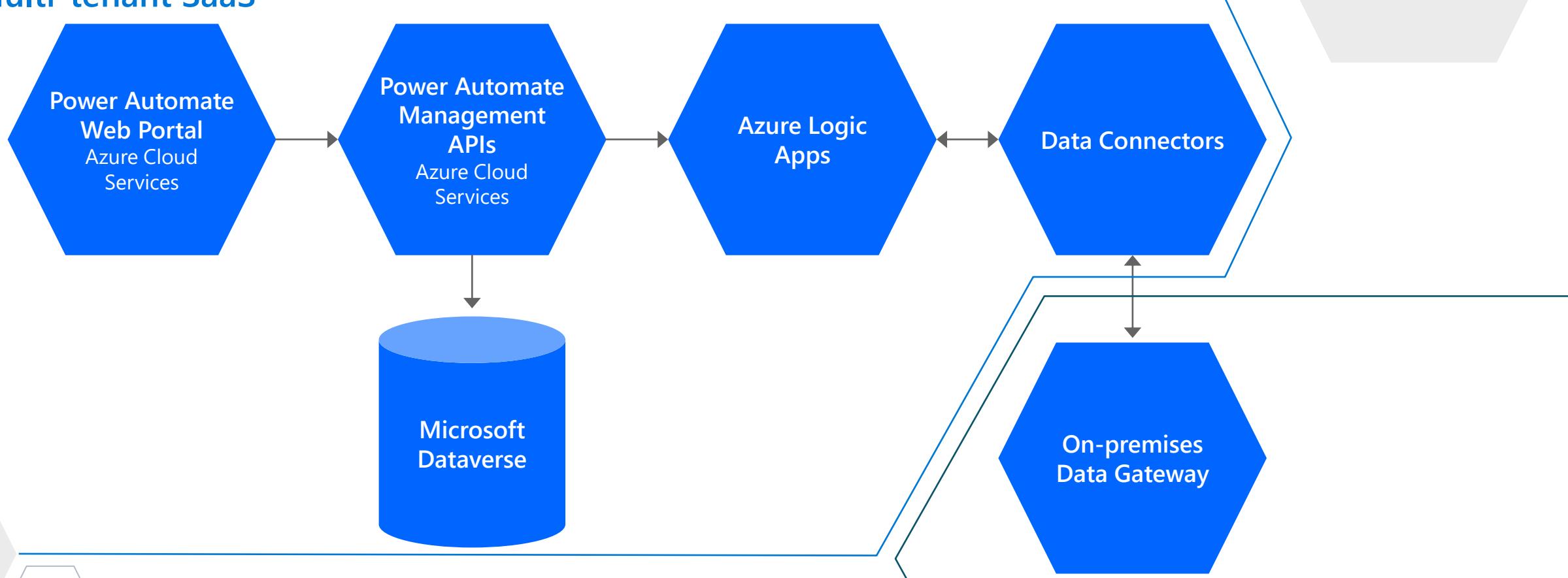


Overall Product Architecture



Product Scalability

Multi-tenant SaaS



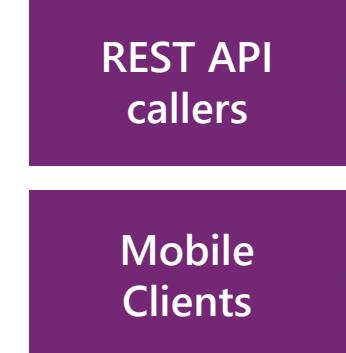
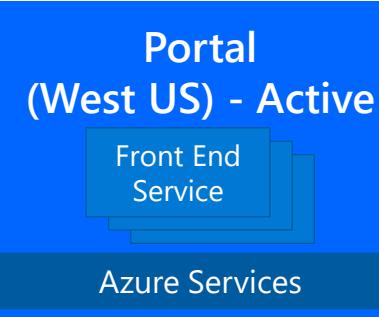
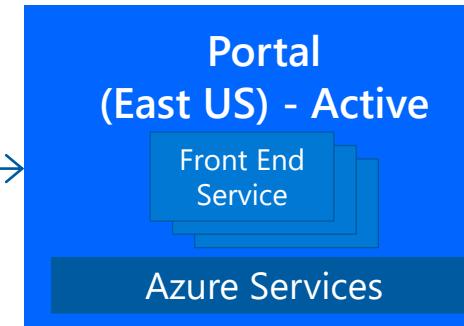
Multi machine clustering set up by
our customers on their infrastructure

Management Components

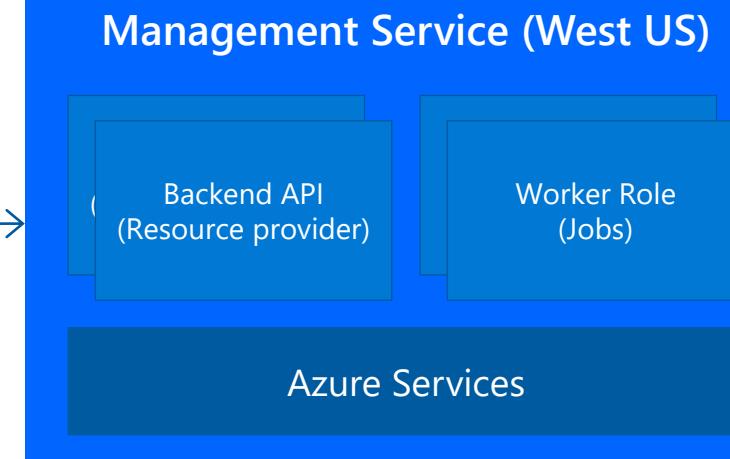
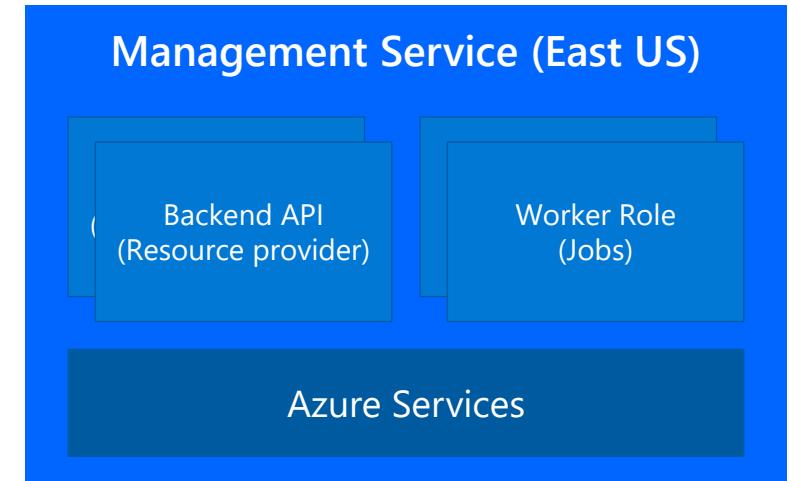
Web
Browsers



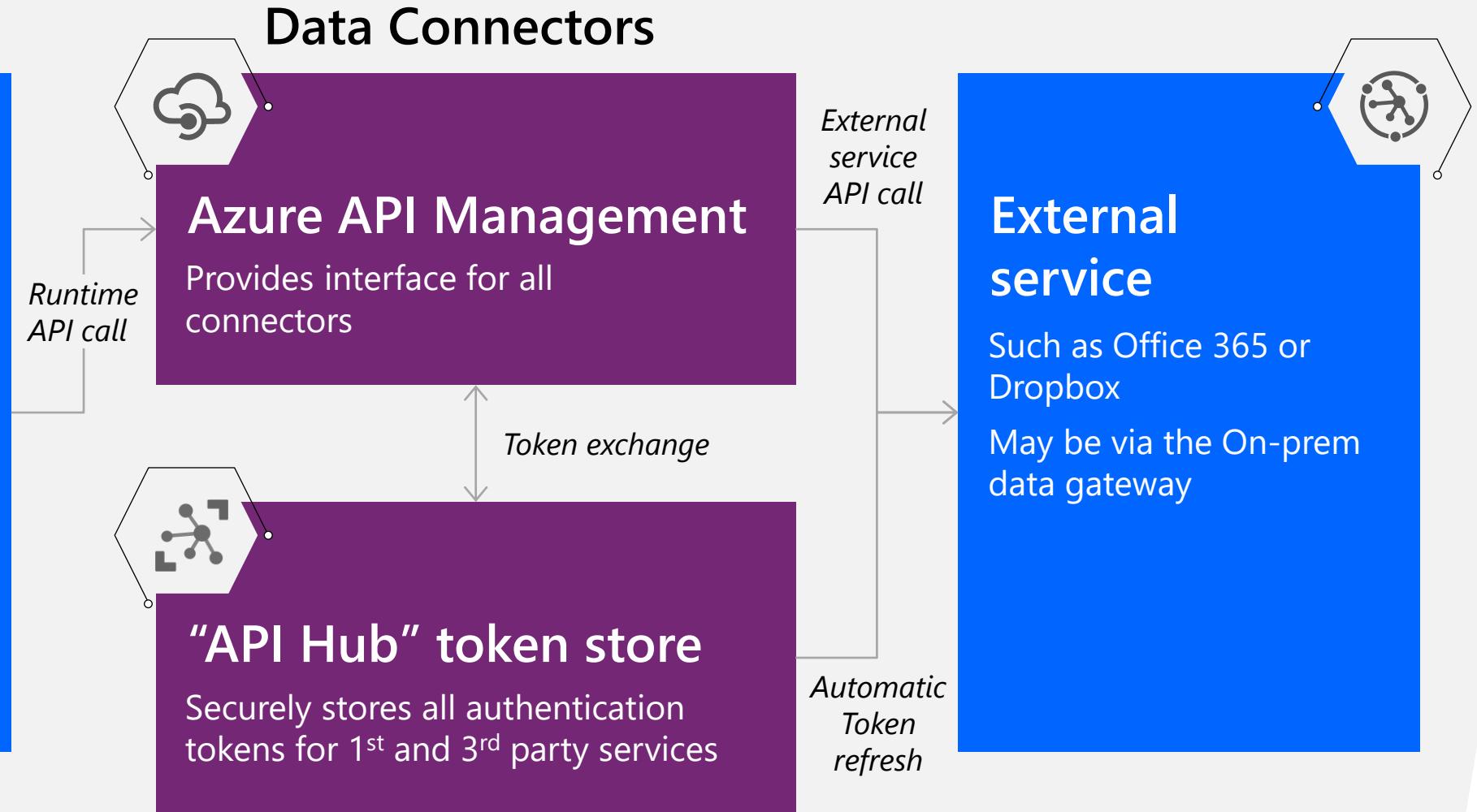
DNS LOAD
BALANCER



DNS LOAD
BALANCER



Flow runtime

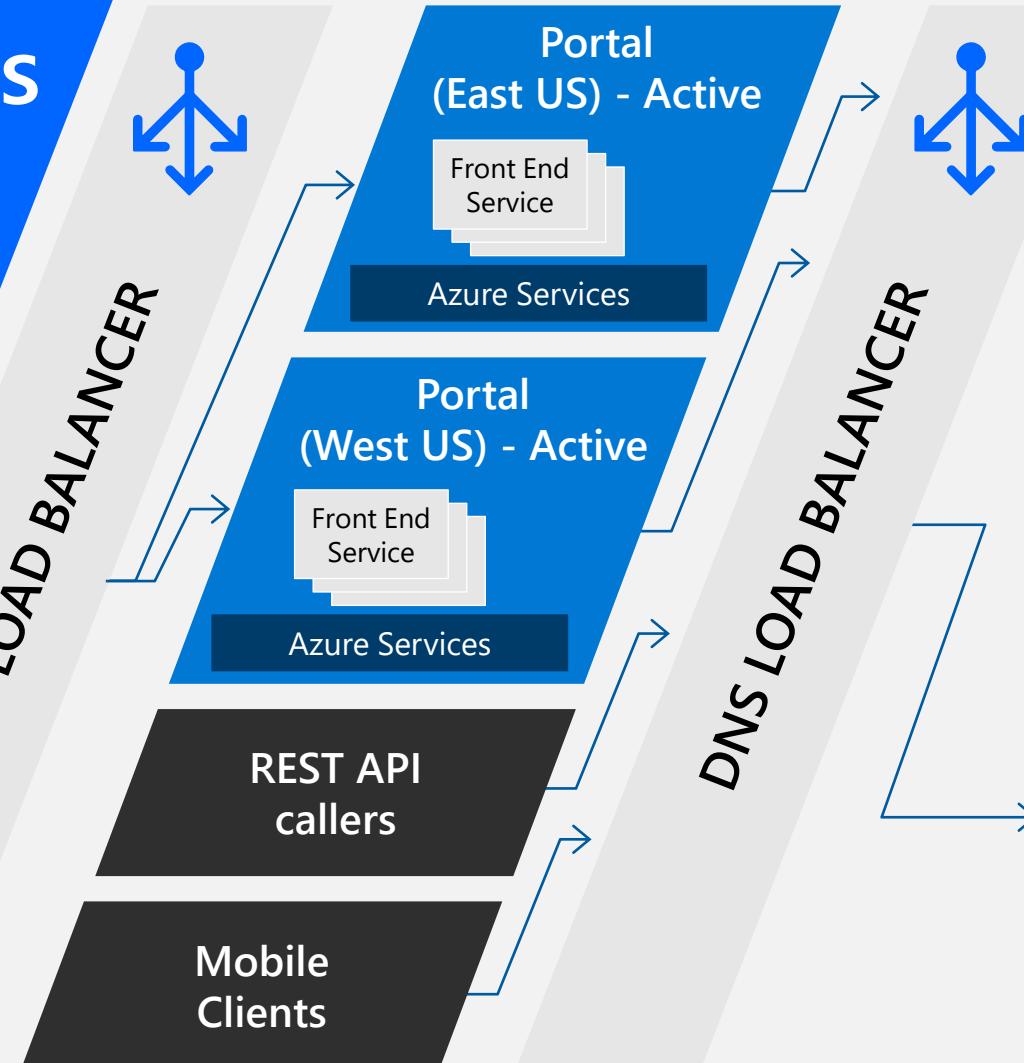


Management Components

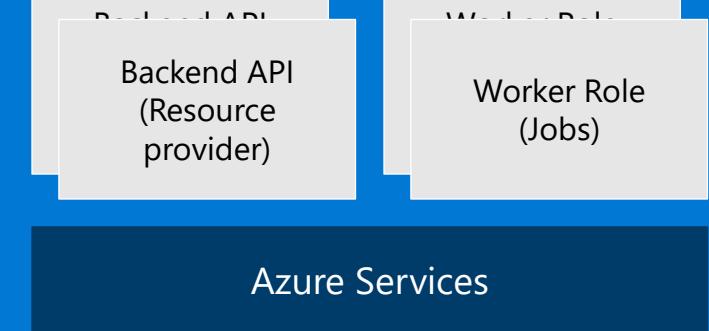
Web
Browsers



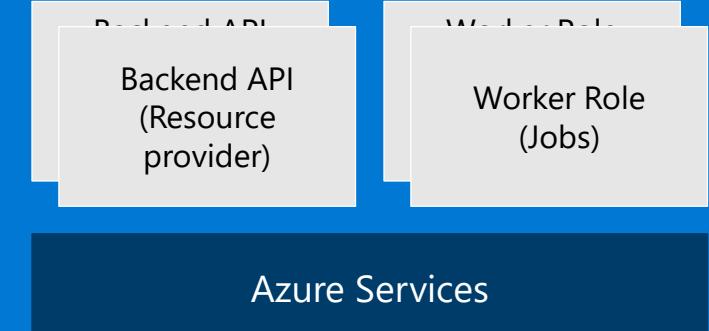
DNS LOAD BALANCER



Management Service (East US)



Management Service (West US)



Flow runtime

