



Automation in a day

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	0	Environment and account check. Setup lab. Troubleshooting	60 minutes
Workshop officially starts here				
Part I: Introduction	0.5 hour	1	Introduction to RPA, Power Automate, and desktop flows	30 minutes
10 mins break				
Part II: Desktop Flows Basic	2 hours	2	Create your first Power Automate desktop flow	30 minutes
		3	Use Input & Output Parameters	30 minutes
		4	Use desktop flow in Power Automate through gateway and connection	60 minutes
60 mins lunch				
Part III: Hyper Automation Integration	1.5 hour	5	Connect to Outlook	30 minutes
		6	Integrate with AI Builder	30 minutes
		7	Integrate with Microsoft Teams	30 minutes
10 mins break				
Part IV: Add Power Automate for desktop Web and Excel in Power Automate	1.5 hours	8	Add Power Automate for desktop Web and Excel capabilities	90 minutes
10 mins break				
Part V: Advanced Topics (optional)	3.5 hours	9 10 11 12	Unattended desktop flows Error handling Monitor Desktop flow runs and manage gateway queue Identify automation opportunities and process bottlenecks using Process advisor	4 hours
10 mins break				
Part VI: Closing	0.5 hour	13	Roadmap, Licensing, Q&A, Closing and Survey © 2023 Microsoft Corporation. All rights reserved.	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 – Contoso Coffee shop company Invoice processing



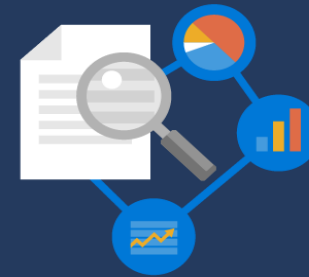
A vendor of Contoso Coffee shop has delivered the order and would like to process the invoice. The vendor sent the invoice pdf file to Contoso Coffee shop by email



Power Automate monitored the inbox of Contoso Coffee shop, used AI builder to extract information from the invoice file attachment



Power Automate sent an approval request to human supervisor from Microsoft Teams to confirm the order received



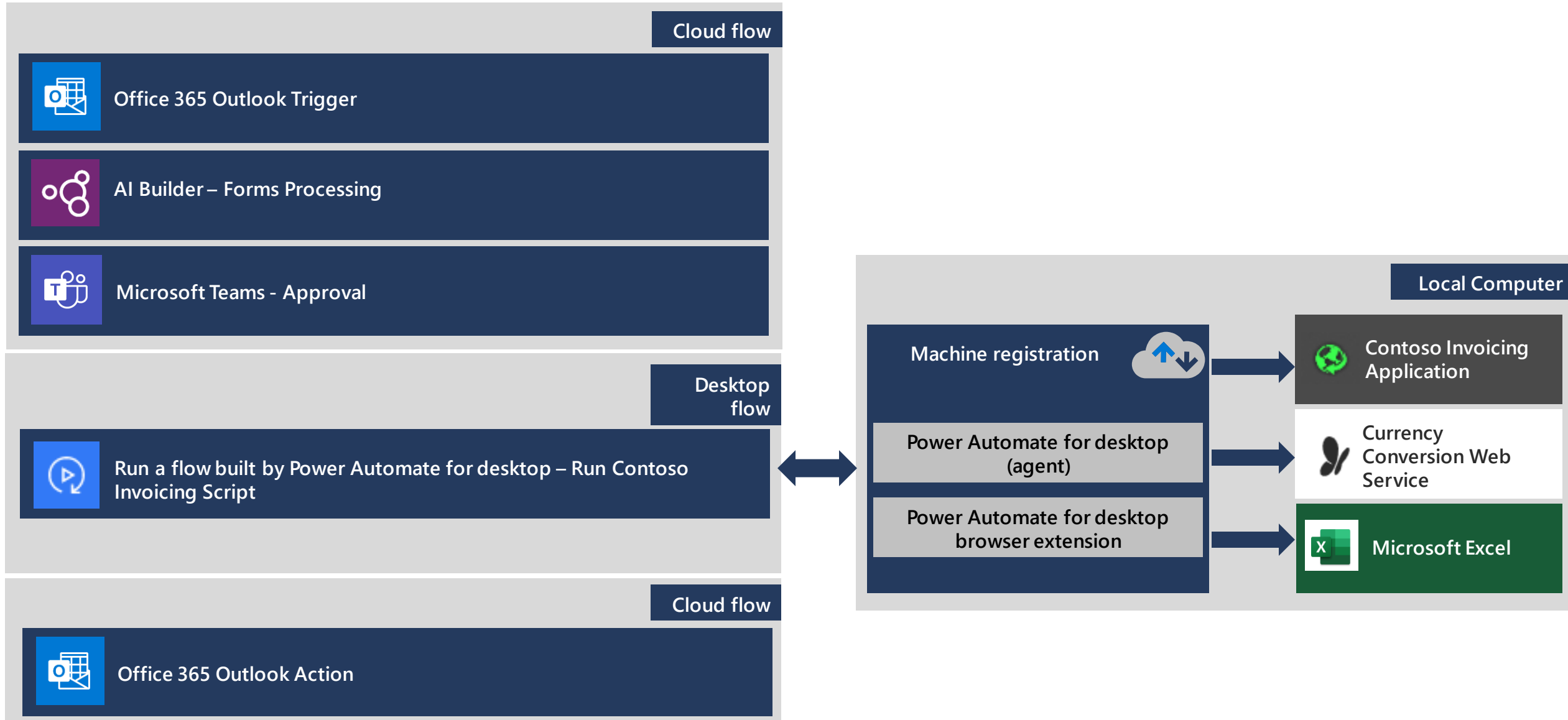
Power Automate desktop flow will open the legacy win32 application that Contoso Coffee shop using to manage invoices and fill in the invoice details

A web-based real-time currency conversion is used and an audit log is captured in Microsoft Excel



Power Automate sent an email back to the vendor to notify that the 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



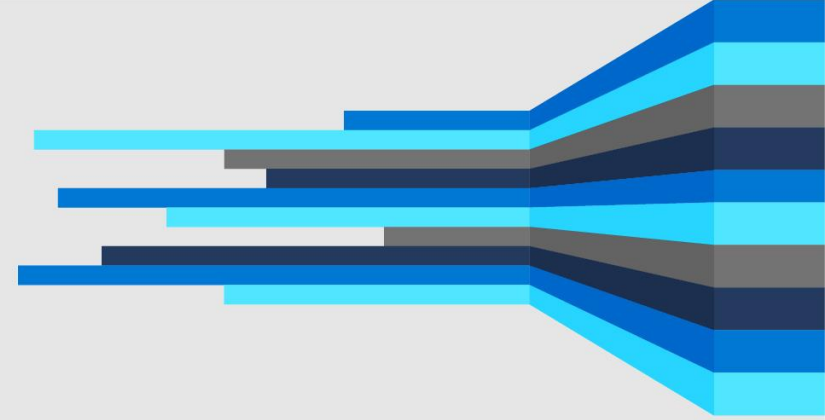
Desktop flows



Architecture



Lab overview

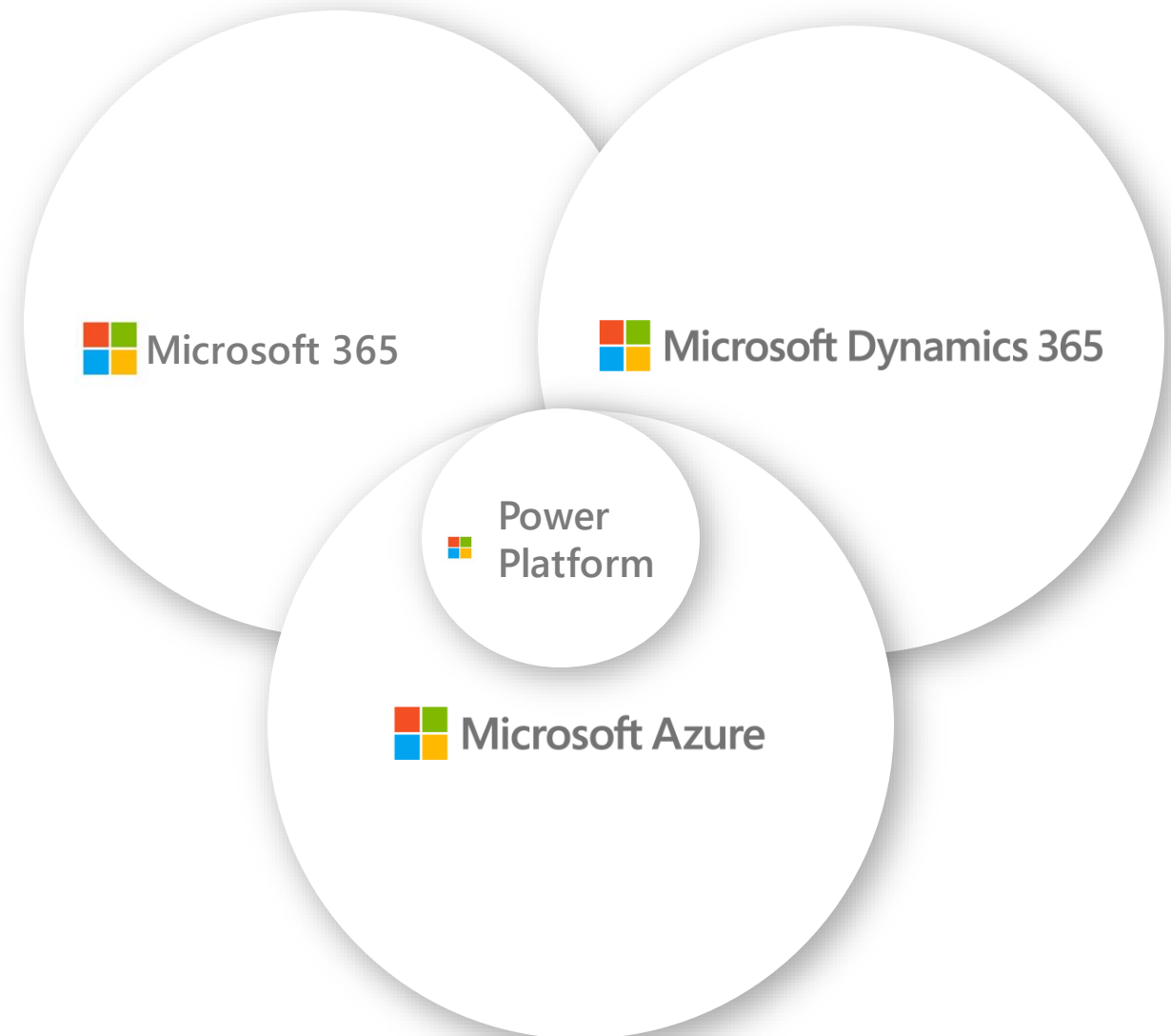


Microsoft cloud

Intelligent business applications

Productivity and collaboration

**Open, flexible, enterprise-grade cloud
computing platform**



Microsoft Power Platform

The low-code platform that spans Office 365, Azure, Dynamics 365, and standalone applications

Innovation anywhere. Unlocks value everywhere.



Power BI

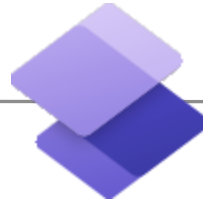
Business analytics



Power Apps

Application development

- Canvas Apps
- Model-driven Apps



Power Pages

Secure business websites



Power Automate

Process automation

- Cloud Flows & Teams Flows
- Business Process Flows
- Desktop Flows



Copilot Studio

Intelligent Copilots



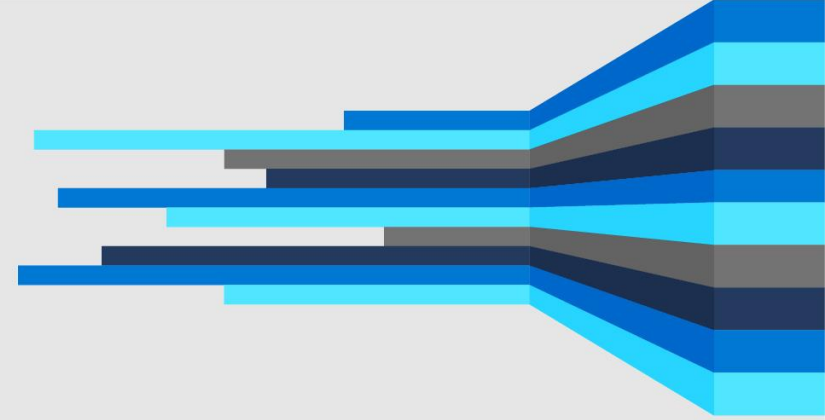
**Data
connectors**



AI Builder



Dataverse



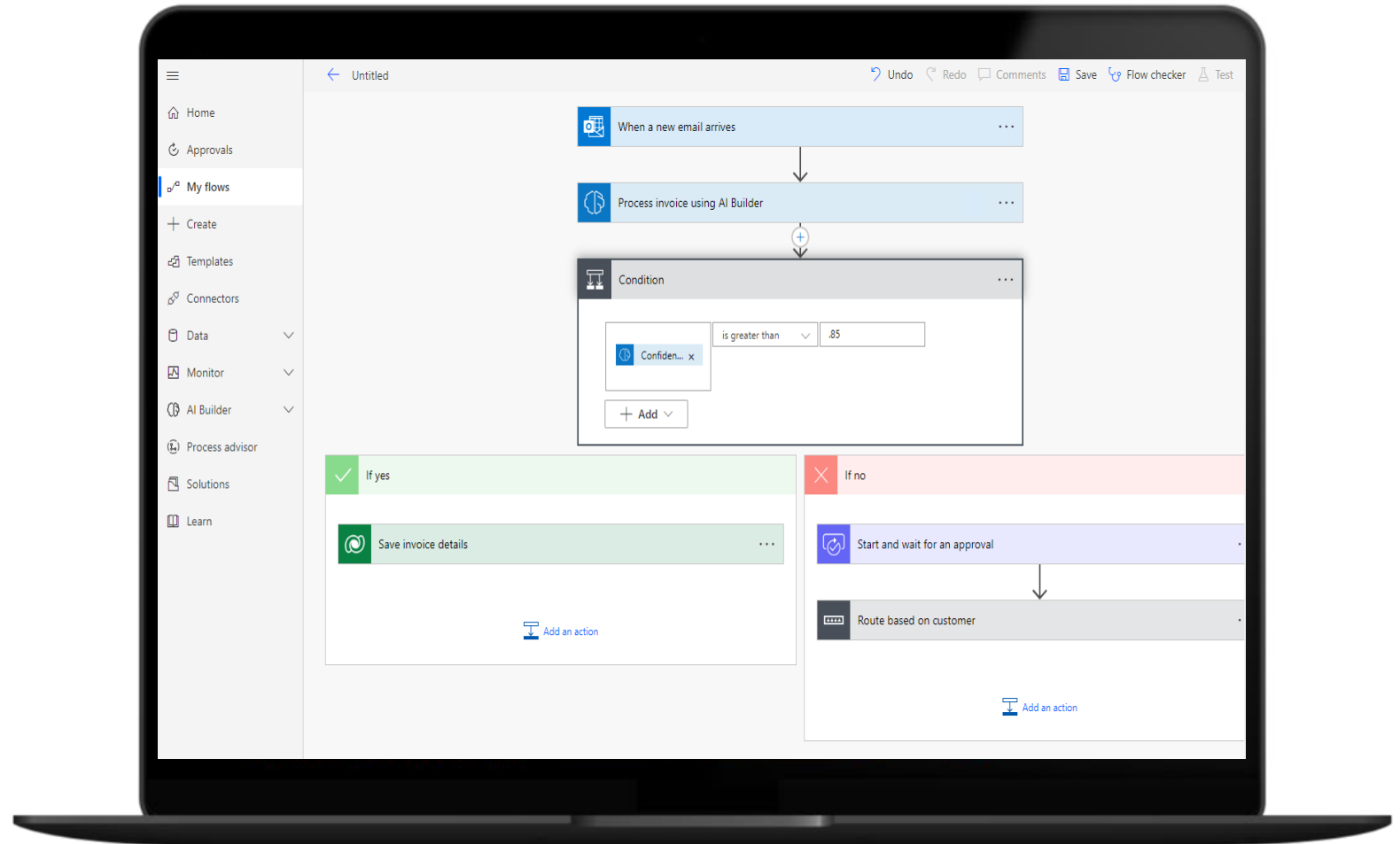
Power Automate Vision:
People should only have to focus on
tasks where they can bring unique
human value

Their potential is limitless.
But their time is not.



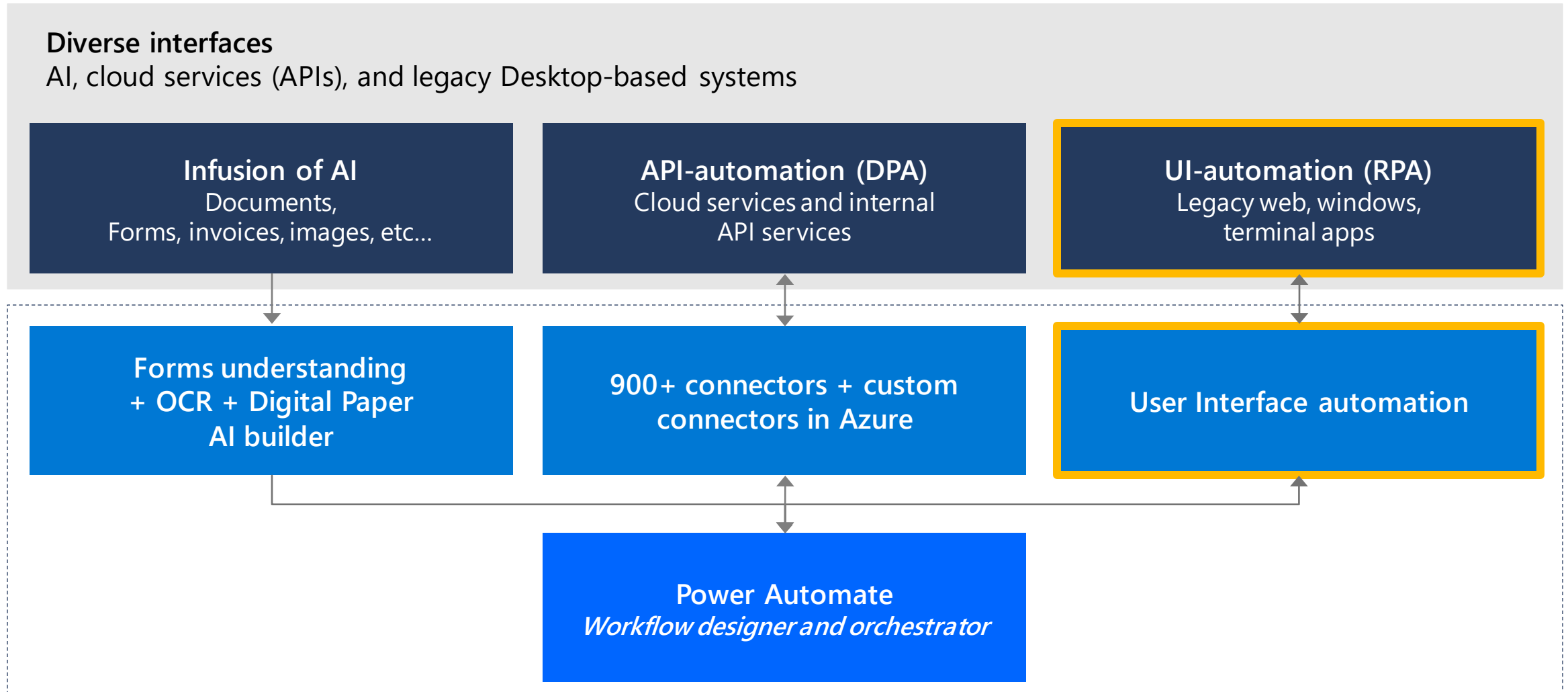
Microsoft Power Automate

Holistic end-to-end
intelligent automation
platform for all





Hyper Automation



Microsoft Power Automate value pillars



**Automation
at scale**



**Seamless, secure
integration**



**Accelerated
productivity**



**Intelligent
automation**

App Connectors



**Hundreds of
app connectors**
(including on-prem applications)

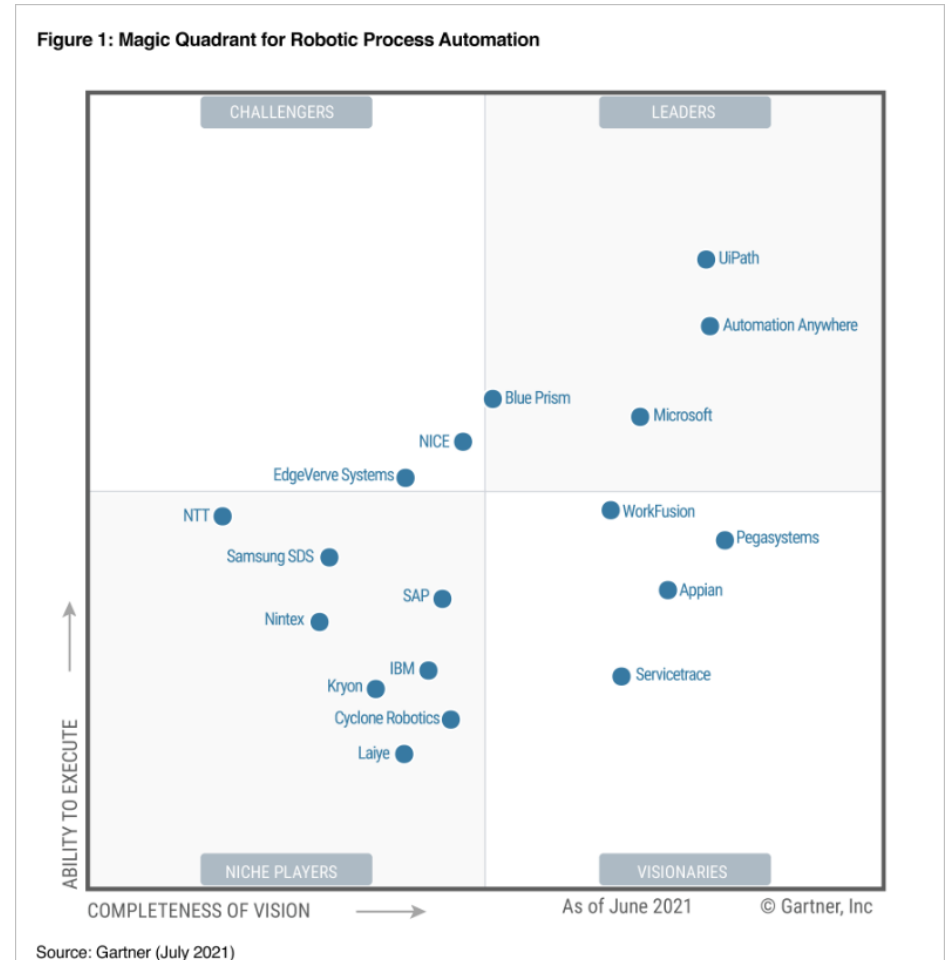
RPA market landscape

#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**



Recognition as Leader in 2021 Forrester Wave report

- **Strong momentum for Power Automate:**

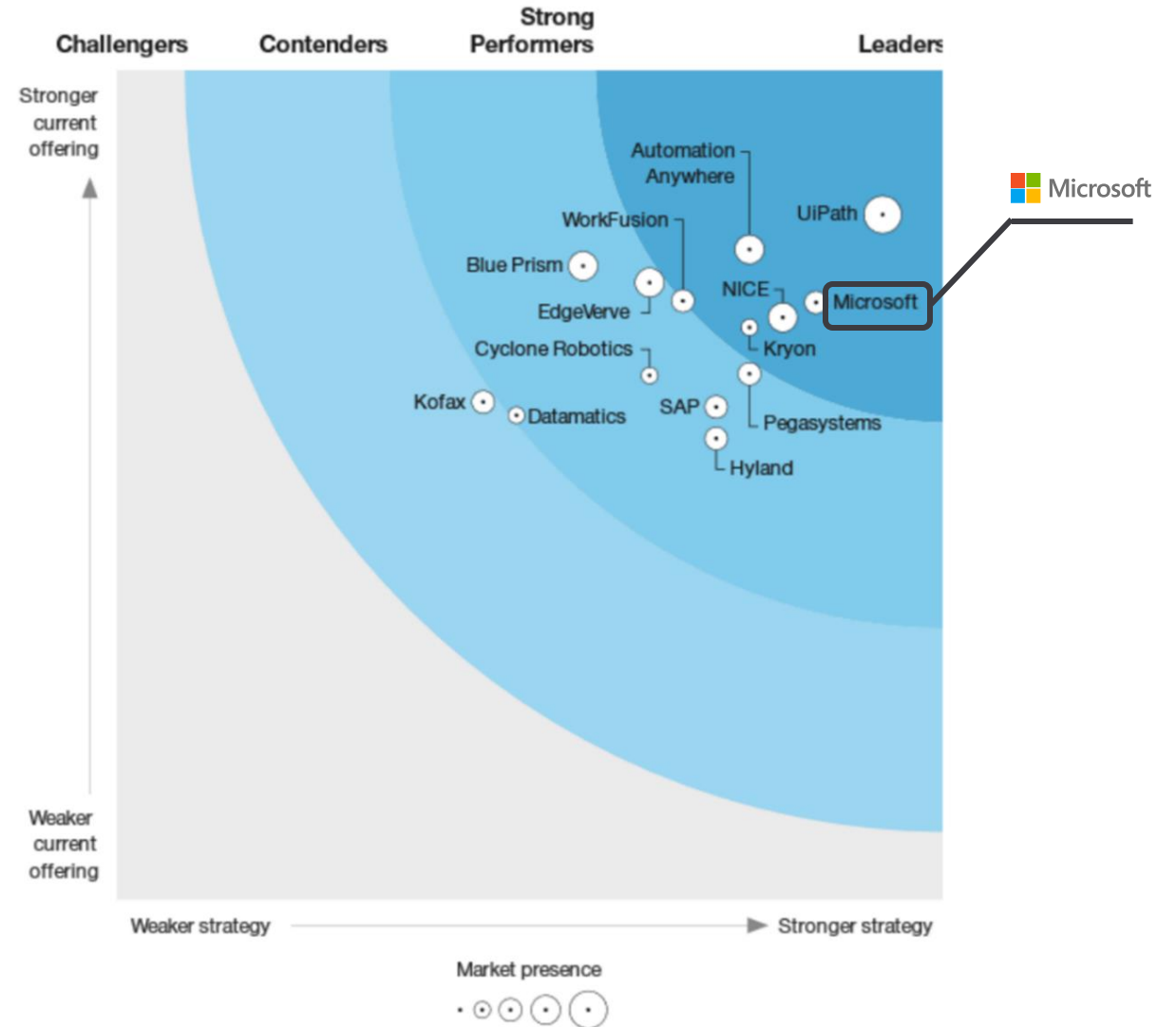
"Microsoft has caught up with the Leaders. The software giant's vision is to deliver the most comprehensive SaaS-based intelligent automation solution; Power Automate is a cloud-native, low-code automation platform that brings together UI- and API-based automation with AI."

- **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."

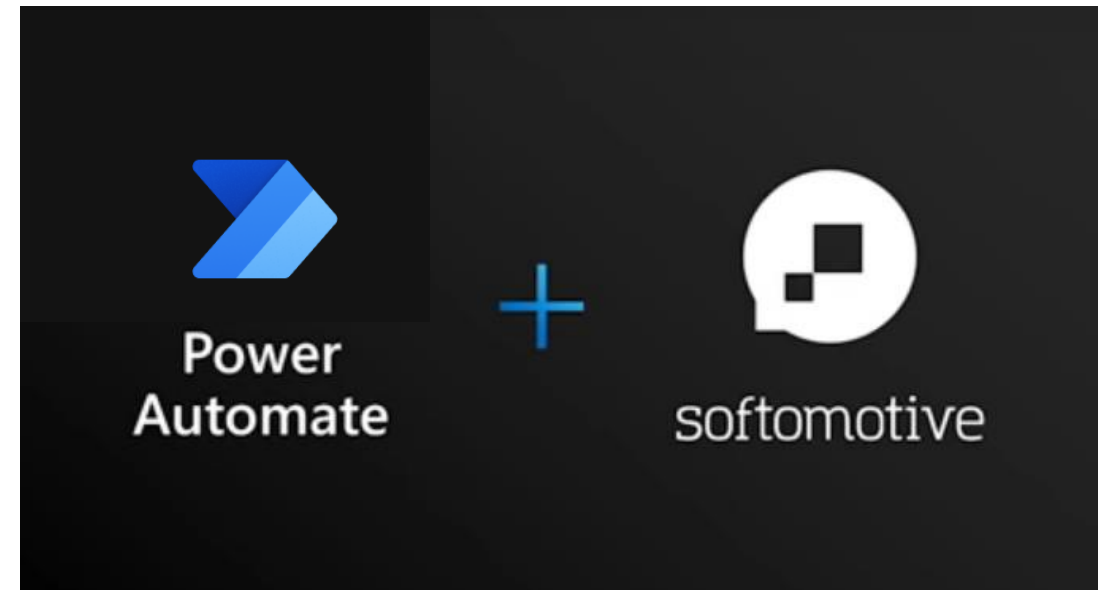


Microsoft acquired Softomotive to expand low-code robotic process automation capabilities in Microsoft Power Automate

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

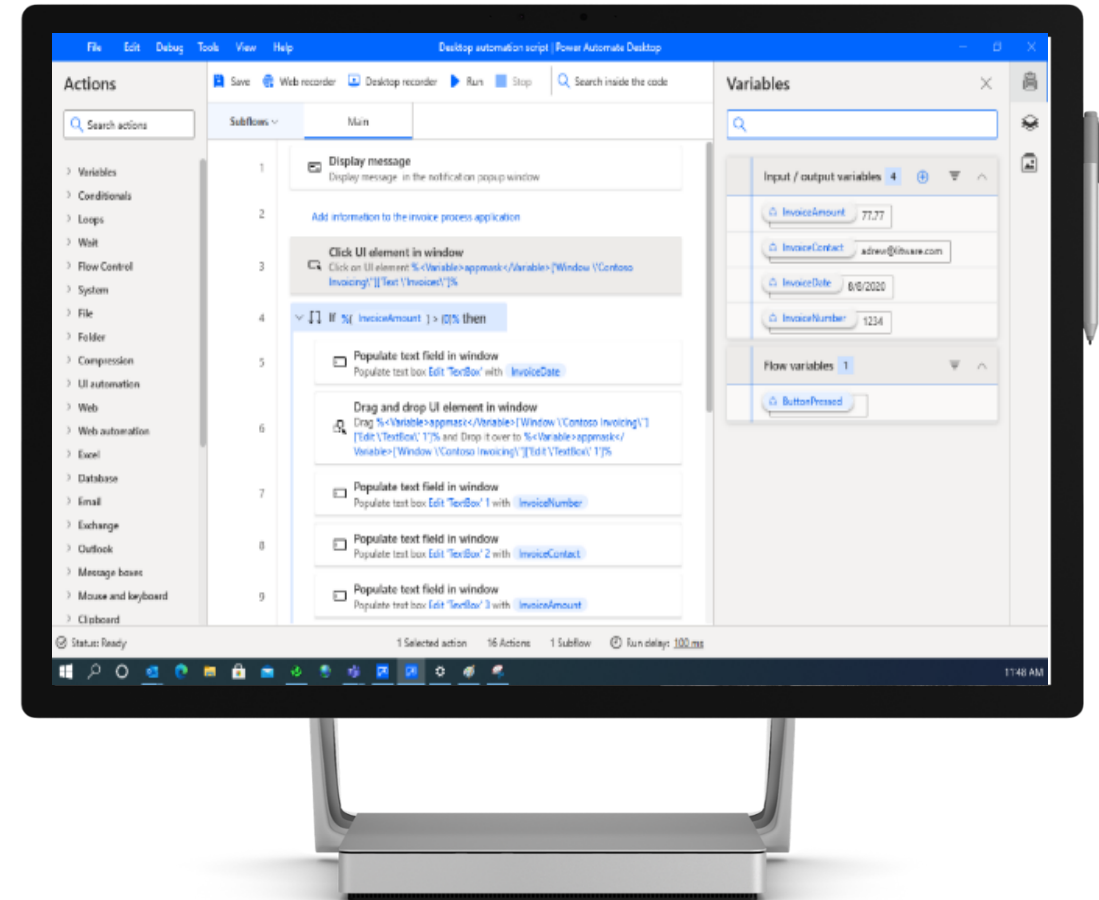
WinAutomation, expands the Microsoft Power Automate capabilities, through it's Web & UI Automation, interaction with Legacy systems and Terminals, Java applications as well as Citrix Automation.

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



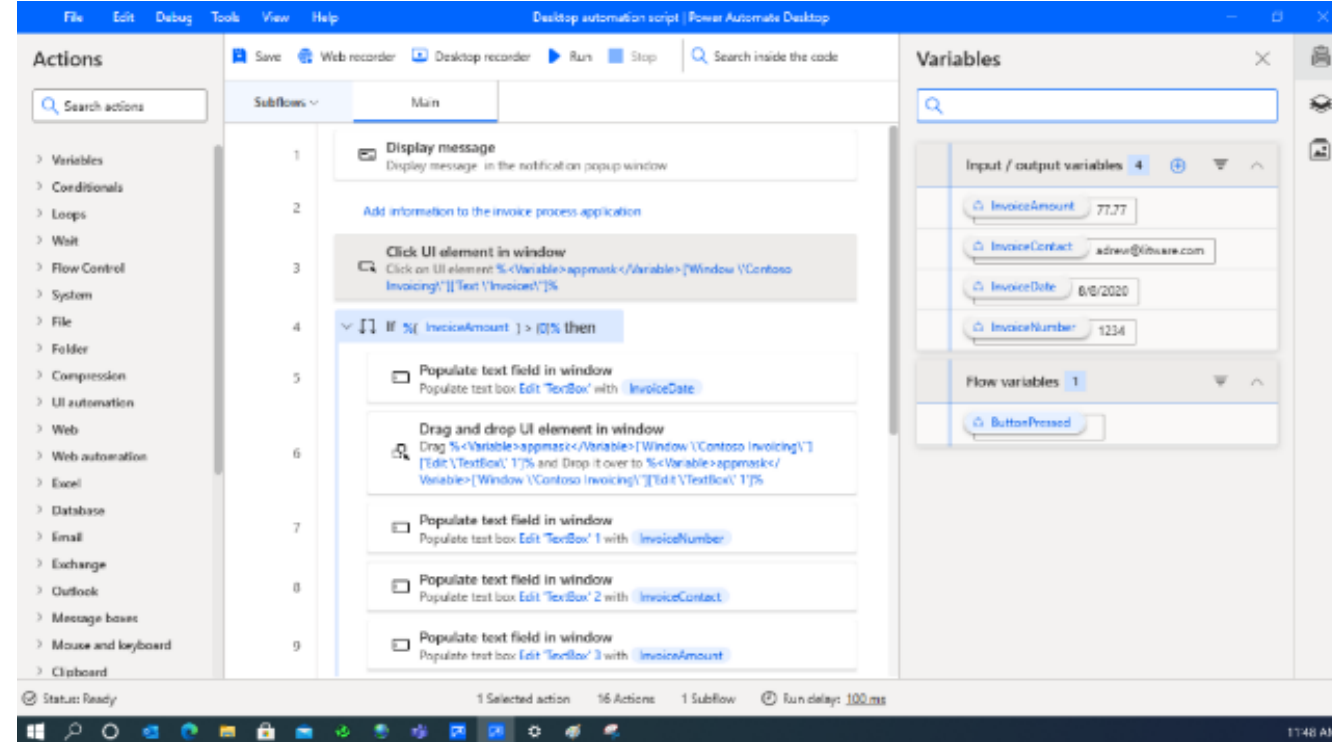
Microsoft Power Automate

Automate modern applications
Automate legacy applications



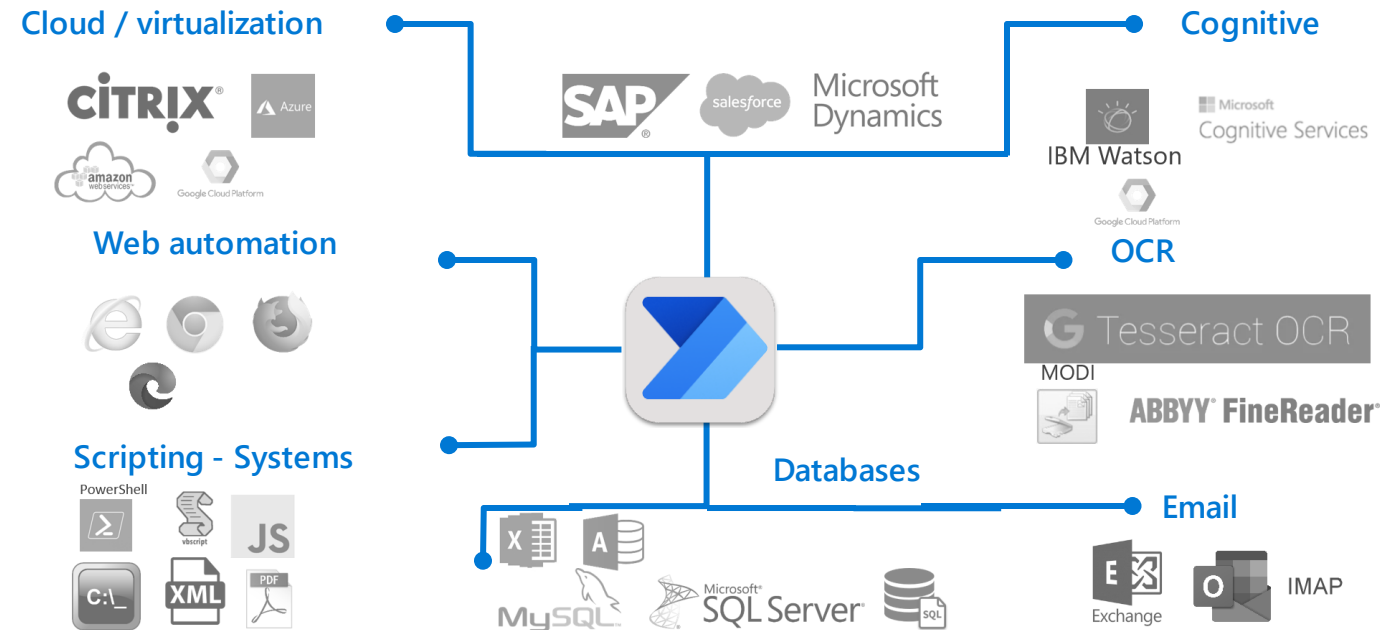
Introducing Power Automate desktop flows

- 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

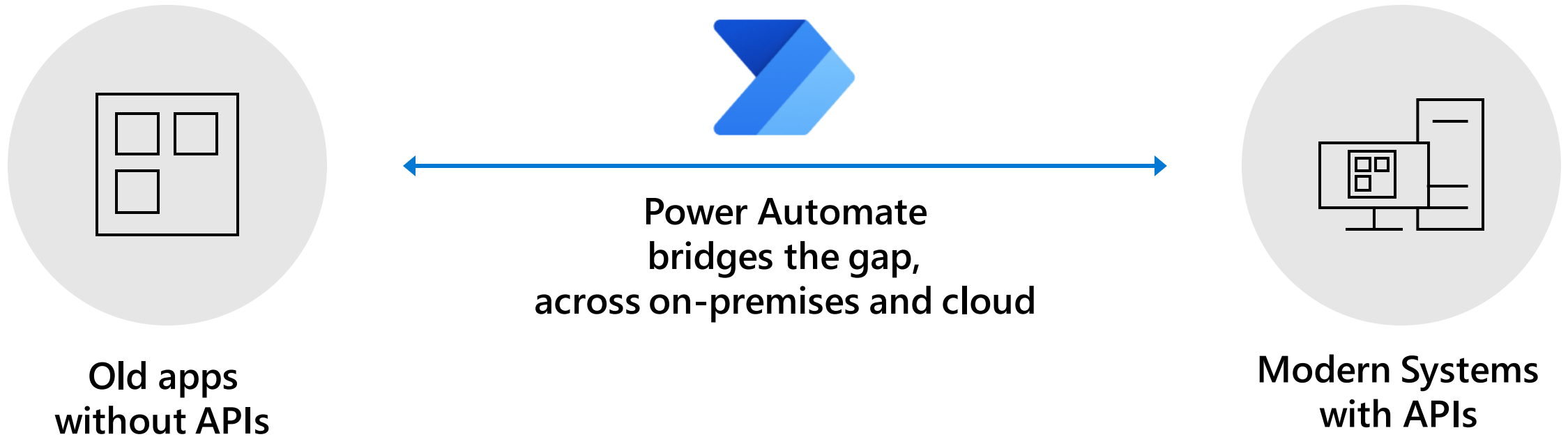


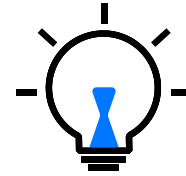
Power Automate for desktop Includes more 400 actions covering all users needs

- 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



Bridging automation between the old and new

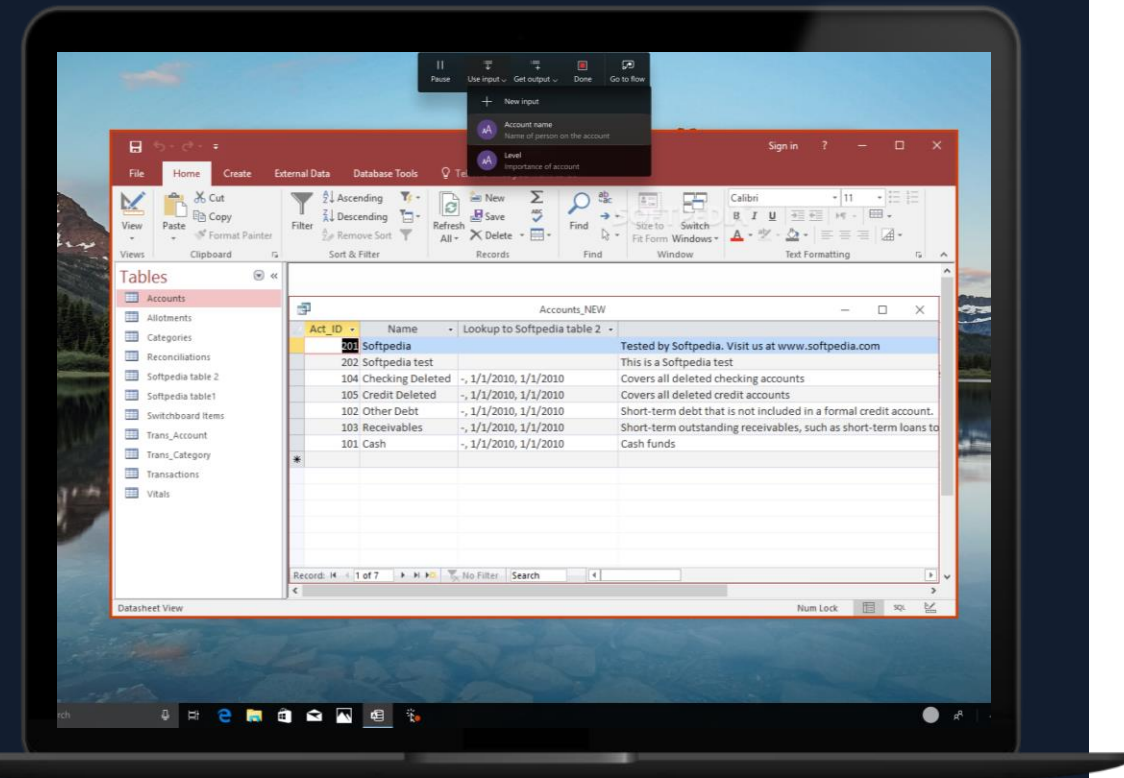




Making automation intuitive

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



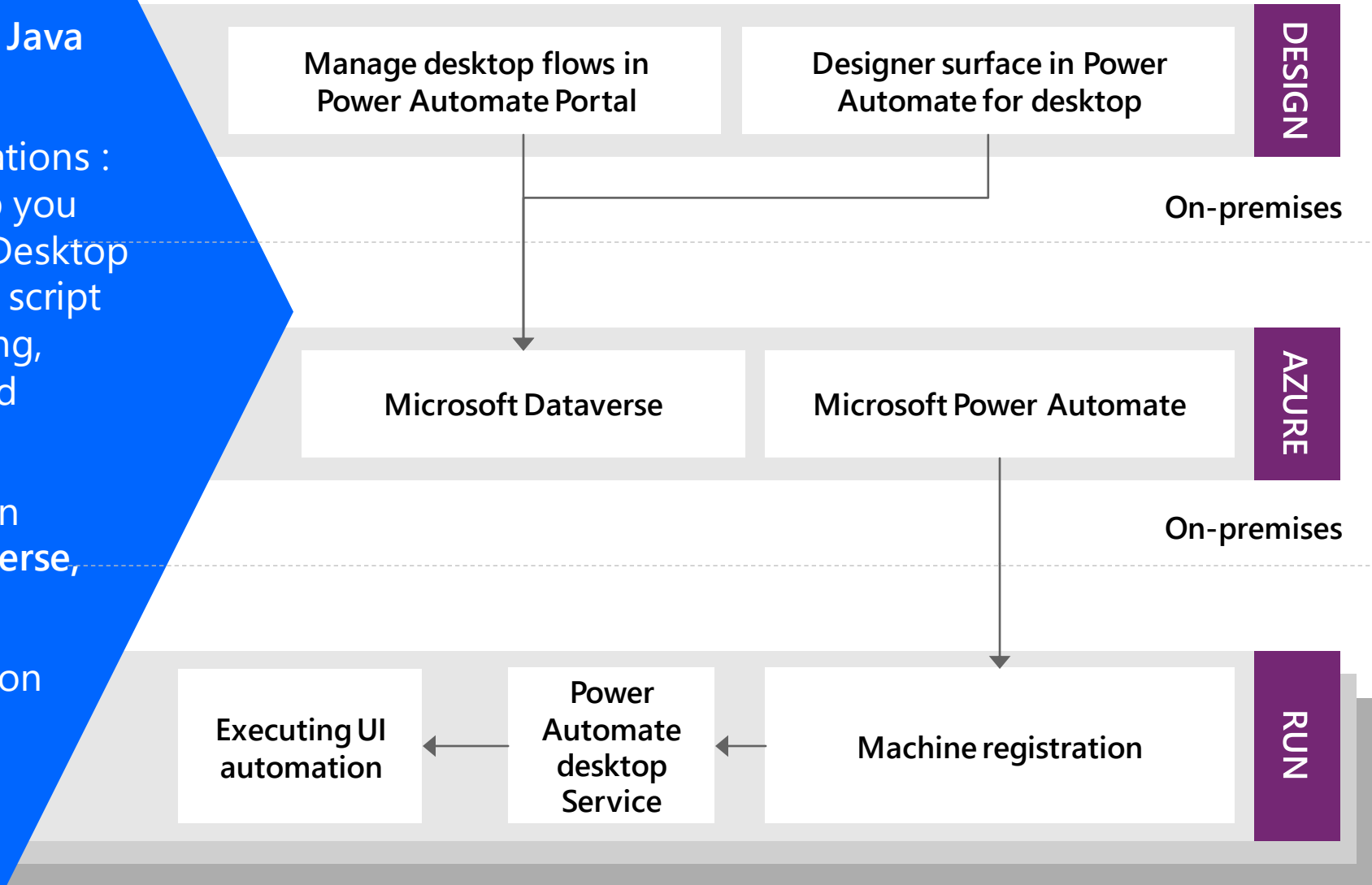
Packaging and Delivery
to Consumer

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

Power Automate Desktop Flows Basic

Desktop flow details

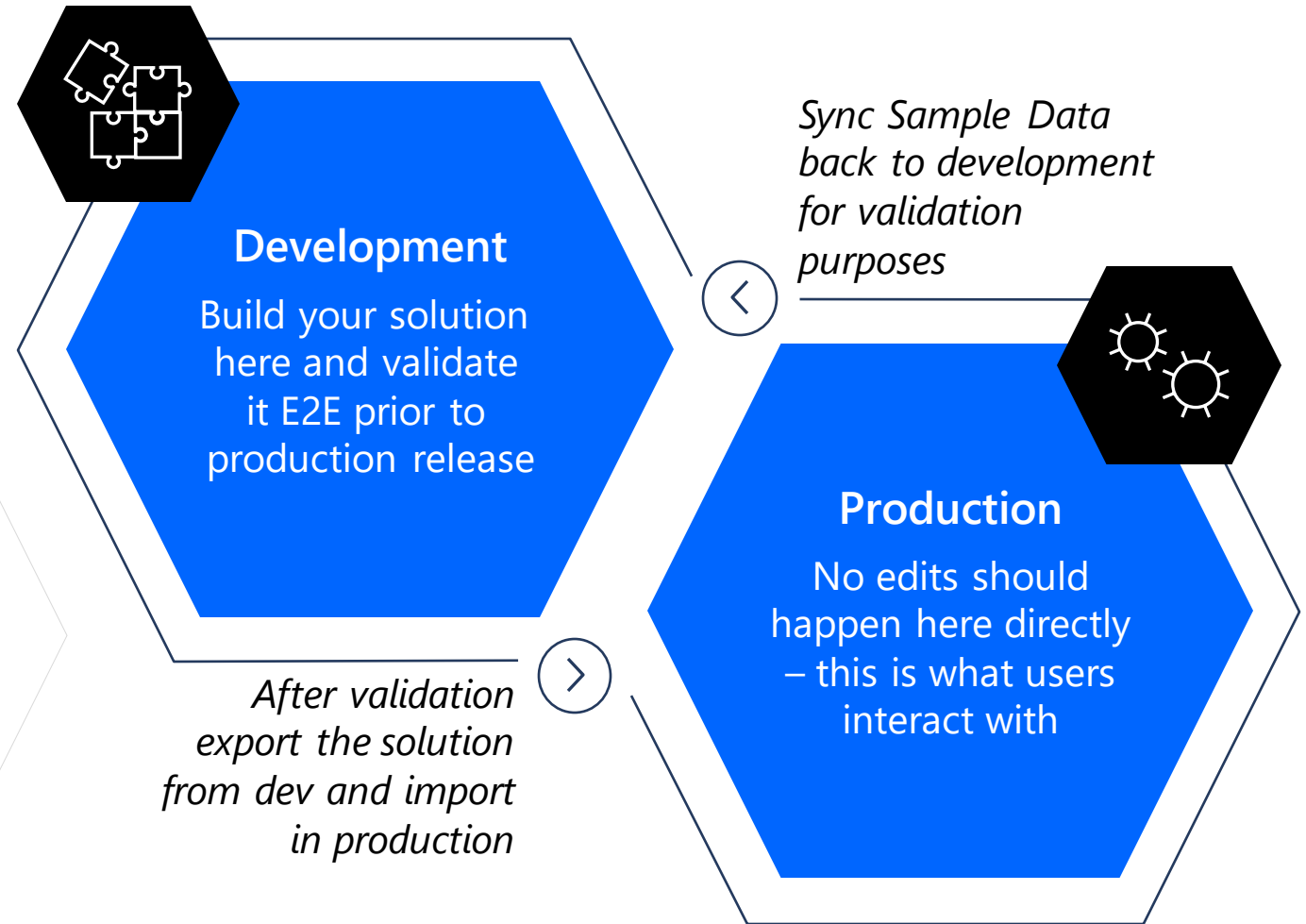
- Automate on-premises **Windows, Java and Web applications**.
- Windows, Java and & Web applications : With Power Automate for desktop you can get started with the intuitive Desktop or Web Recorder and extend your script with advanced cloud flow authoring, multi-layer exception handling and scripting 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** 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



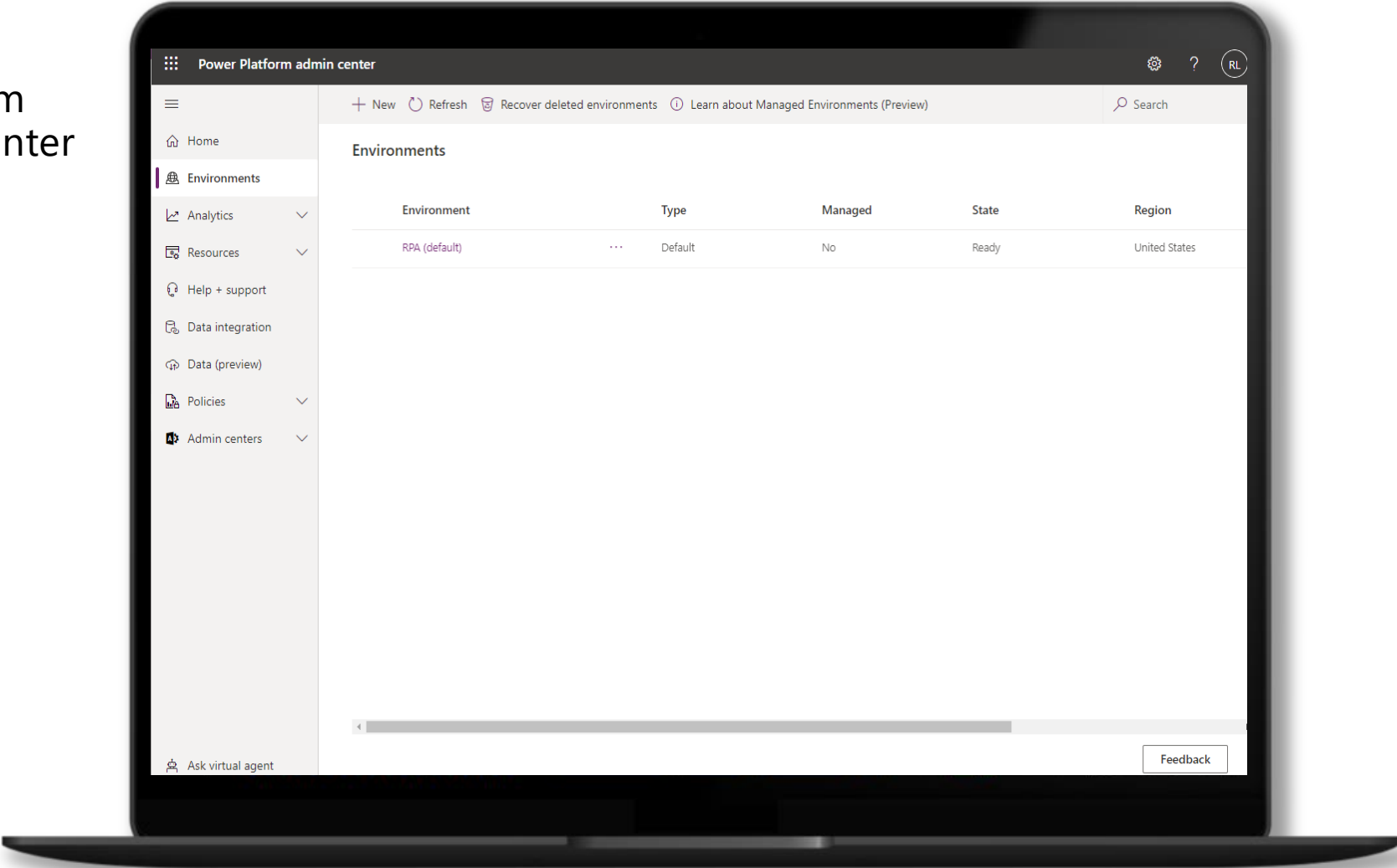
Create new environments from the Power Platform Admin Center



Select production or trial environment



Specify your region



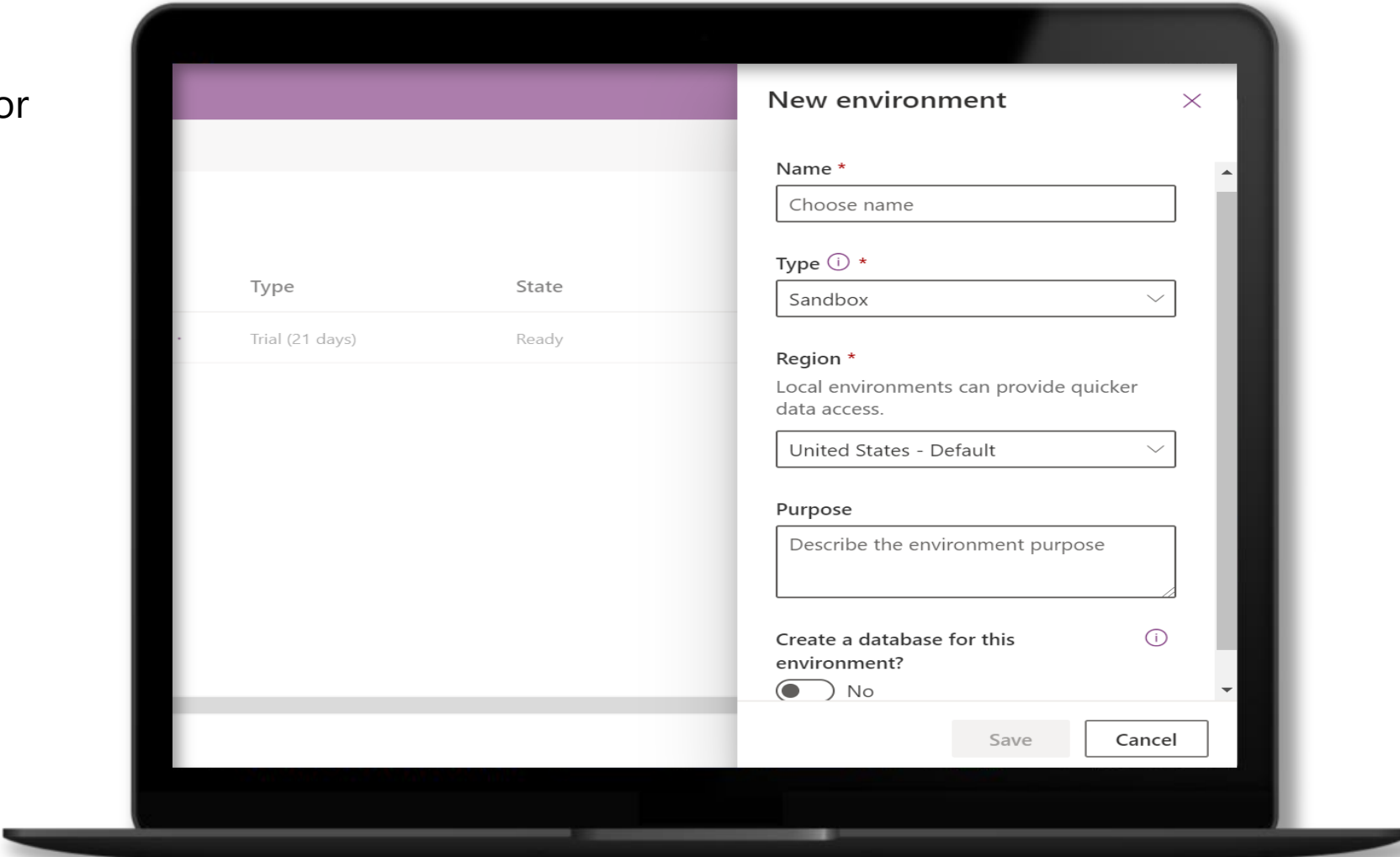
Power Automate Environments: database



Option to create a database for the environment



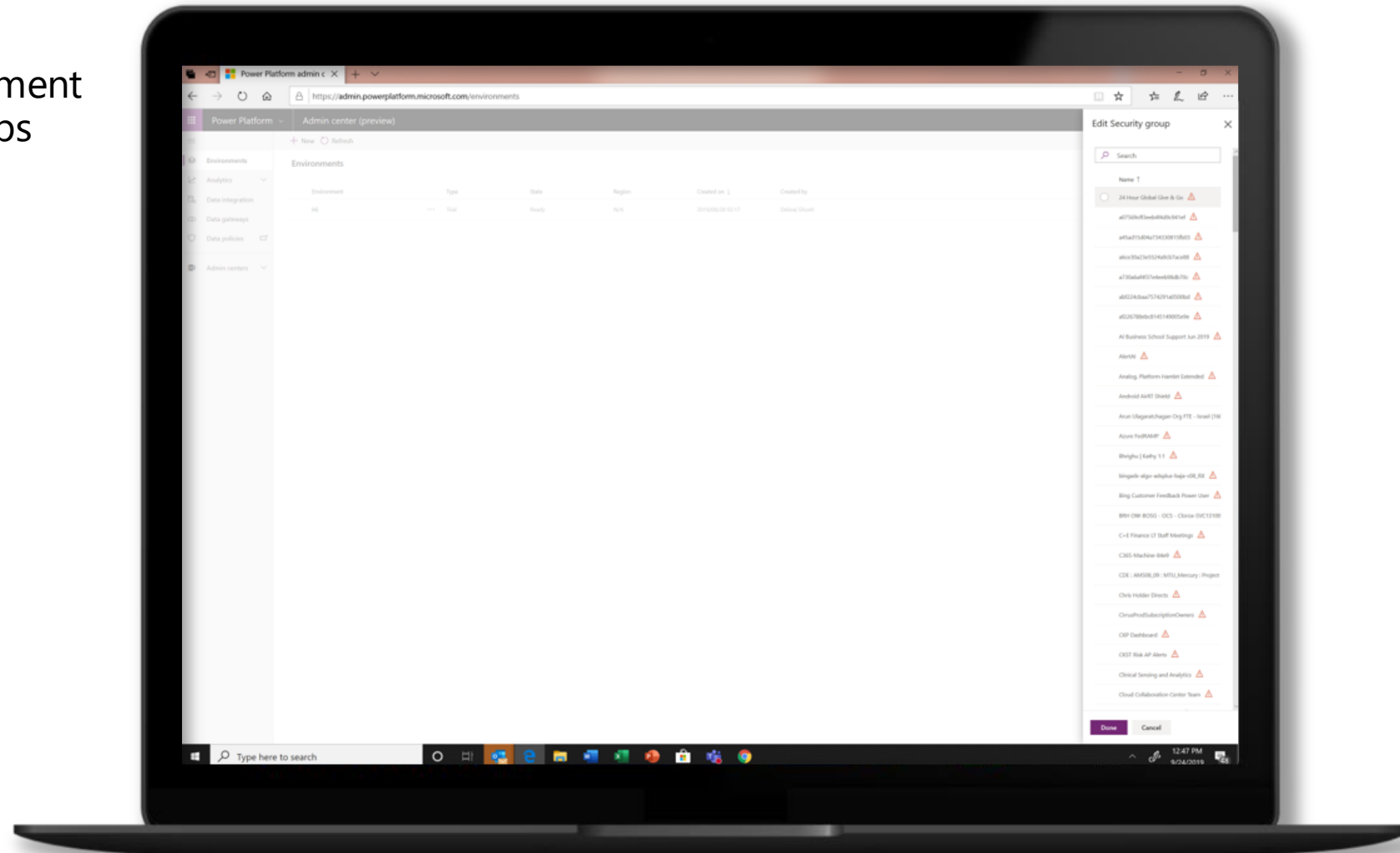
Use the Microsoft Dataverse as a data store



Power Automate Environments: Access management

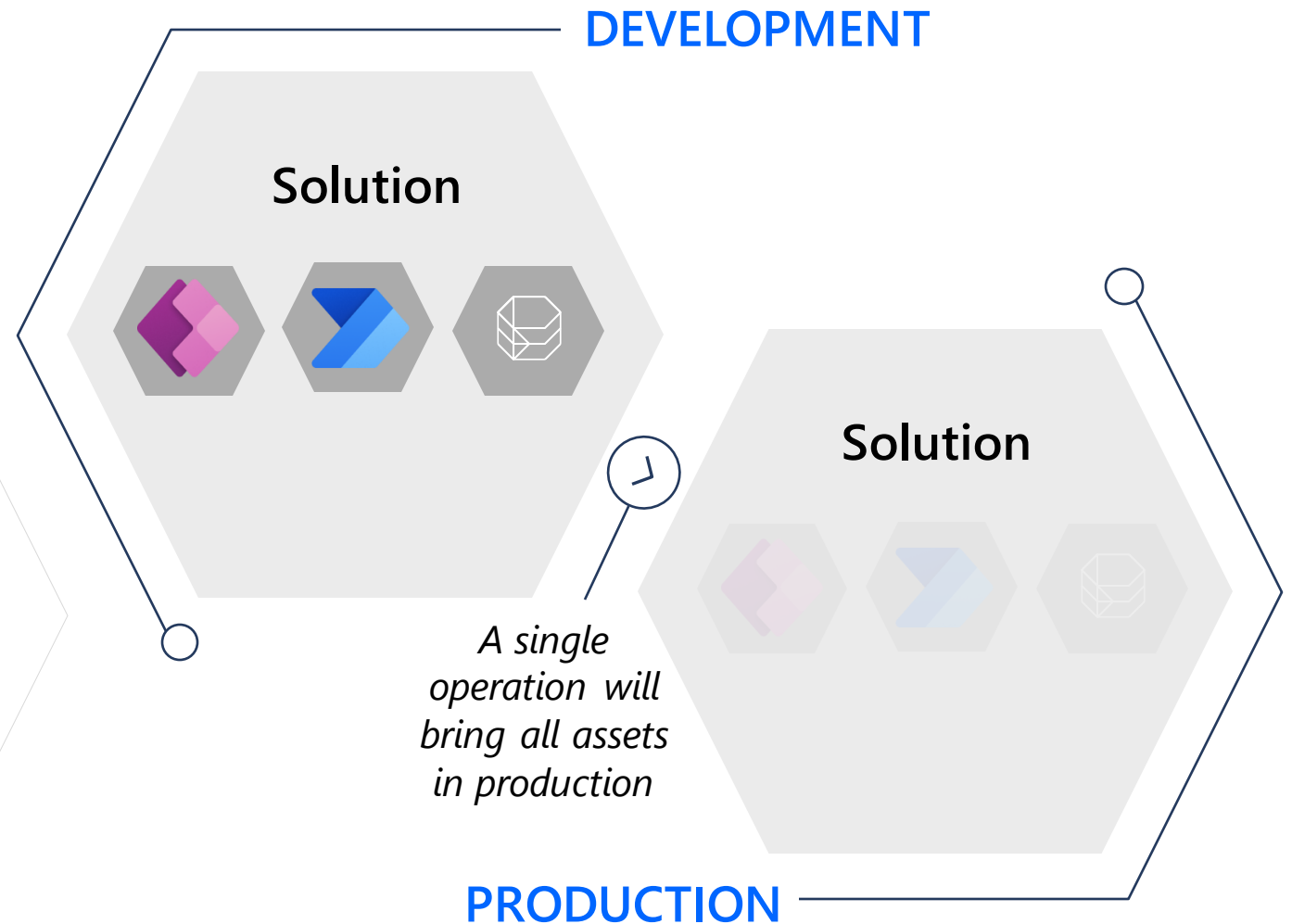


Secure access to the environment by selecting which user groups can access the environment



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

Changes should be tested first in a development environment before transport 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 for 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**".
 - 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.

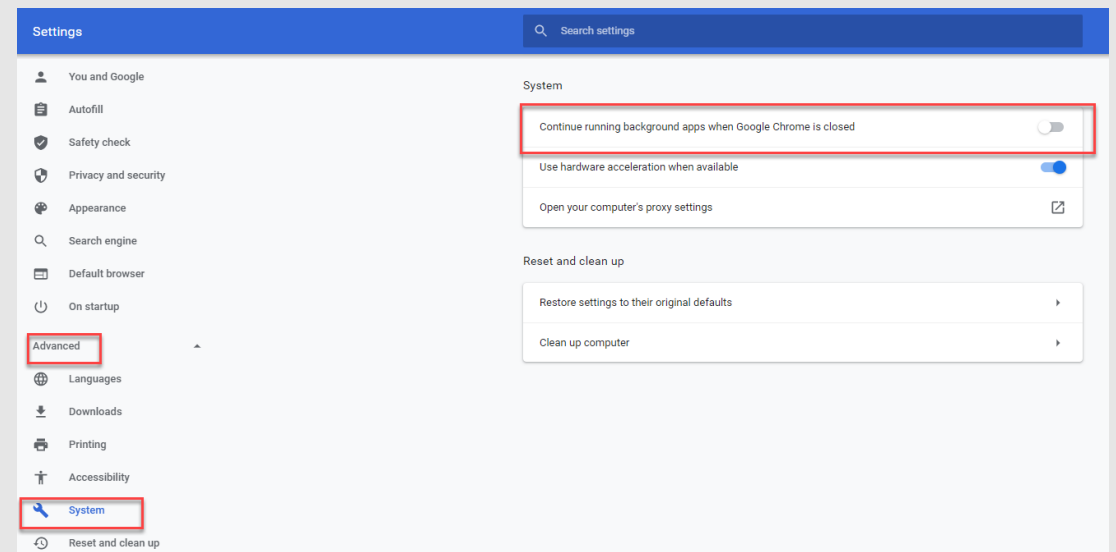
<https://support.softomotive.com/support/solutions/articles/35000137070-cannot-capture-control-orange-rectangle-in-wrong-place>

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

- ✓ Microsoft Edge (Chromium)



- Google Chrome



Session 2:

Create your first Power Automate desktop flow

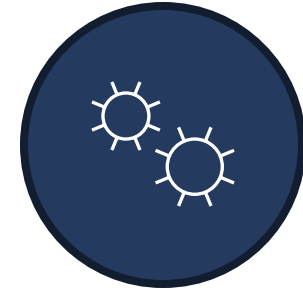
Desktop flows: Automating Apps without APIs for our Modern World



Record the Task



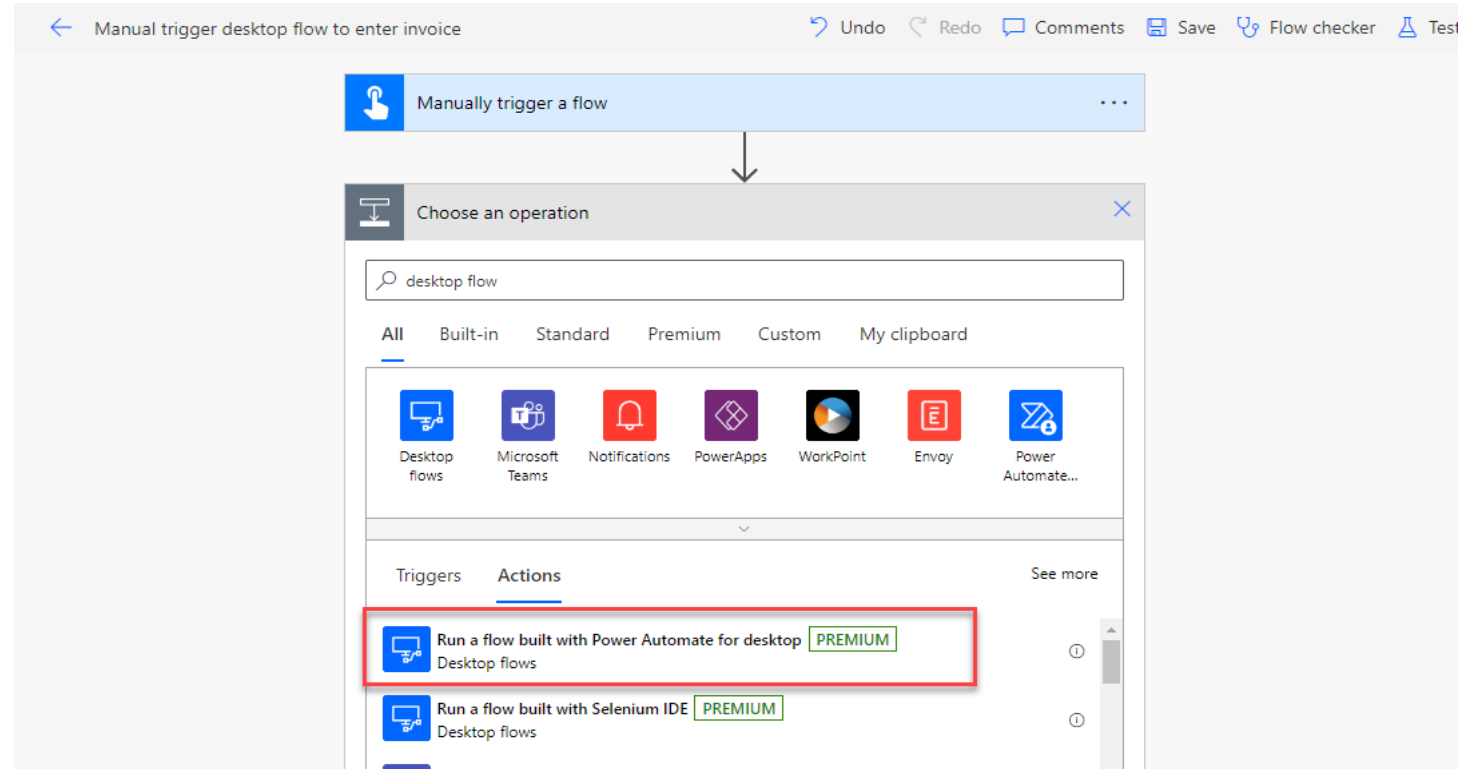
Test and Validate



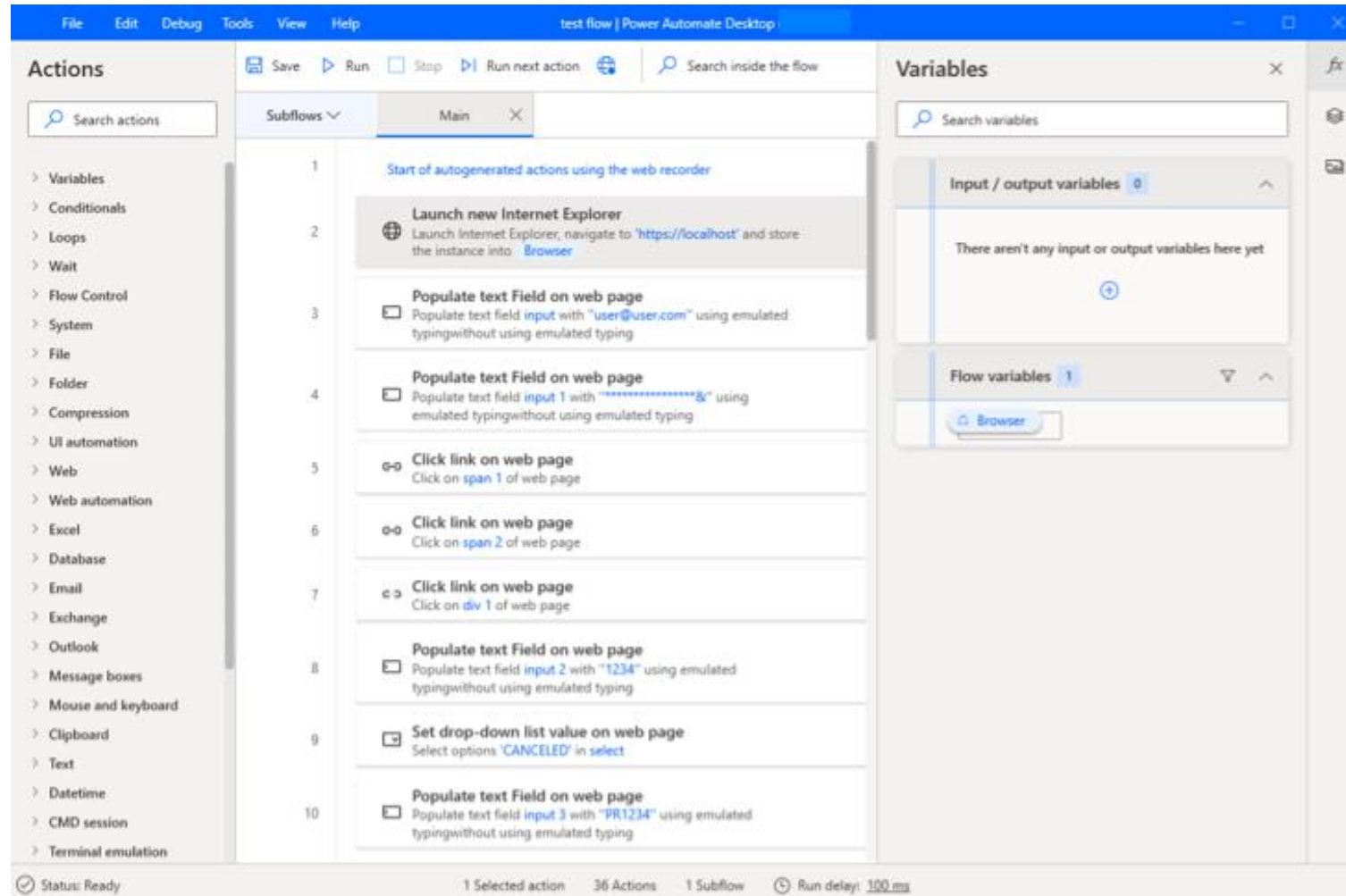
**Playback to
execute the task**

Expand Power Automate capabilities by using the desktop flows action to invoke Power Automate for desktop processes

- Hundreds of actions available
- Easy to run a desktop flow 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



Edit recorded actions



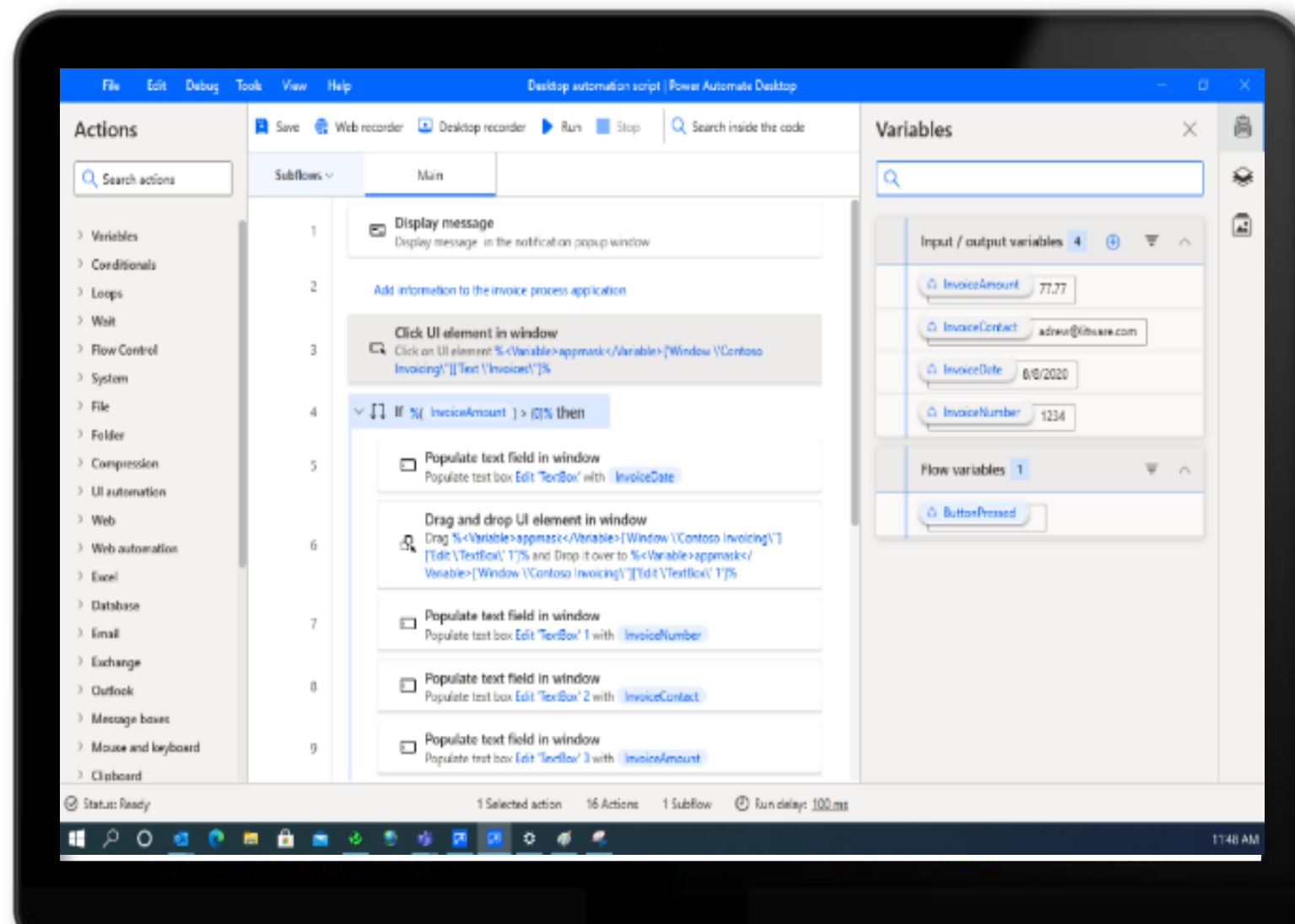
Easy to review and edit



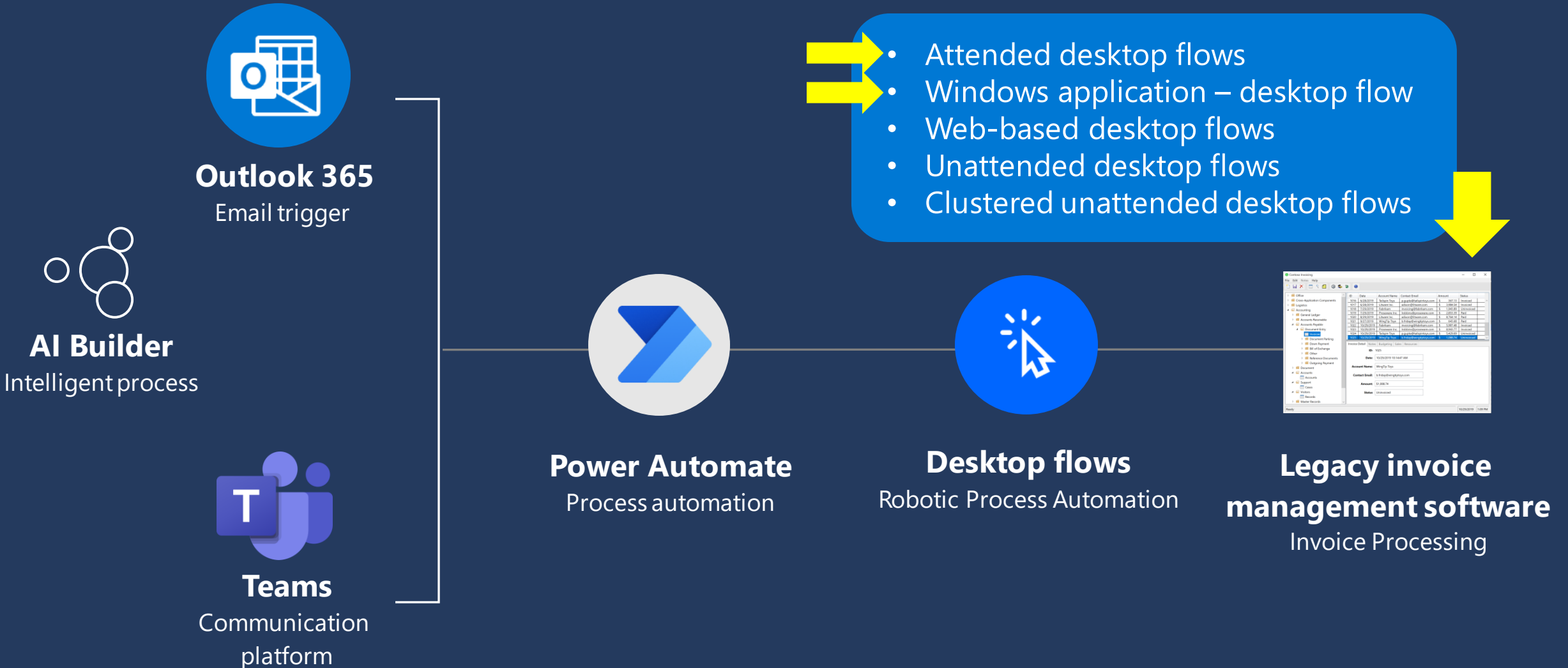
Detailed screenshot



Advance customizations
are available

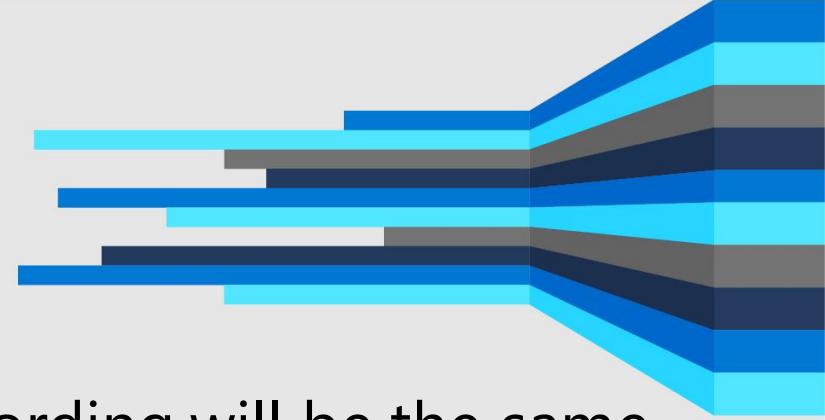


Lab 3: Create your First Power Automate desktop flow (25 minutes)



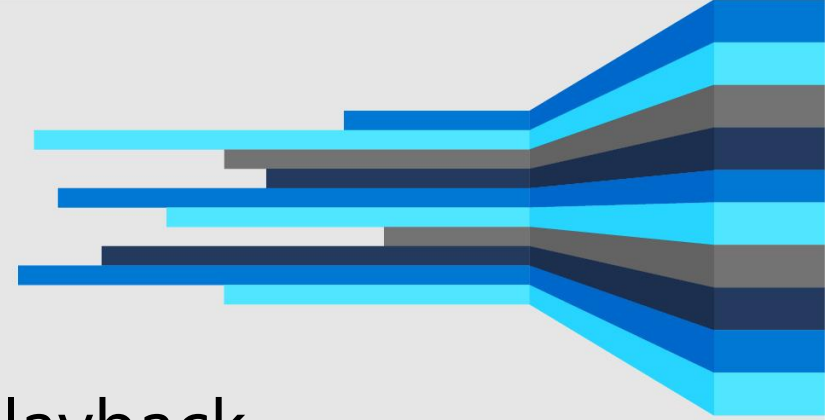
Student's demo lab 2 for creating your first desktop flow

Lab 2 Review: Tips & Tricks Recording



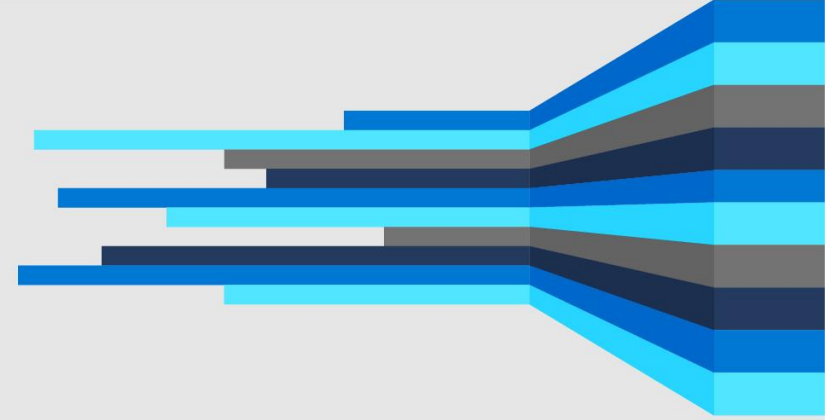
- ✓ Ensure you are using the right environment.
- ✓ Ensure that the keyboard layouts you use during recording will be the same as for playback.
- ✓ Use shortcuts instead of clicking, for instance copy paste with ctrl + c & ctrl + v instead of right click copy.
- ✓ Use "enter static text" if you are working 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 2 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 2 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.
- ✓ By default, desktop flows launch 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.

Session 3: Use inputs and outputs variables in desktop flows

Use Inputs to pass data in



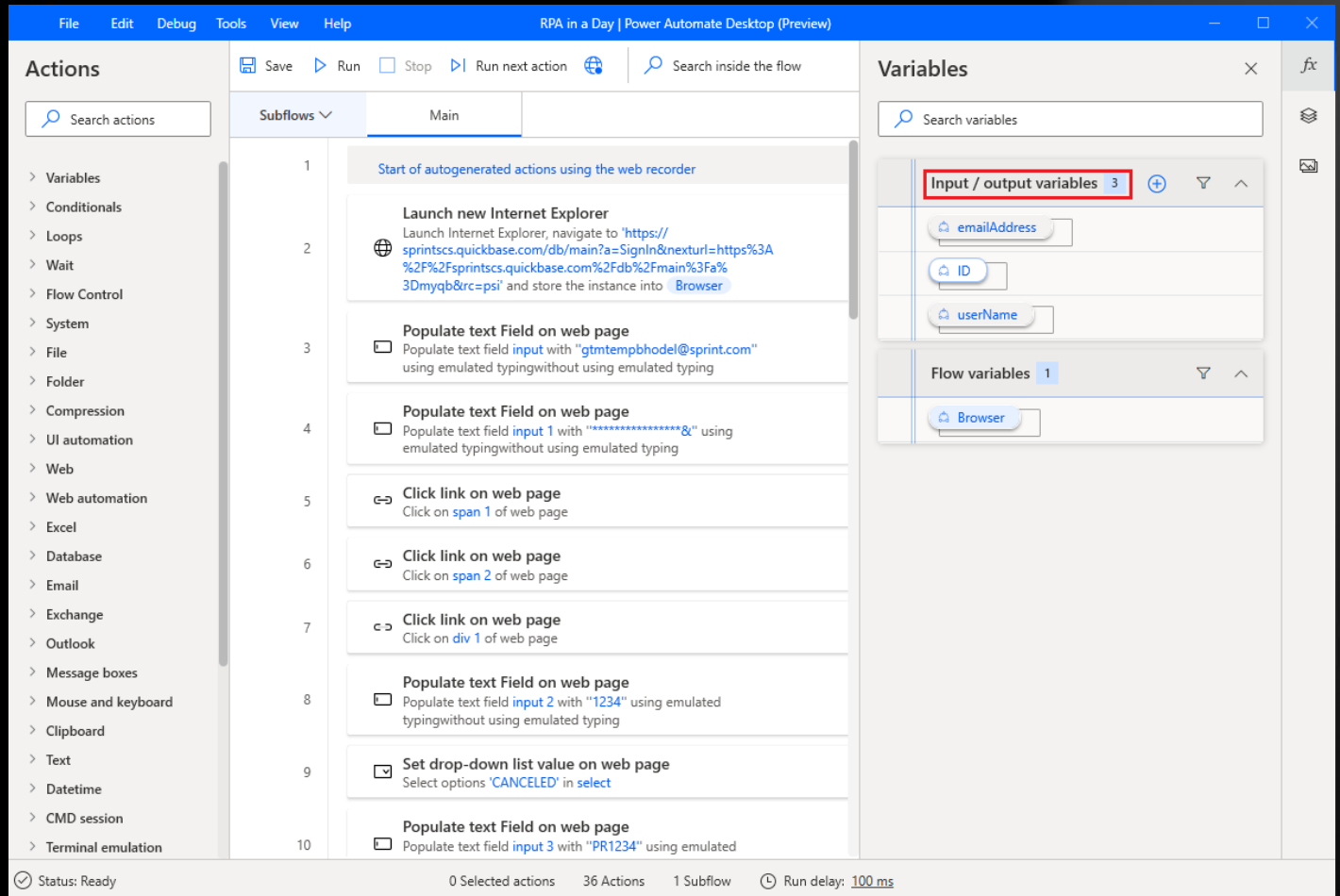
Can be added from either web or recorder



Easy to manage



Support multiple types including sensitive text



Use Outputs to pass data out



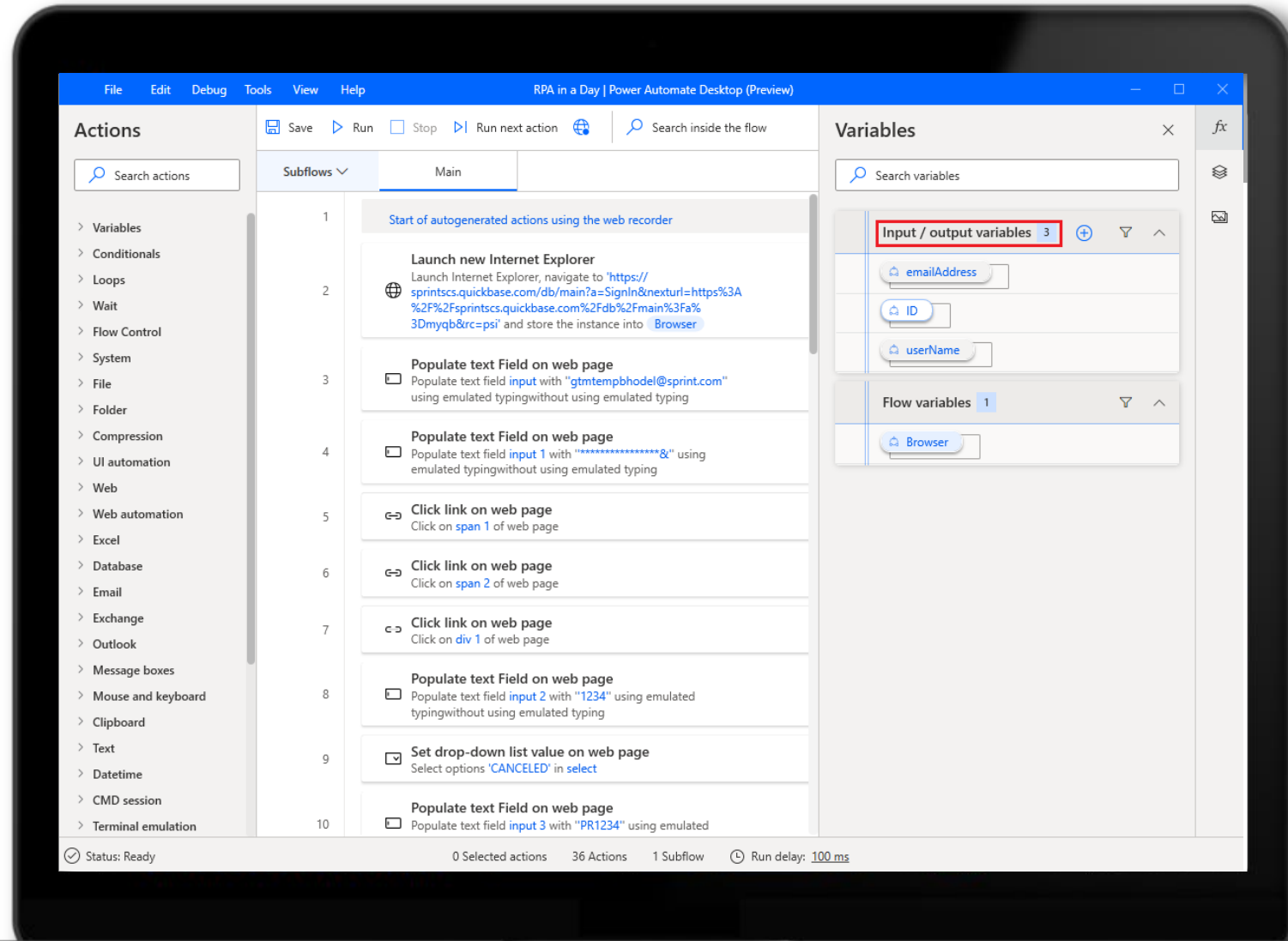
Added at recording time



Easy to view and manage

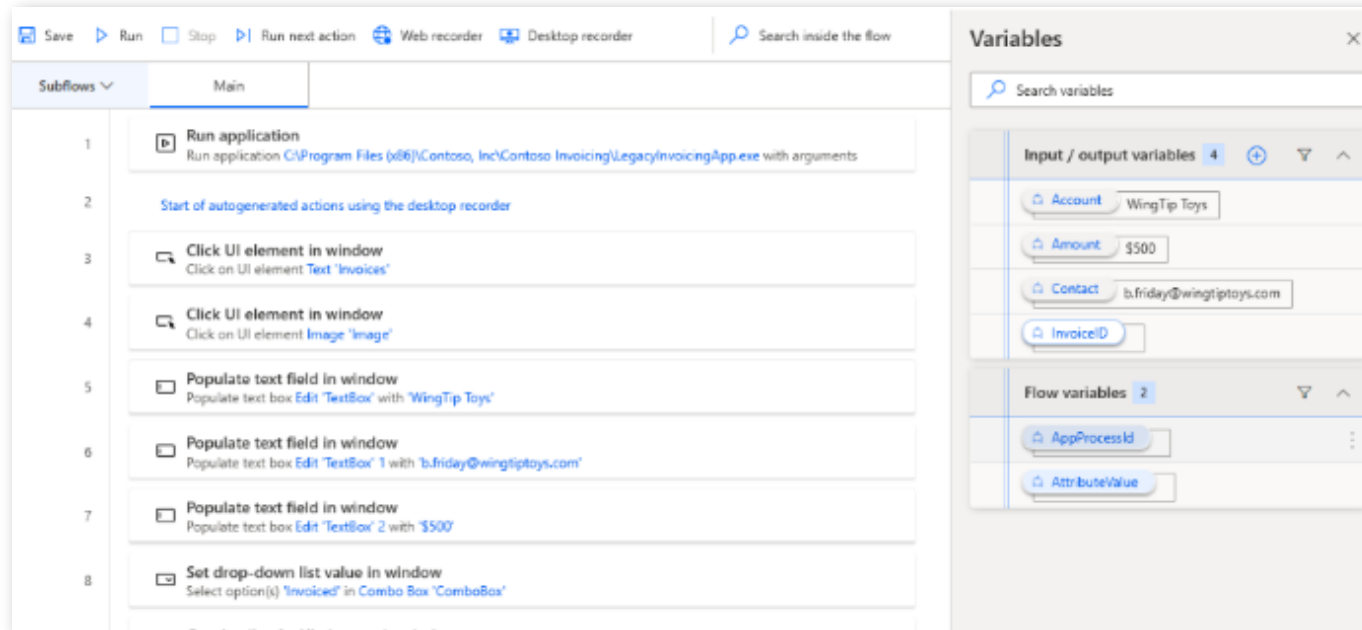


Value can be reused immediately
in current or future recordings

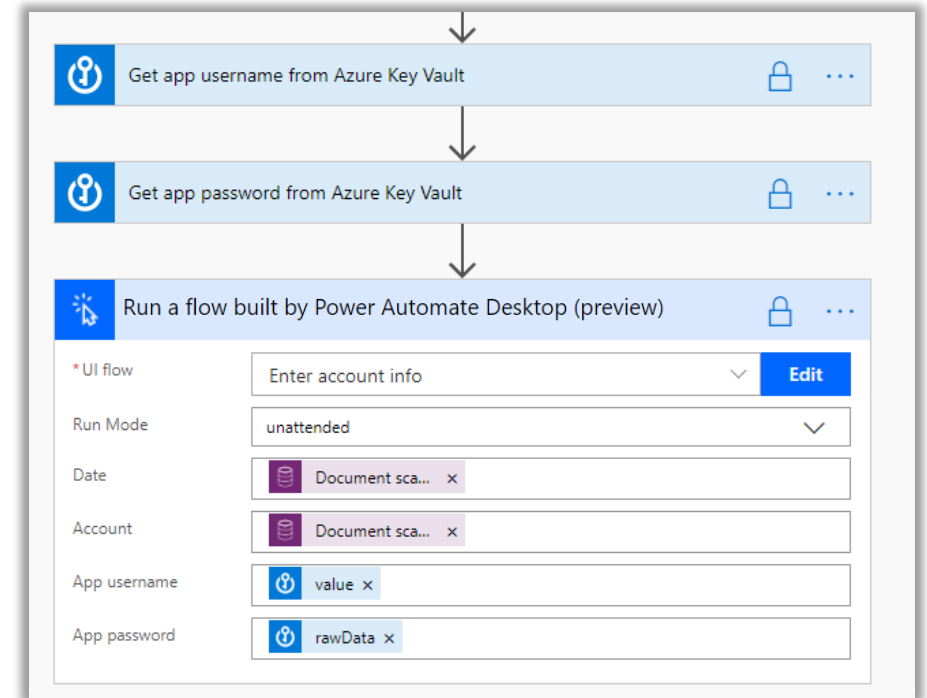


Why use inputs/outputs?

- to pass parameters from/to a cloud flow



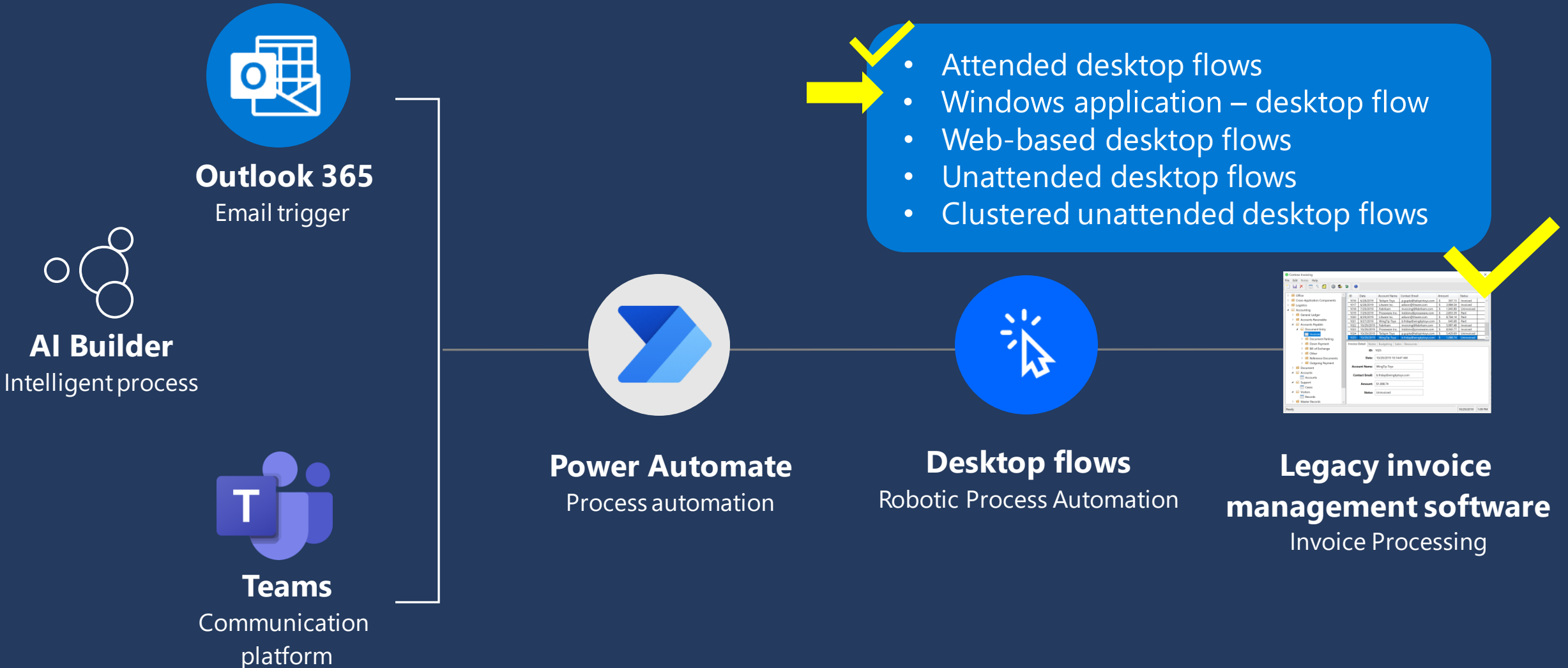
Define inputs/outputs in desktop flows



Bind them in the cloud flow that runs the desktop flow

Lab 3: Use Input and Output Parameters

(25 minutes)



Student's demo of lab 3 using input and output variables

Session 4: Use desktop flow connector in Power Automate through connection

What is a cloud flow?

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

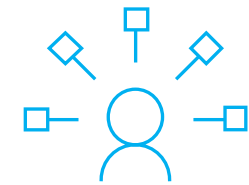
What makes a cloud flow



Trigger



Action



Conditional Logic

Trigger

Three Types of Triggers



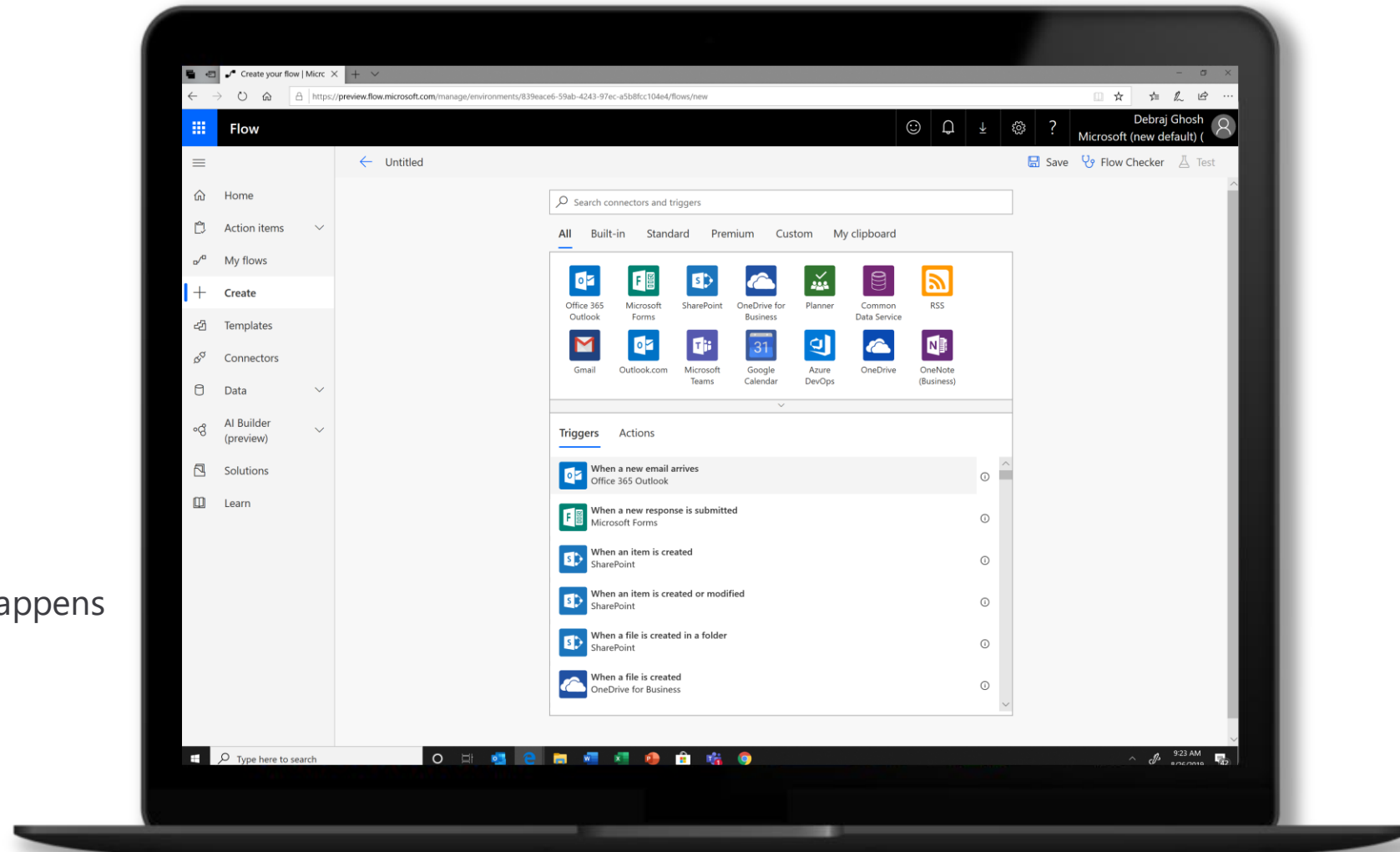
Manual Action



Run on a Schedule



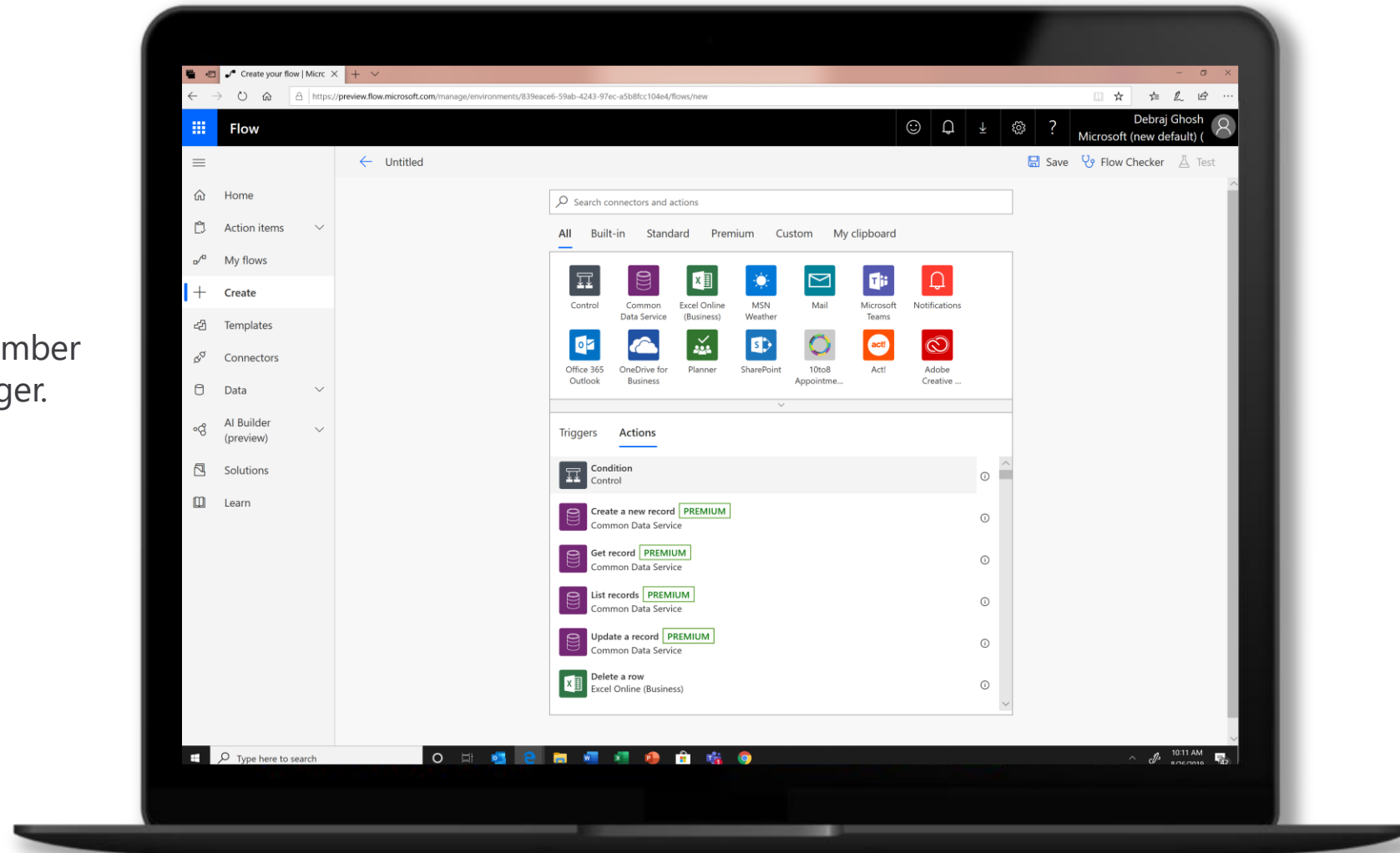
Run based on an event that happens in a cloud or on-prem service



Action



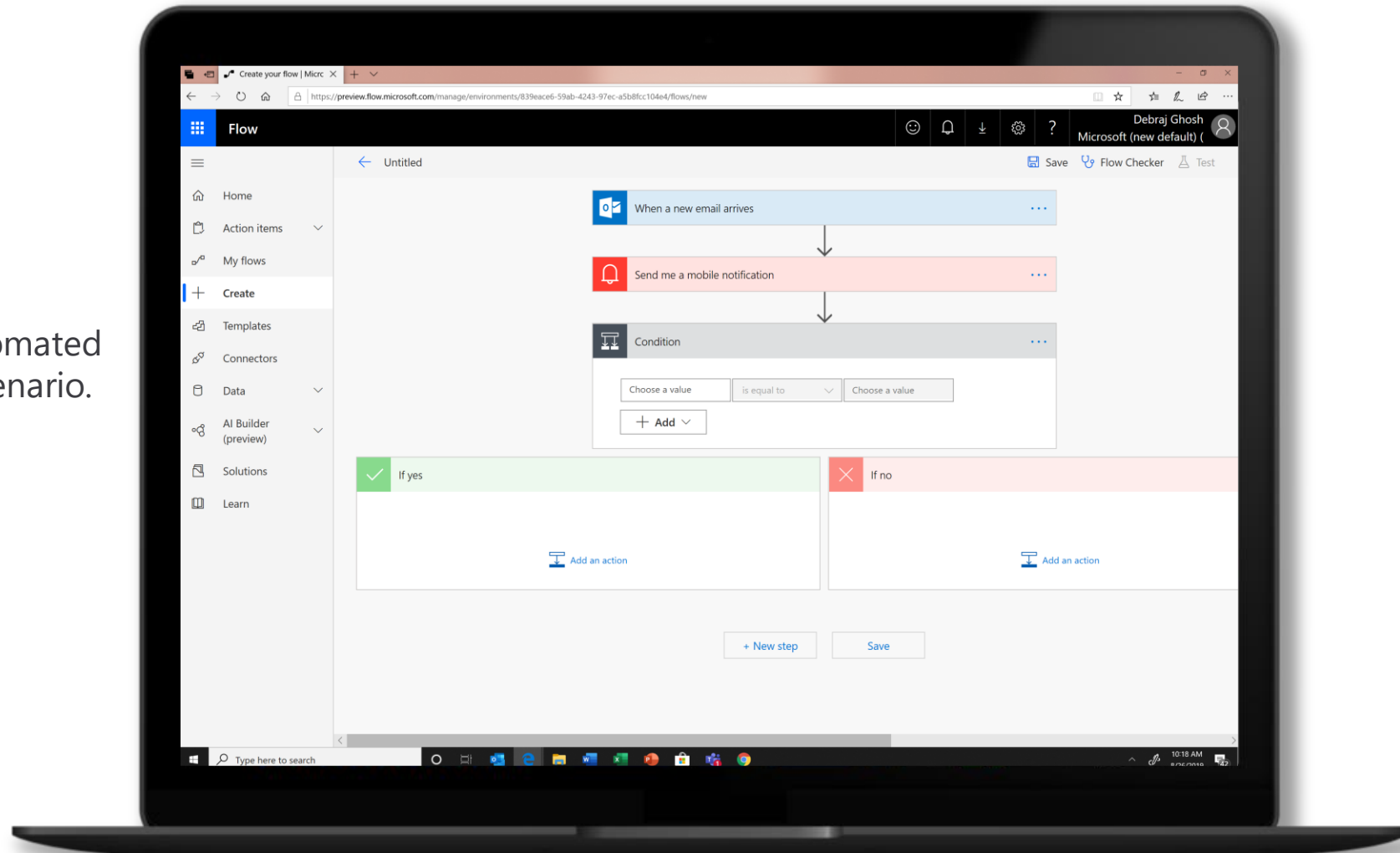
A cloud flow 'Action' is any number of steps that run after the trigger.



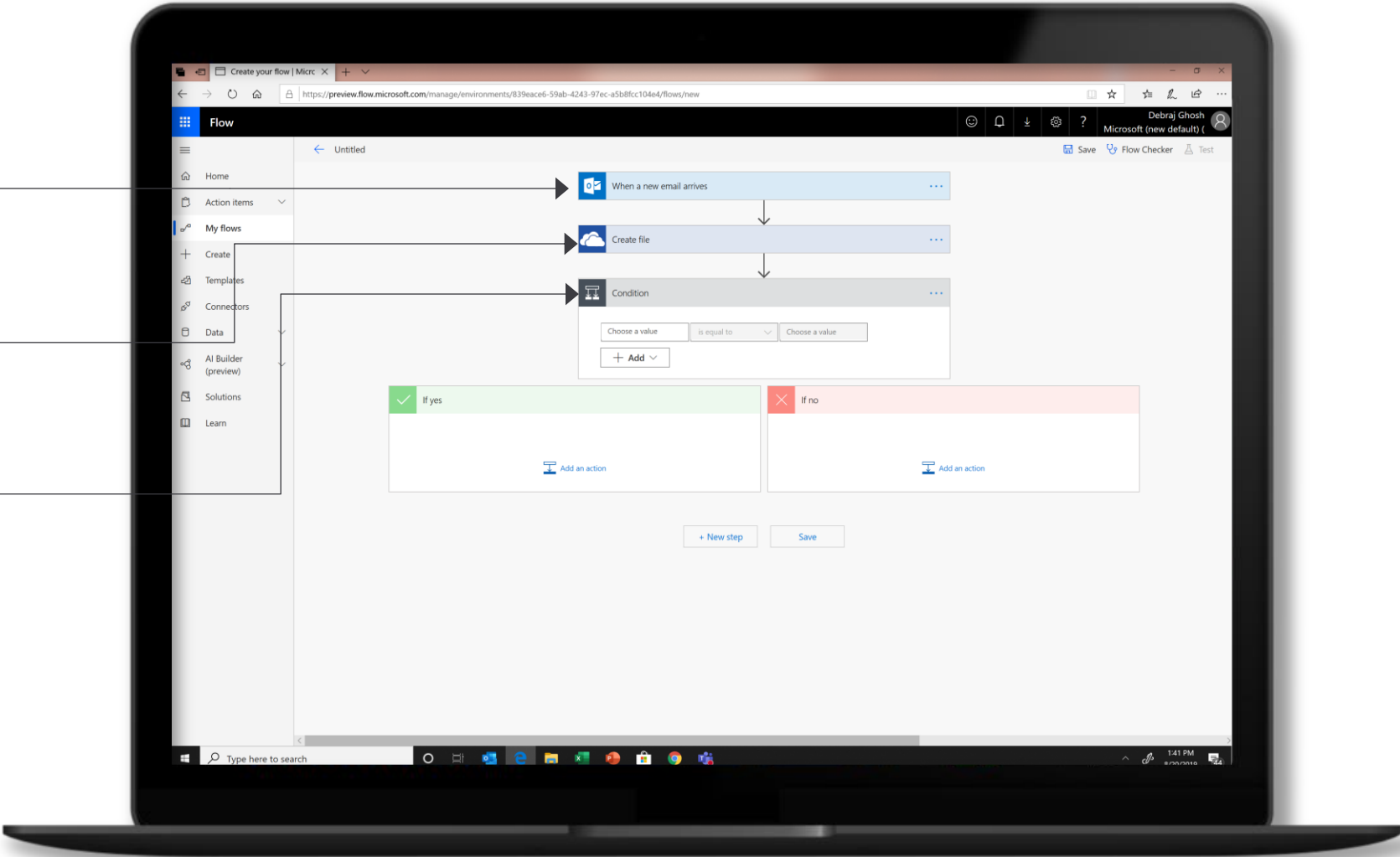
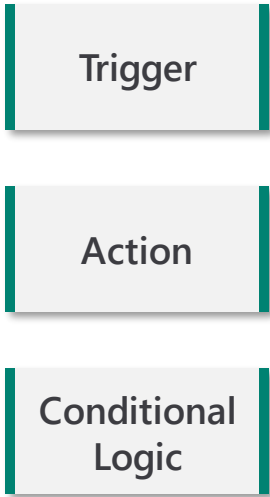
Conditional Logic



Conditional logic enables automated decisions based on a given scenario.

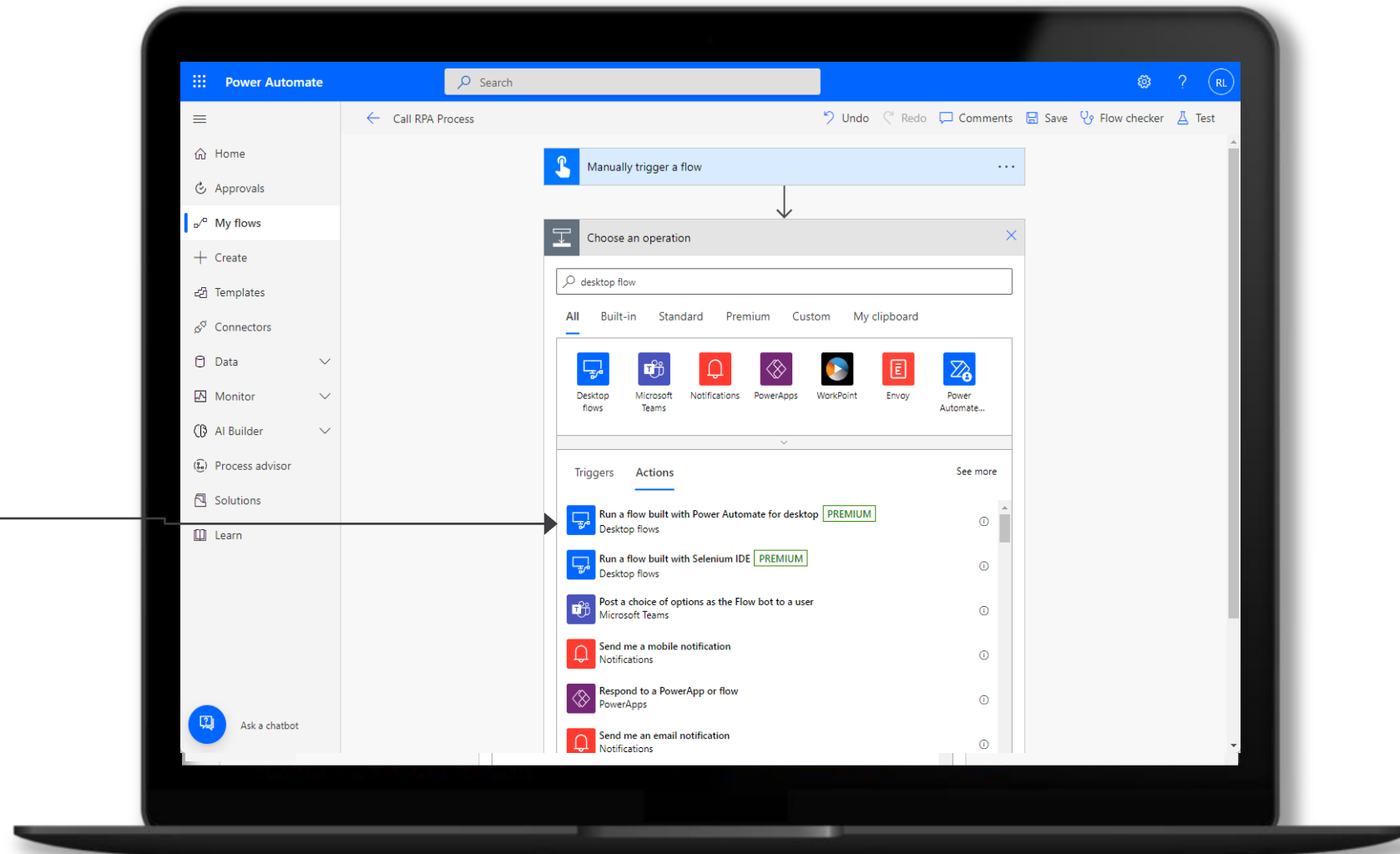


These building blocks make a Power Automate cloud flow



Use the desktop flows Connector to enable RPA

Run a flow built with
Power Automate for
desktop



Machine registration



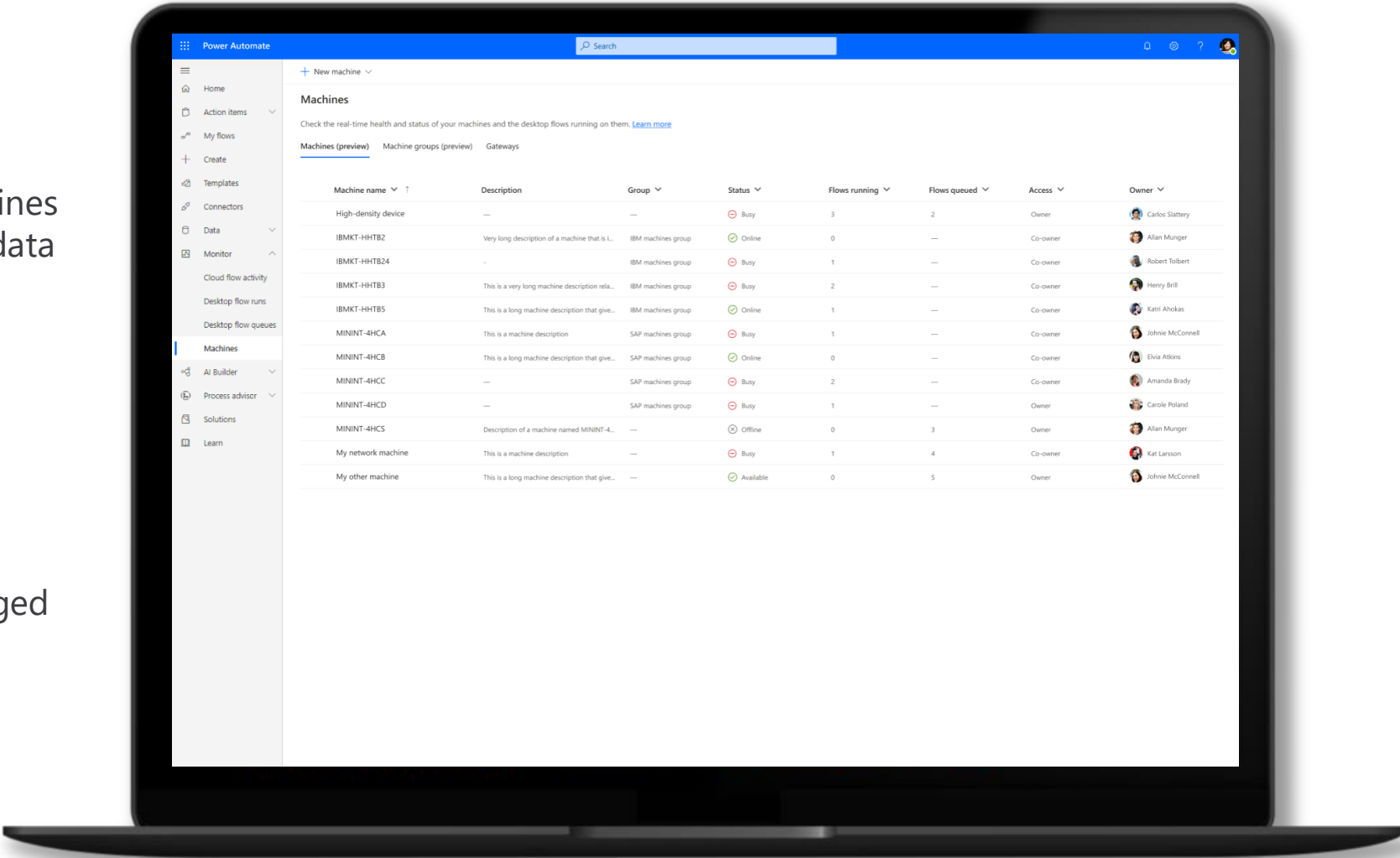
Allows cloud flow to call machines directly, without on-premises data gateways



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

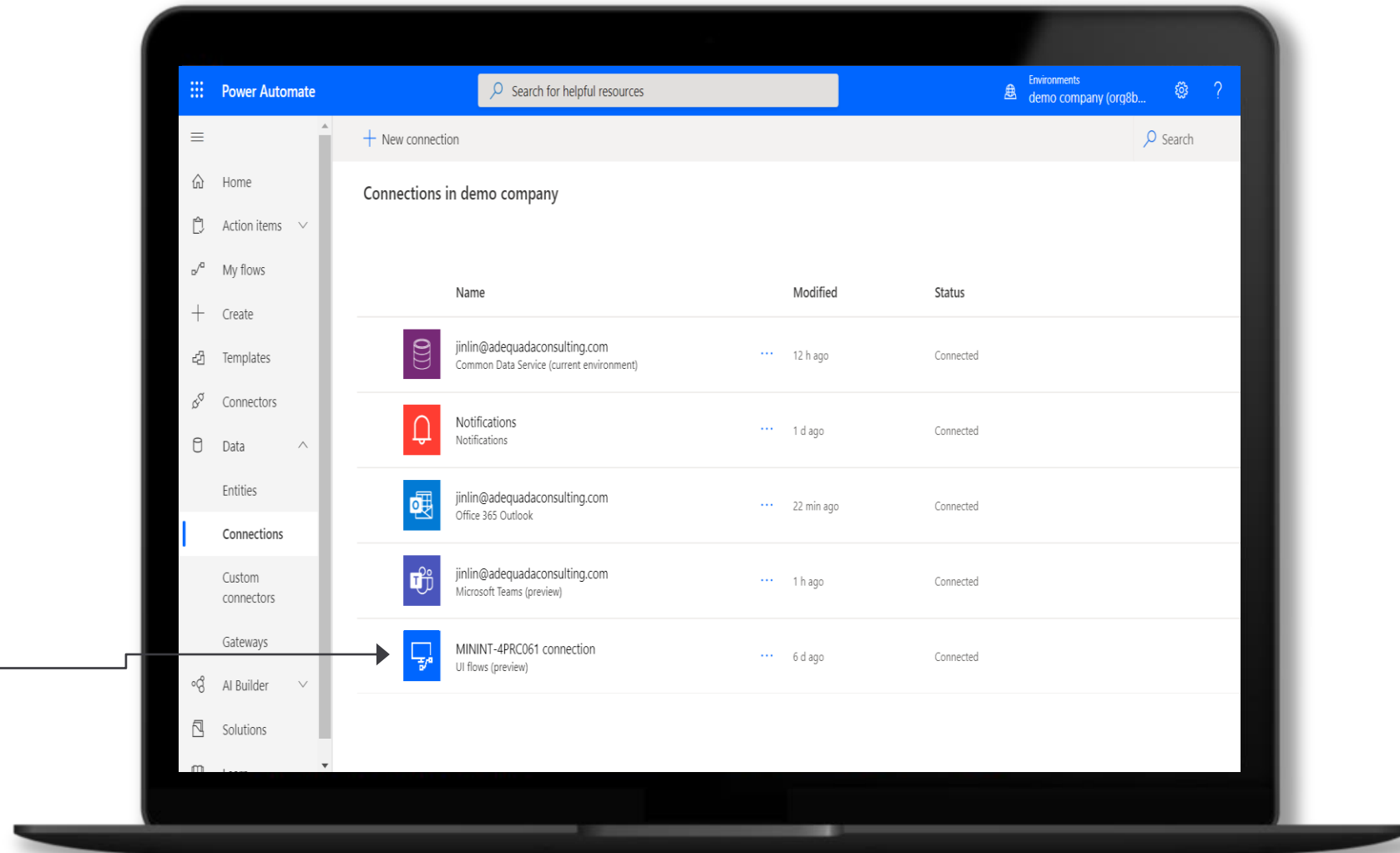


Once registered, can be managed from the cloud

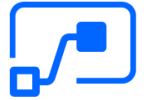


Desktop flows Connection – allow desktop flow to call registered machines directly

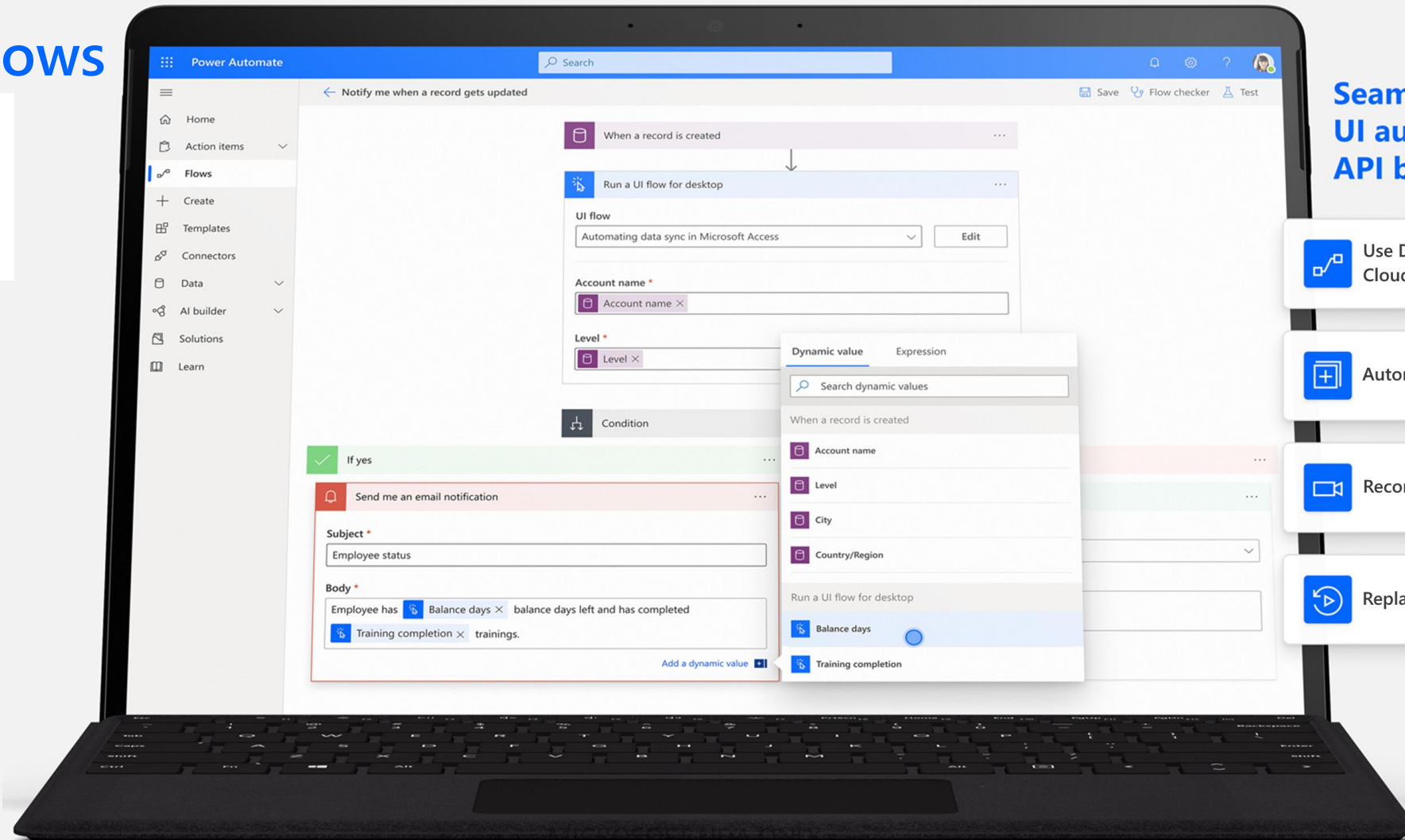
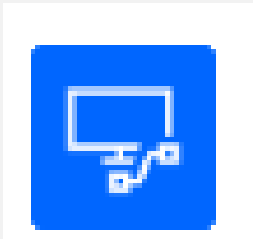
New!
Desktop flows
Connection
-- connect directly to
registered machine



Integrate desktop flows into a complete E2E cloud flow



Desktop flows



Seamlessly integrate
UI automation with
API based automation

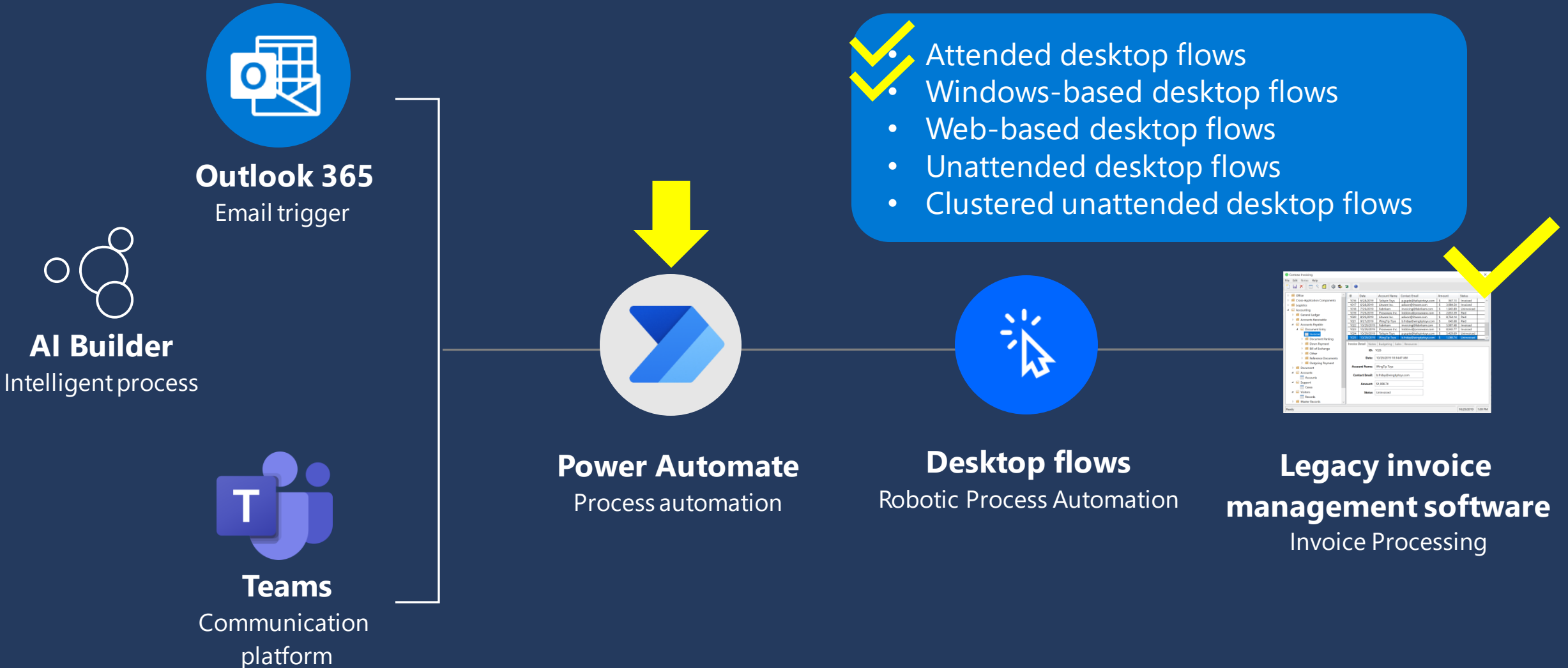
Use Desktop flows with
Cloud flows

Automate with dynamic values

Record step-by-step UI actions

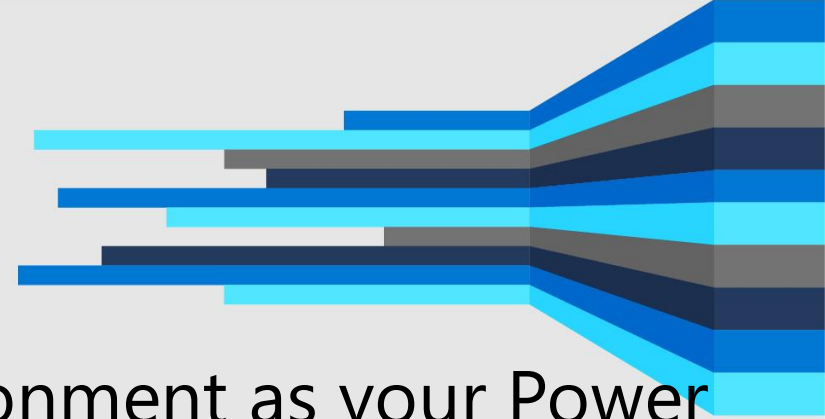
Replay and test actions

Lab 4: Integrate cloud flows (55 minutes)



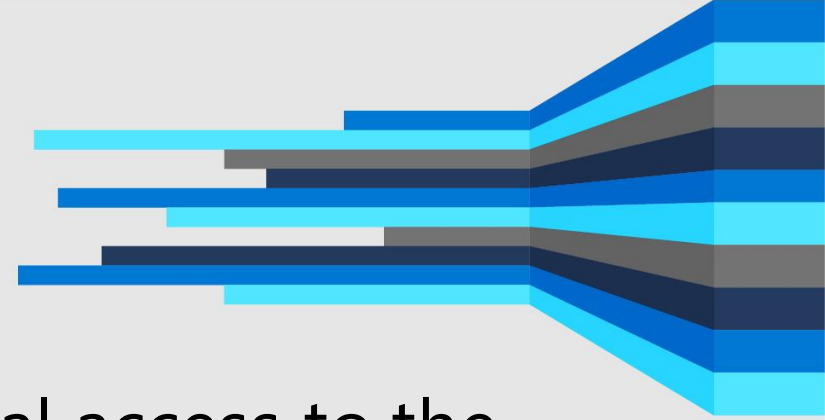
Student's demo of lab 5 using desktop flows in a cloud flow

Lab 4 review: Tips & Tricks Machine registration



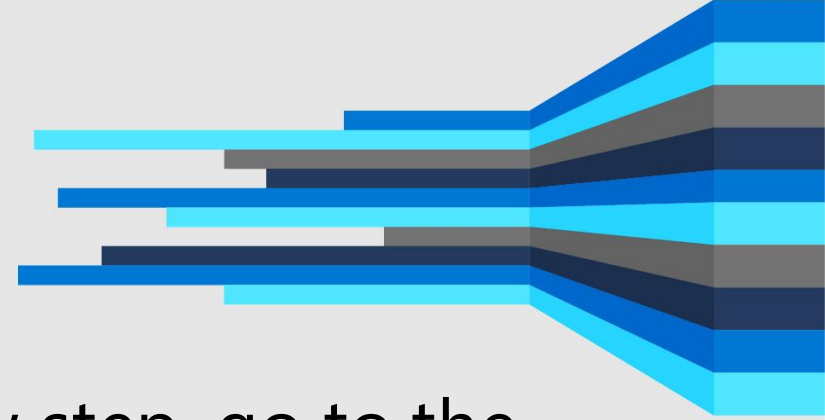
- ✓ Machine must be registered in the same environment as your Power Automate desktop flow. This is necessary to ensure data moving between the service and machine honors data sovereignty rules.
- ✓ Use the same account that you are logging into portal to setup the machine.
- ✓ If you need to switch 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 4 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 4 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 5: Use API Connectors in cloud flow to connect to Outlook inbox

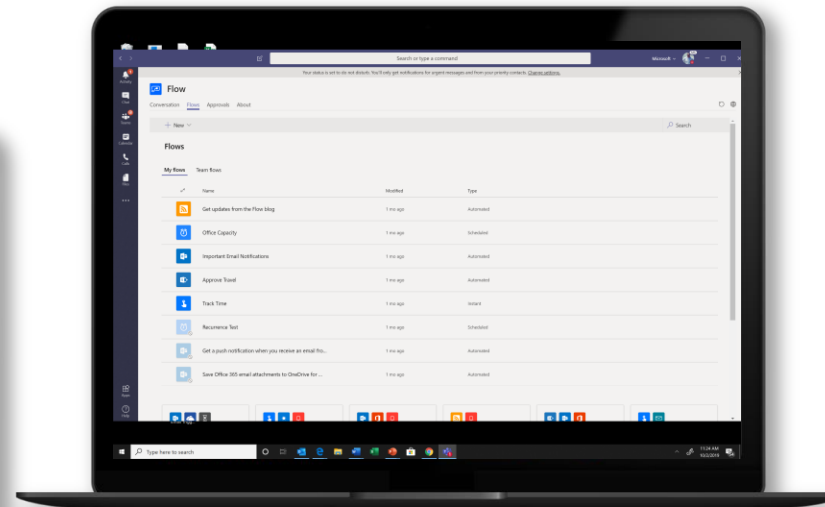
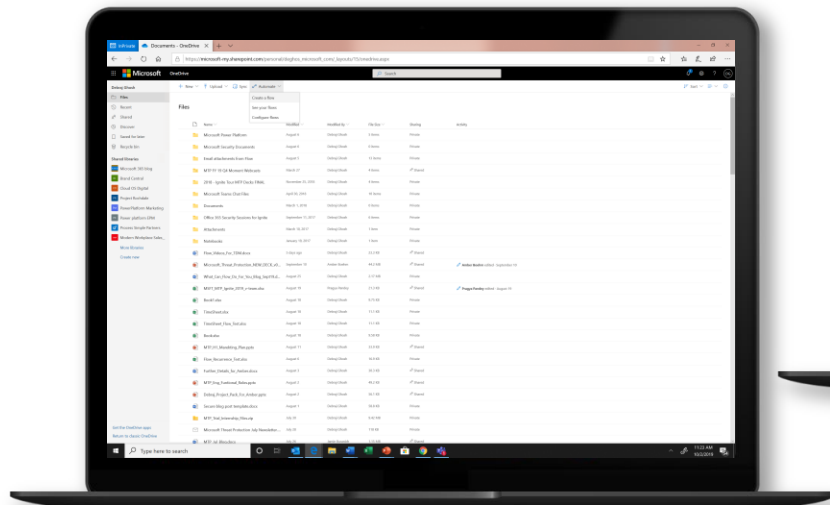
API connectors available in Power Automate



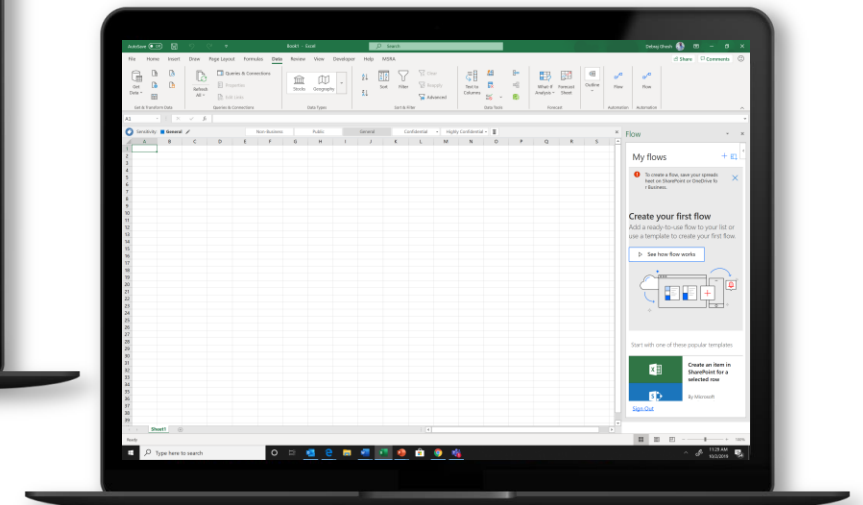
Native integration with widely used services

In-app automation in Teams

Begin automating
from your OneDrive



Automate directly
from Excel

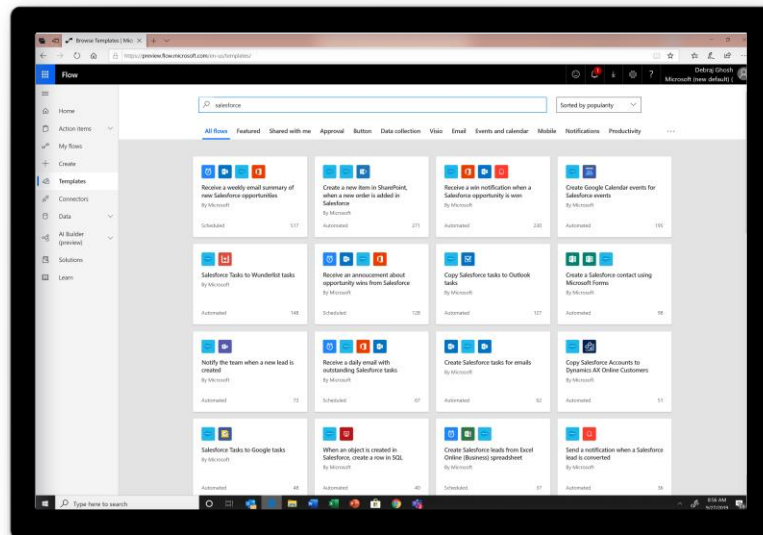


Easily automate your core operations processes

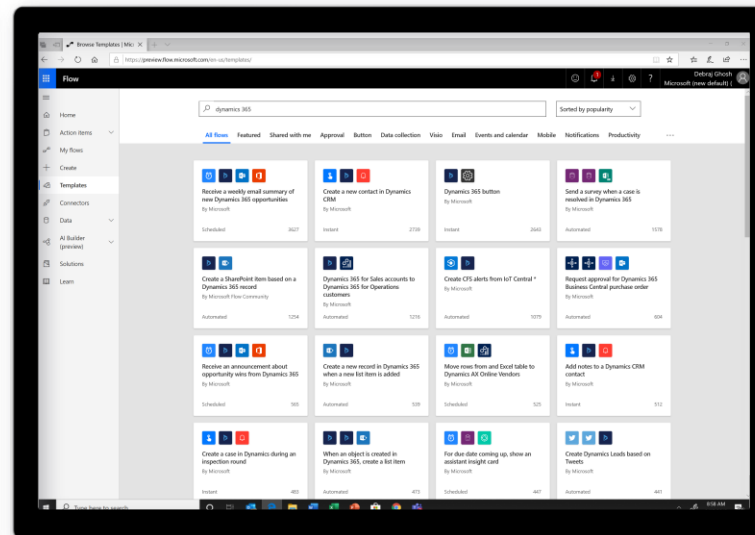
Automate your mission critical tasks with seamless integration to Salesforce, Dynamics 365, and SAP

- 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

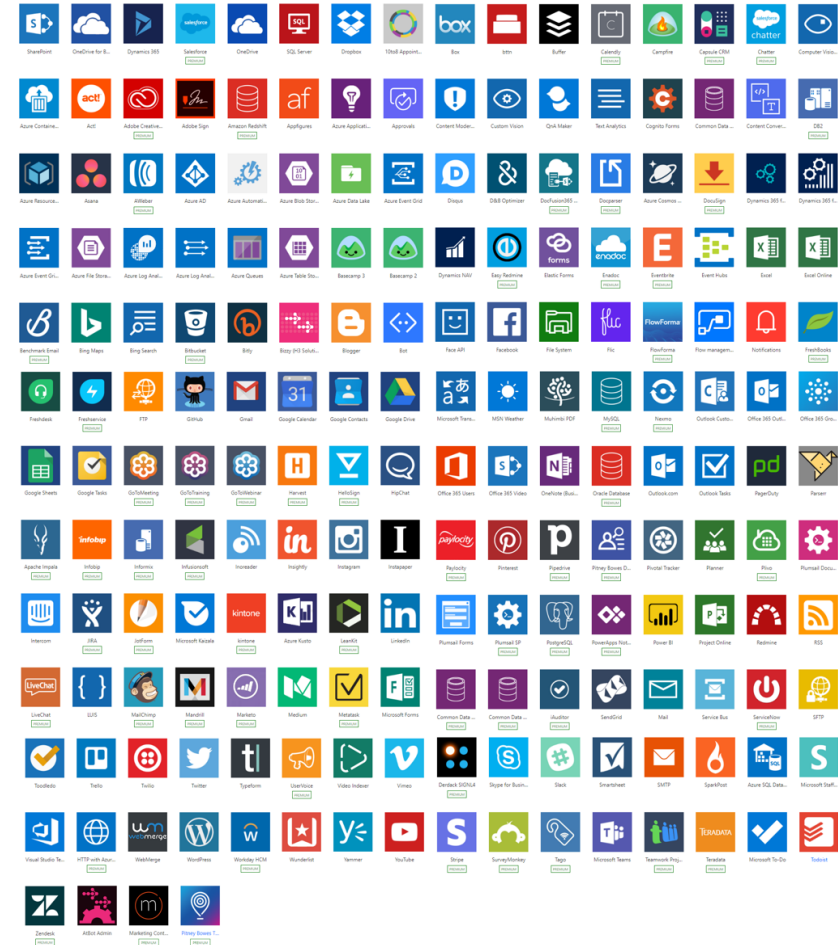


SAP

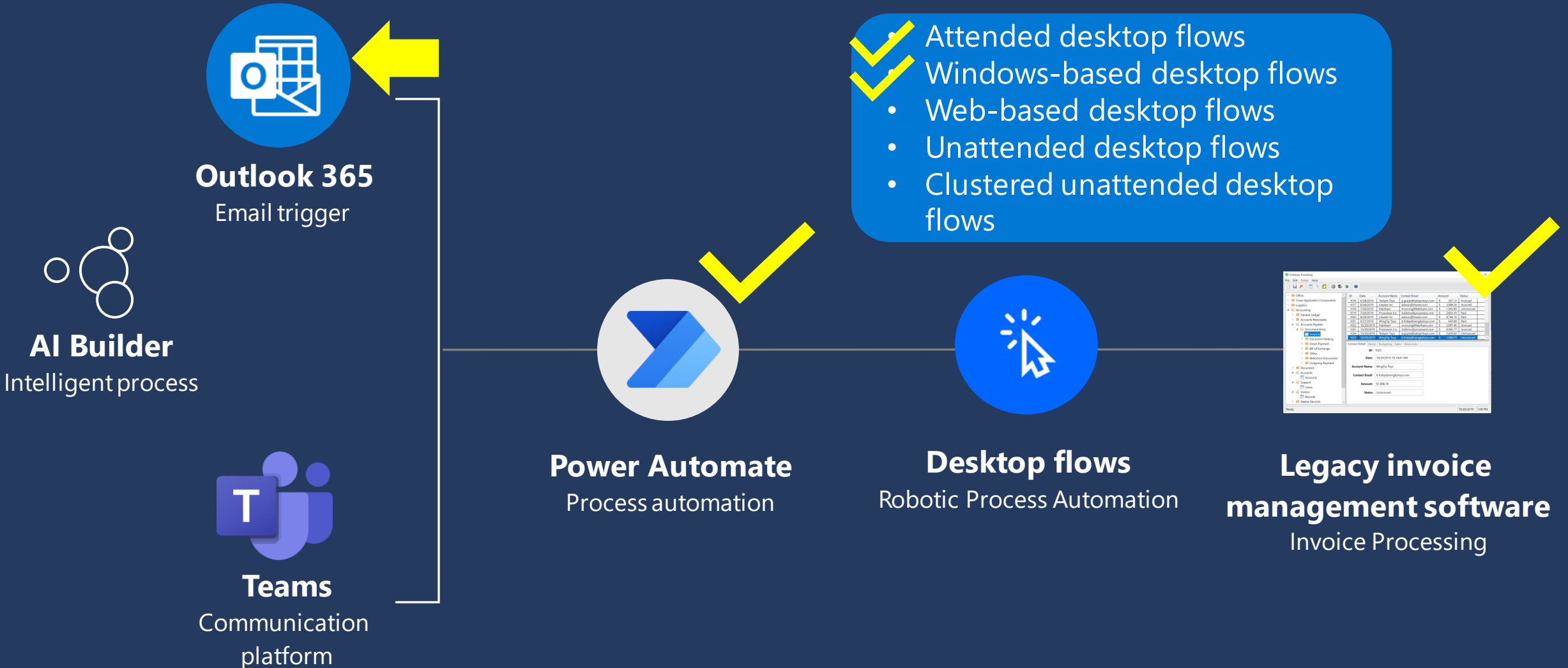


Connectivity & integration

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



Lab 5: Use Outlook email to trigger desktop flows and pass inputs (25 minutes)



Student's demo of lab 5 using Outlook connector as trigger

Session 6: Integrate with AI Builder

AI transformation

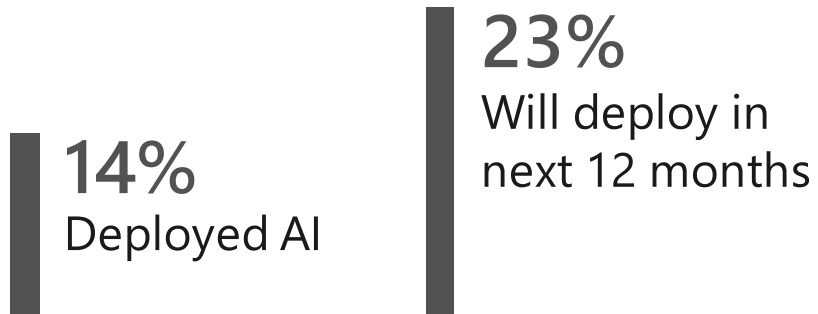
- AI is accelerating the digital transformation for every industry
- Organizations that incorporate AI far outpace their competitors
- However, need a programming or data science background



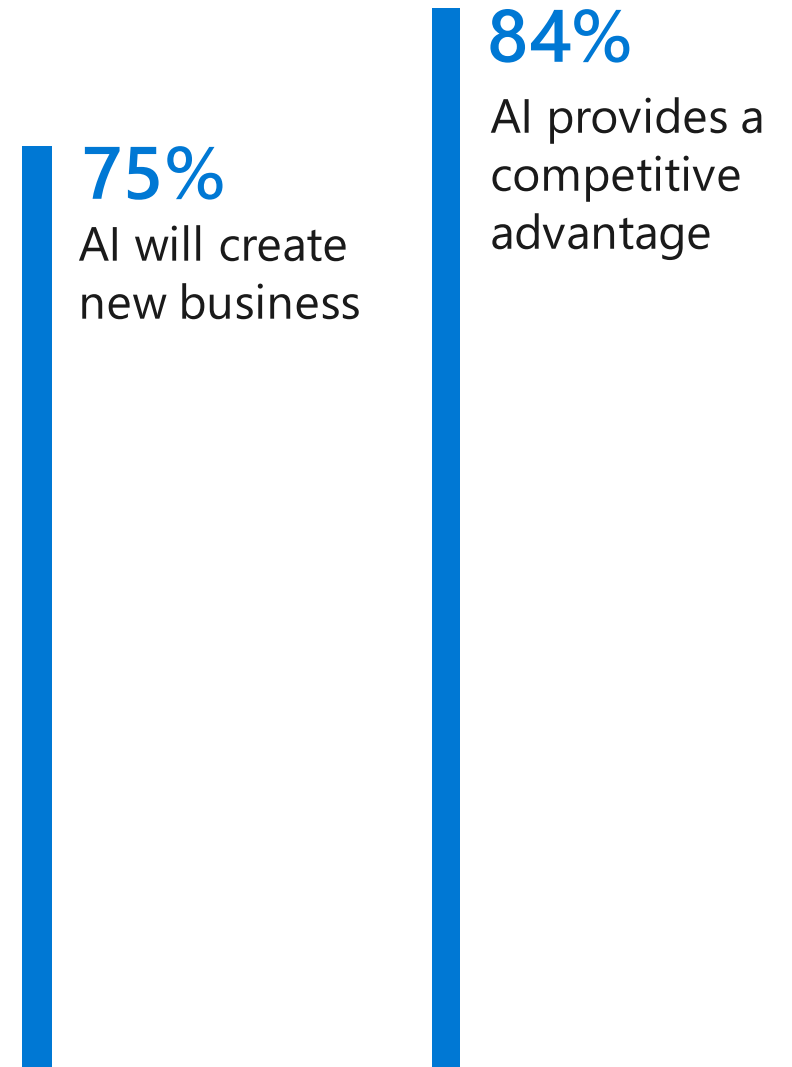
There is a huge gap

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



Vision



Speech



Search



Language



Decision

Why use AI Builder of Power Automate



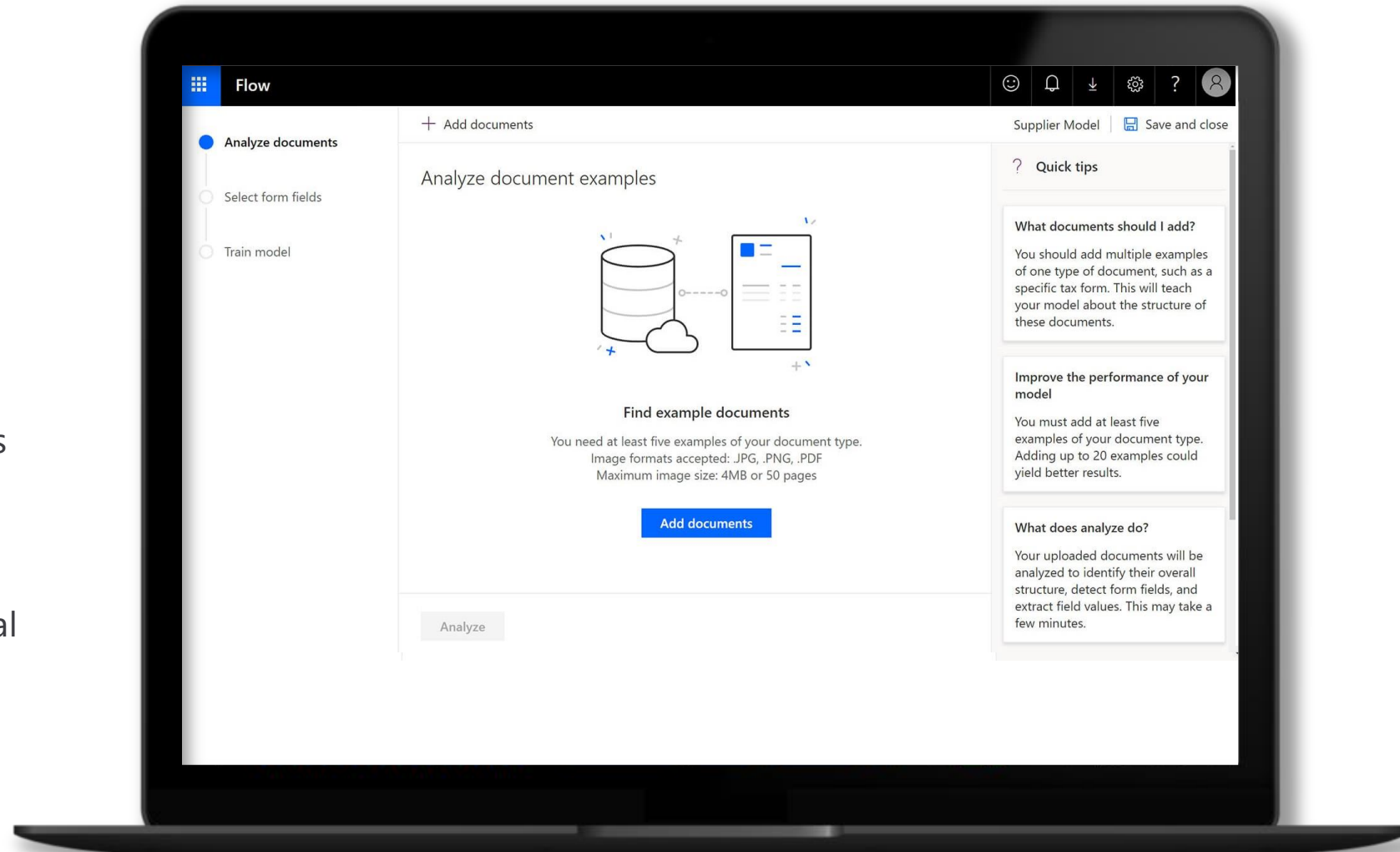
No-code AI



AI for many industry scenarios



AI for multiple industry vertical



Enhance Automation with the Power of AI

Use Powerful Pre-defined AI Models



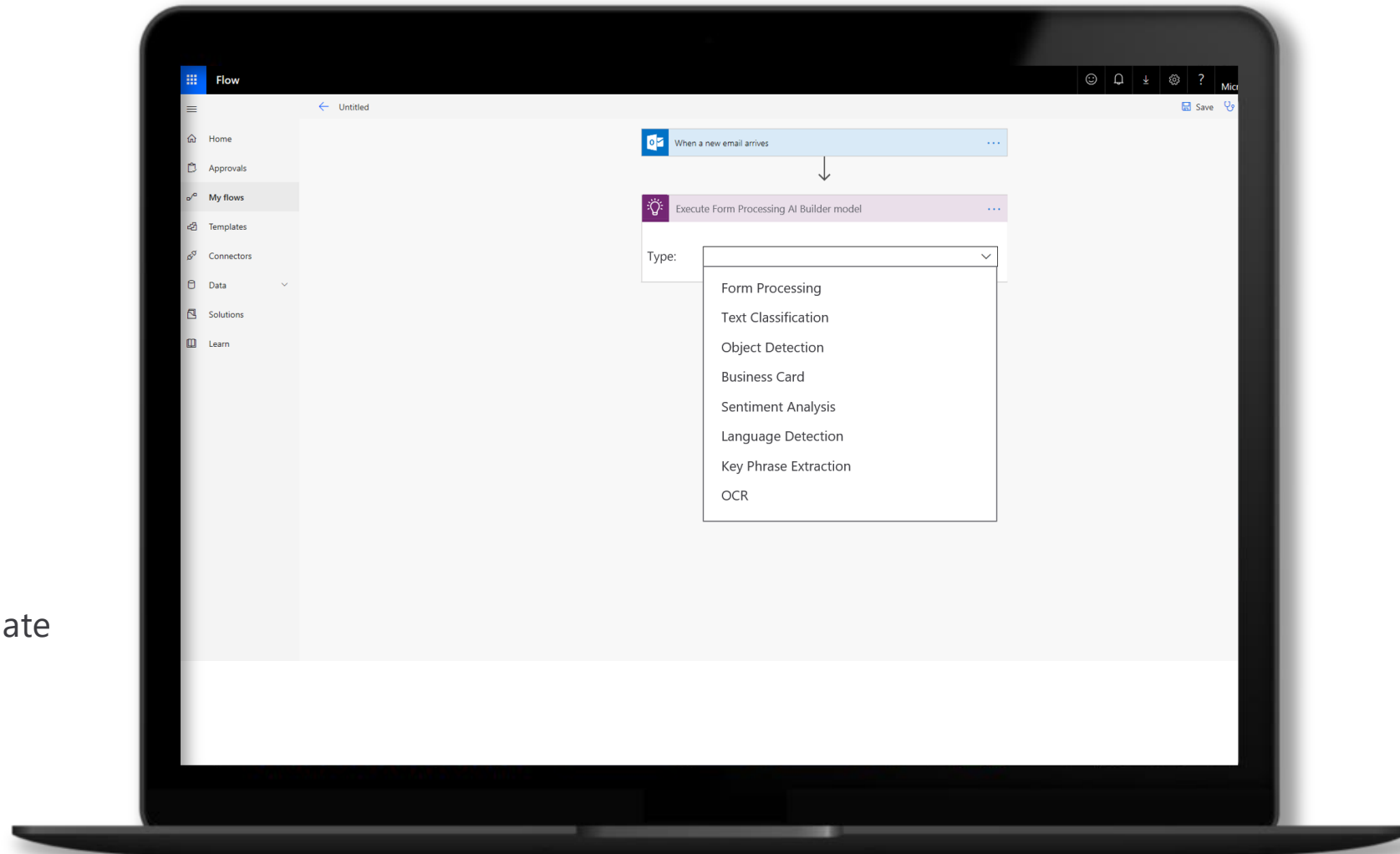
Pre-defined models



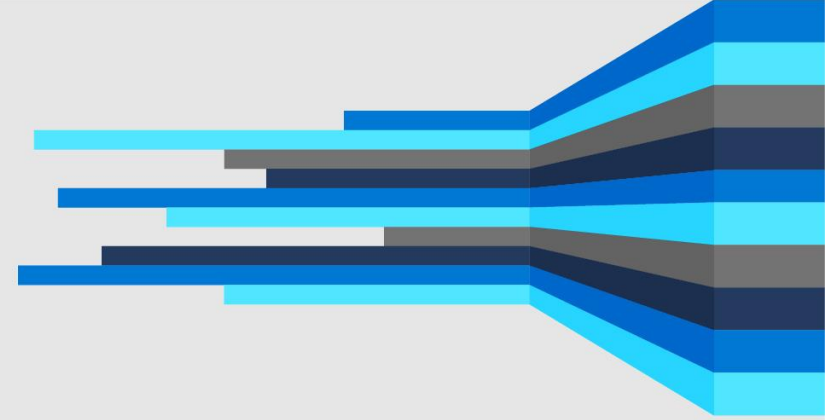
Create Custom Models



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 AI templates

AI Builder

Sorted by popularity

All templates

Top picks

Shared with me

Remote work

Approval

Button

Visio

Data collection

Email

Calendar

Mobile

Send a notification with the sentiment of manager's email using AI Builder

By Microsoft

Automated3874

Extract text from images or PDF documents using AI Builder Text Recognition

By Microsoft

Instant16833

Read information from invoices

By Microsoft

Instant15872

Click a button to read and save information from documents using AI Builder

By Microsoft

Instant10698

Extract entities of received emails using AI Builder

By Microsoft

Automated4558

Route emails as per the language detected by AI Builder on new email

By Microsoft

Automated3457

Analyze incoming emails and route them to the right person

By Microsoft

Automated2864

Notify me on Teams when I receive an email with negative sentiment

By Microsoft

Automated2676

Analyze tech articles with AI Builder and send results to Teams

By Microsoft

Scheduled2380

Track expenses by scanning receipts added to your OneDrive for Business

By Microsoft

Automated2007

Create contact in CDS from a business card using AI Builder on button click

By Microsoft

Instant1236

Click a button to recognize and count objects in images using AI Builder

By Microsoft

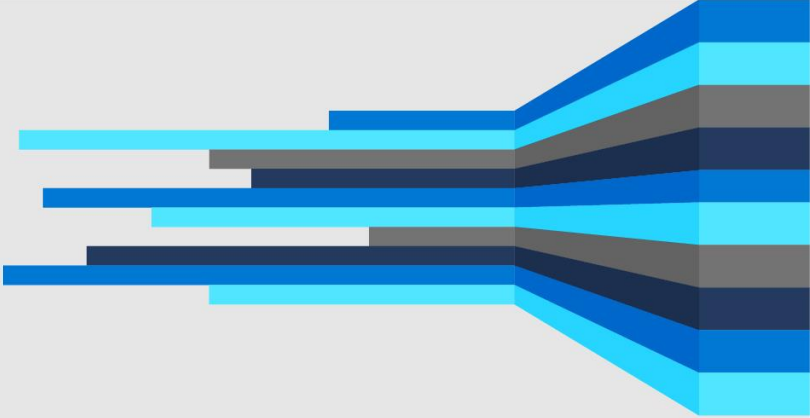
Instant1205

Translate text into another

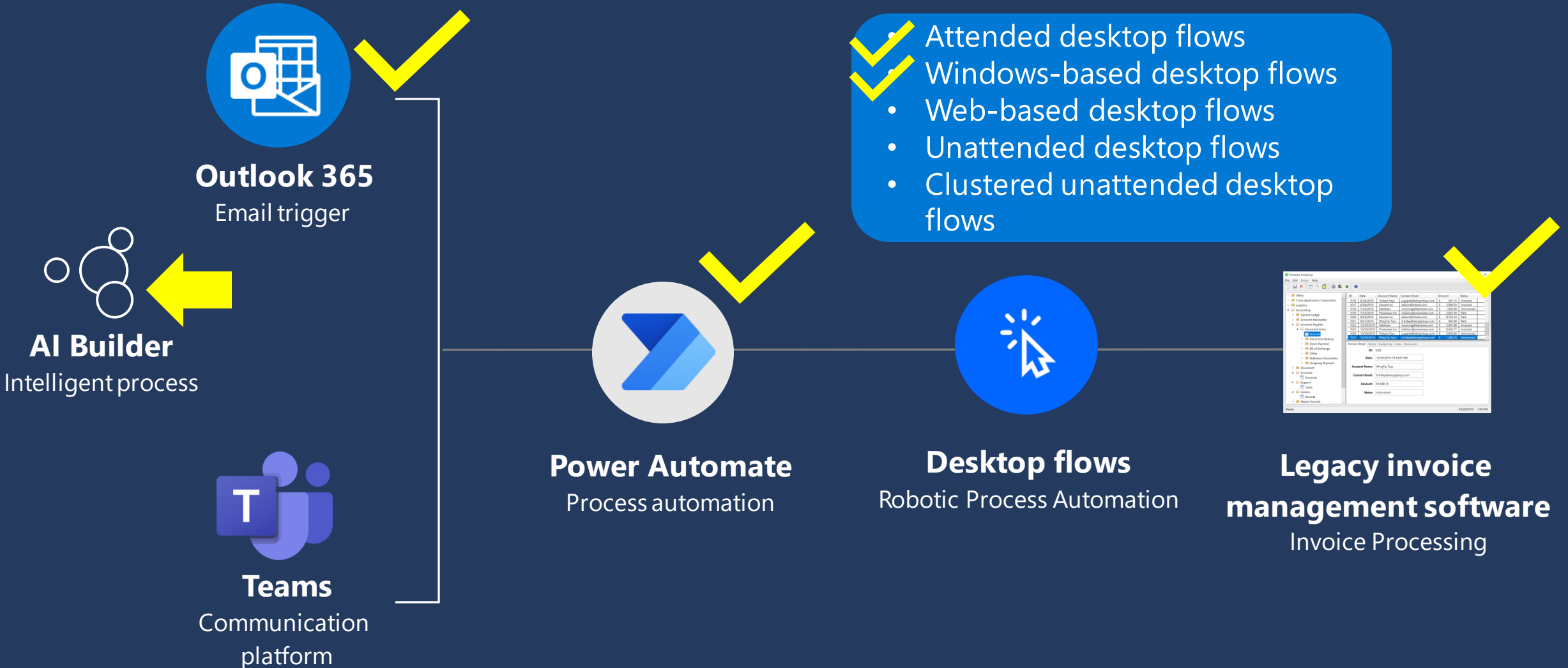
Process receipts from Teams with

Classify Teams messages using AI

Predict in real time when a CDS



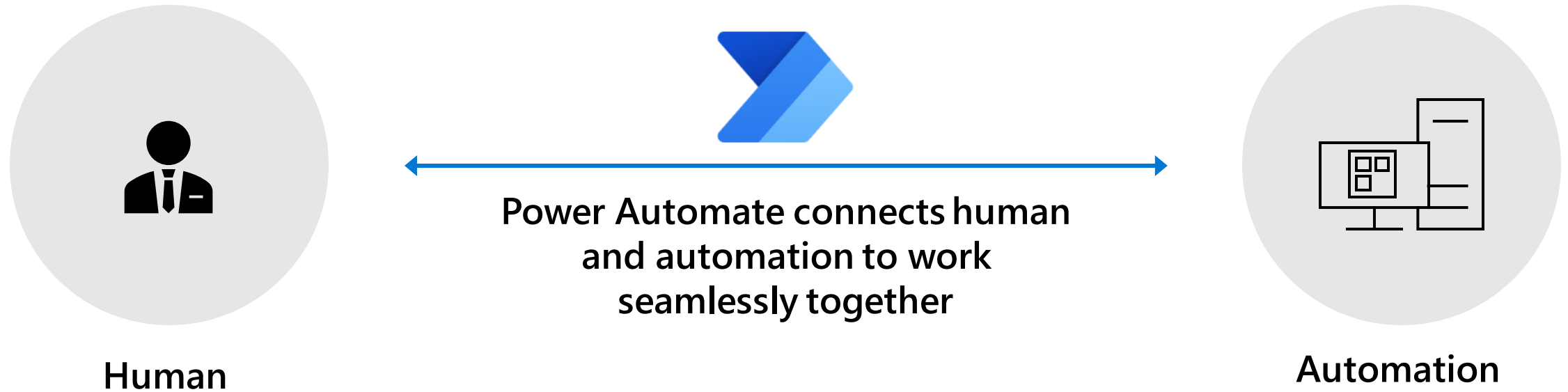
Lab 6: Use AI model to process invoice forms (25 minutes)



Demo of lab 6: using AI Builder in Power Automate to process invoice forms

Session 7: Integrate with approval in Microsoft Teams

Why we need to invite Human into the automation process



Automate human approvals



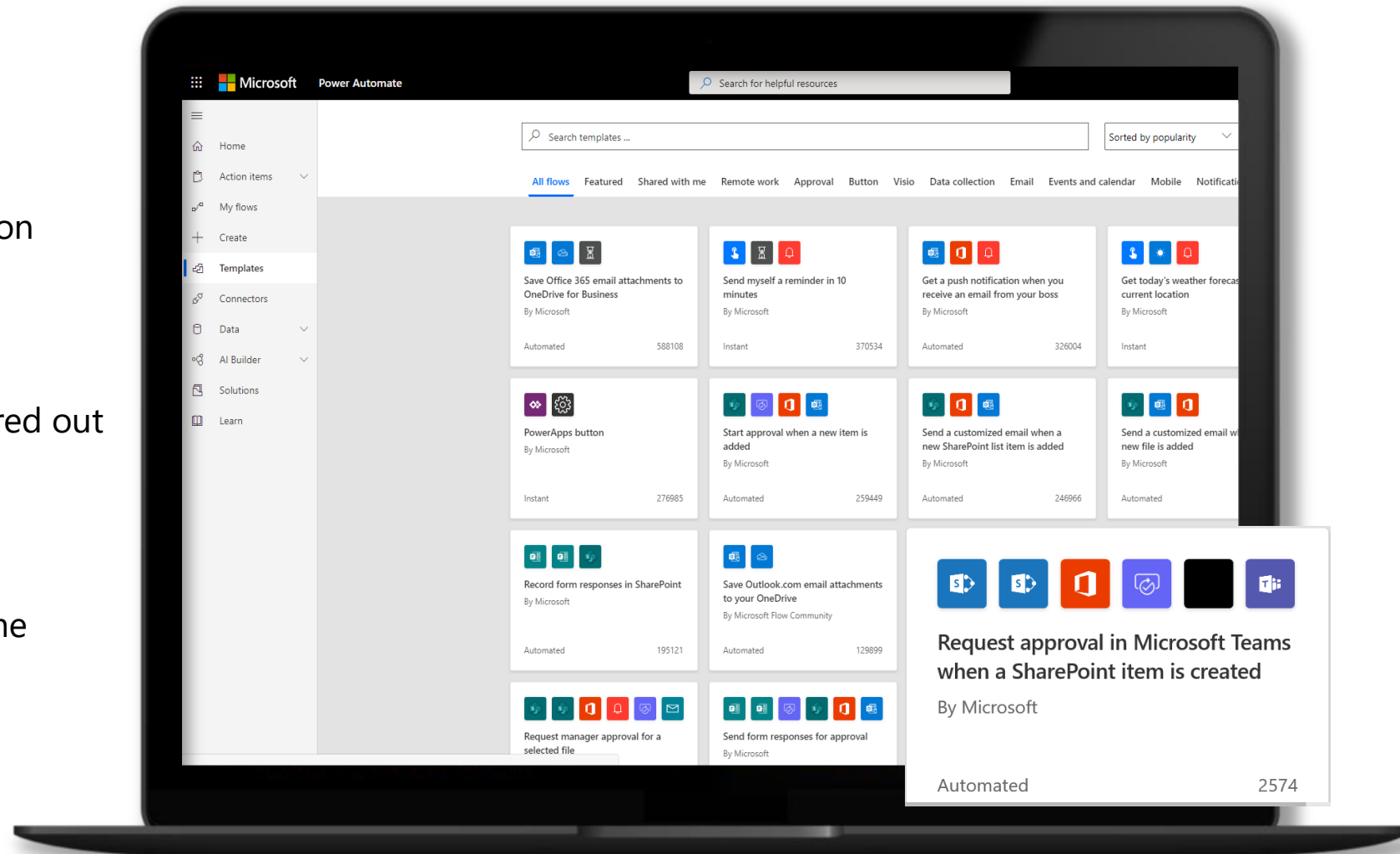
Automate approvals to focus on more valuable tasks



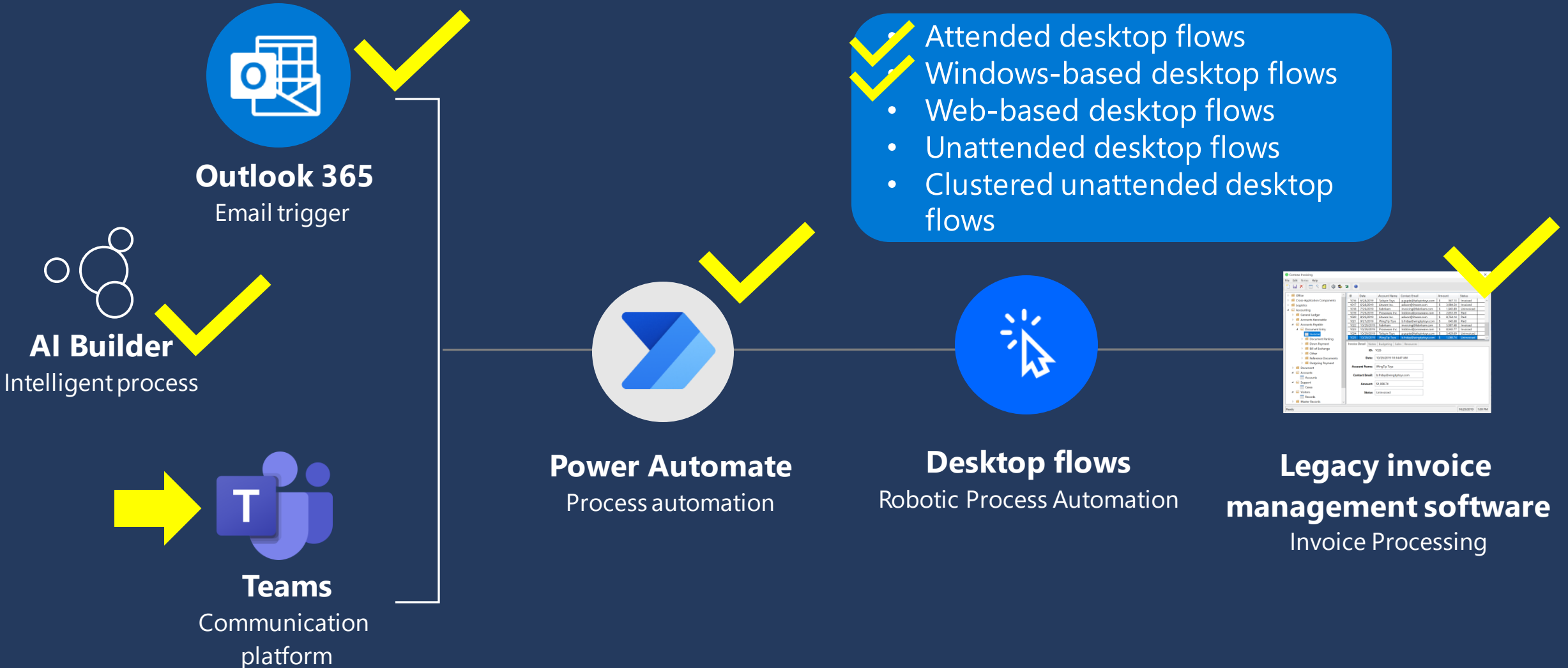
Many approval scenarios offered out of the box



Quickly save departmental time



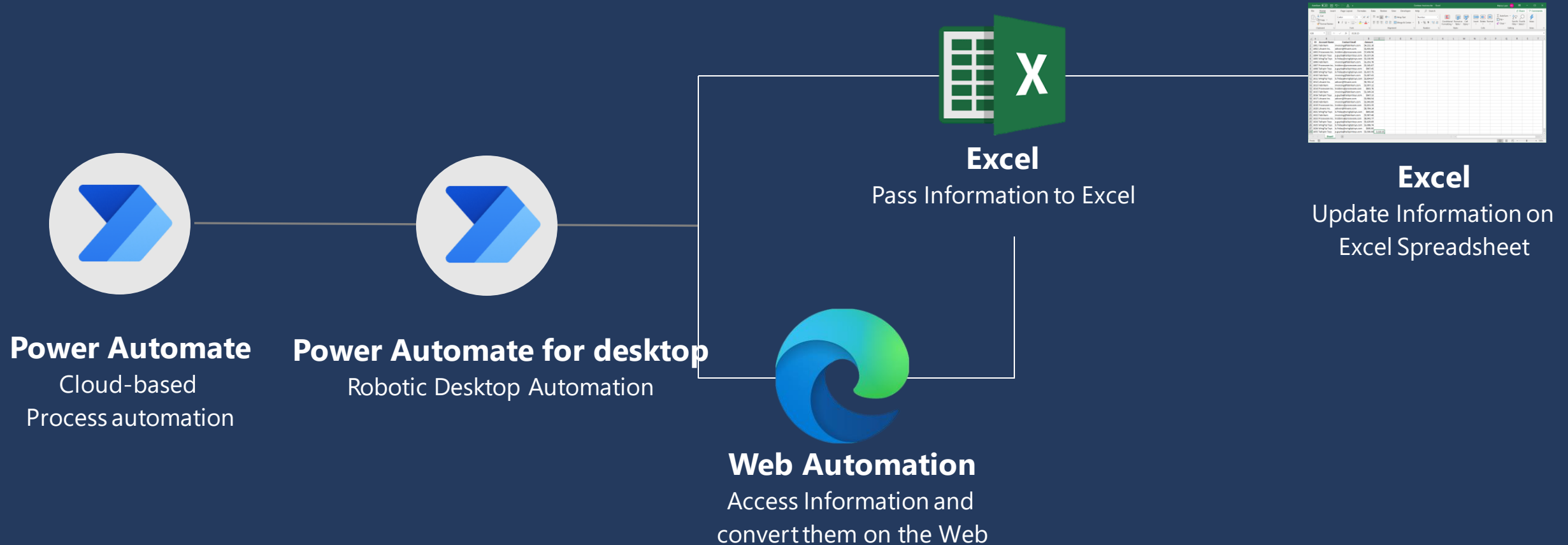
Lab 7: Use Microsoft Teams to integrate approvals (25 minutes)



Student's demo of lab 7: using Teams Approval

Session 8: Use Power Automate for website and Excel

Lab 8: Extend a Power Automate desktop flow to write notes into Excel (90 minutes)



Student's demo of lab 8 using Power Automate for desktop

Lab 8 review Tips & Tricks Power Automate for 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 flow and close the Process Designer before running it from Power Automate.

(Optional)

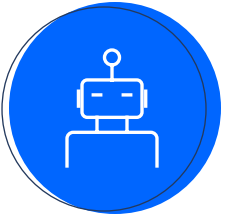
Session 9: Unattended desktop flows

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

The screenshot displays the Power Automate Desktop interface with a workflow titled "Enter an invoice | Power Automate Desktop". The workflow is composed of 12 steps, with the first step being "Run application" which launches "Contoso Invoicing".

The "Contoso Invoicing" application window is shown, featuring a tree view on the left and a data table on the right. The tree view includes folders for Office, Cross-Application Components, Logistics, Accounting, General Ledger, Accounts Receivable, Accounts Payable, Document Entry, Document Parking, Down Payment, Bill of Exchange, Other, Reference Documents, Outgoing Payment, Document, Accounts, Support, Cases, Visitors, Records, and Master Records. The data table lists invoice details:

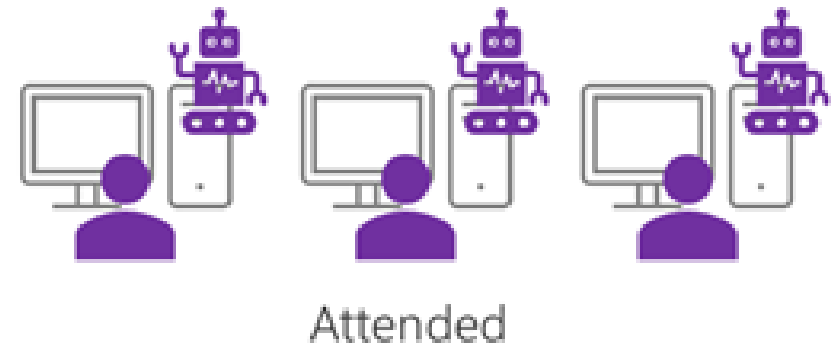
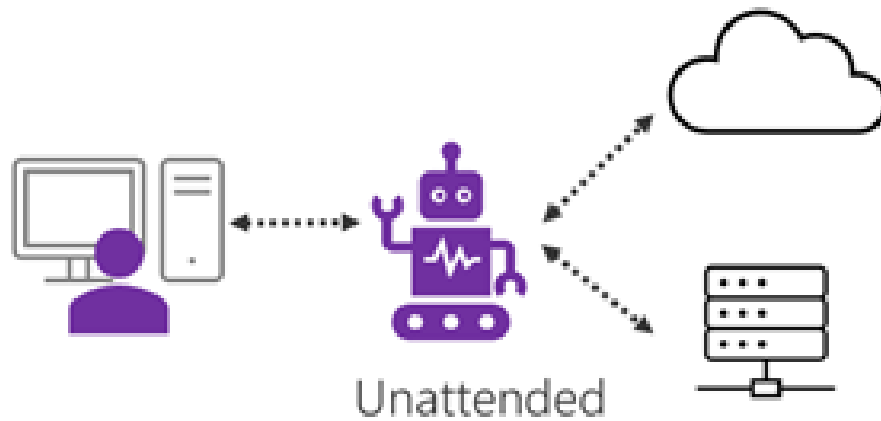
ID	Date	Account Name	Contact Email	Amount	Status
1053	12/15/2020			\$	Uninvoiced
1054	12/15/2020			\$	Uninvoiced
1055	12/15/2020			\$	Uninvoiced
1056	12/15/2020	WingTipToys	b.friday@wingtip toys.com	\$ 500.00	Invoiced
1057	12/15/2020	WingTip Toys	b.friday@wingtip toys.com	\$ 500.00	Invoiced
1058	12/15/2020	WingTip Toys	b.friday@wingtip toys.com	\$ 500.00	Invoiced
1059	12/15/2020	WingTip Toys	b.friday@wingtip toys.com	\$ 500.00	Invoiced
1060	12/15/2020	WingTip Toys	b.friday@wingtip toys.com	\$ 200.00	Invoiced
1061	12/15/2020	WingTip Toys	b.friday@wingtip toys.com	\$ 500.00	Invoiced

The workflow steps include:

- 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

The "Variables" pane on the right shows "Input / output variables" with a count of 4. The "Contoso Invoicing" application window also displays an "Invoice Detail" form with fields for ID (1061), Date (12/15/2020), Account (WingTip Toys), Contact (b.friday@wingtip toys.com), Amount (\$500.00), and Status (Invoiced).

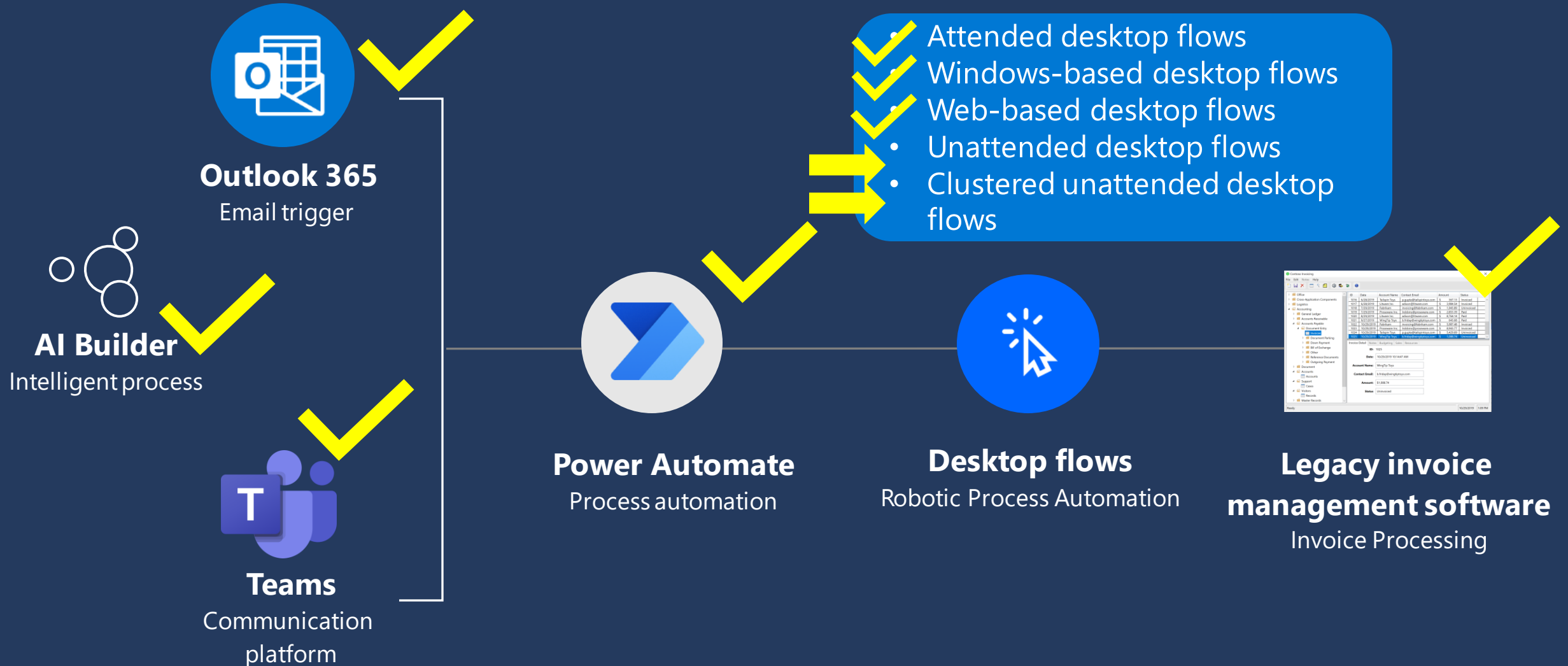
RPA in Power Automate: Unattended



Machine group (cluster) – scale up the automation

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

Lab 9: Test RPA in Unattended mode (90 minutes)



Demo of lab 9: unattended desktop flow that run on a group of VMs

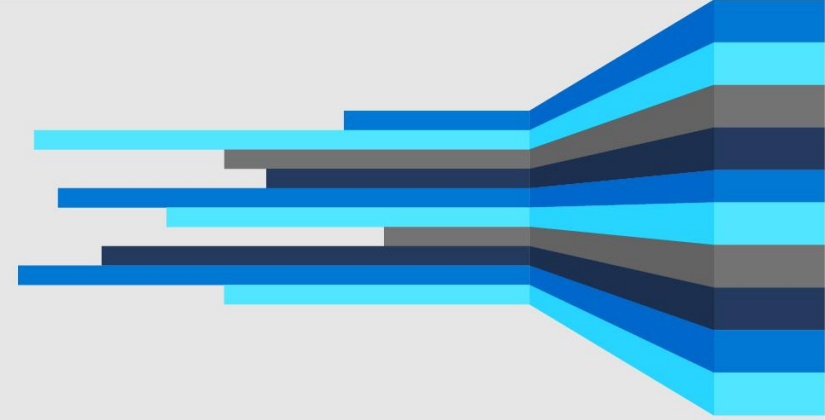
Lab 9 review Tips & Tricks

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 9 review: Tips & Tricks for machine groups

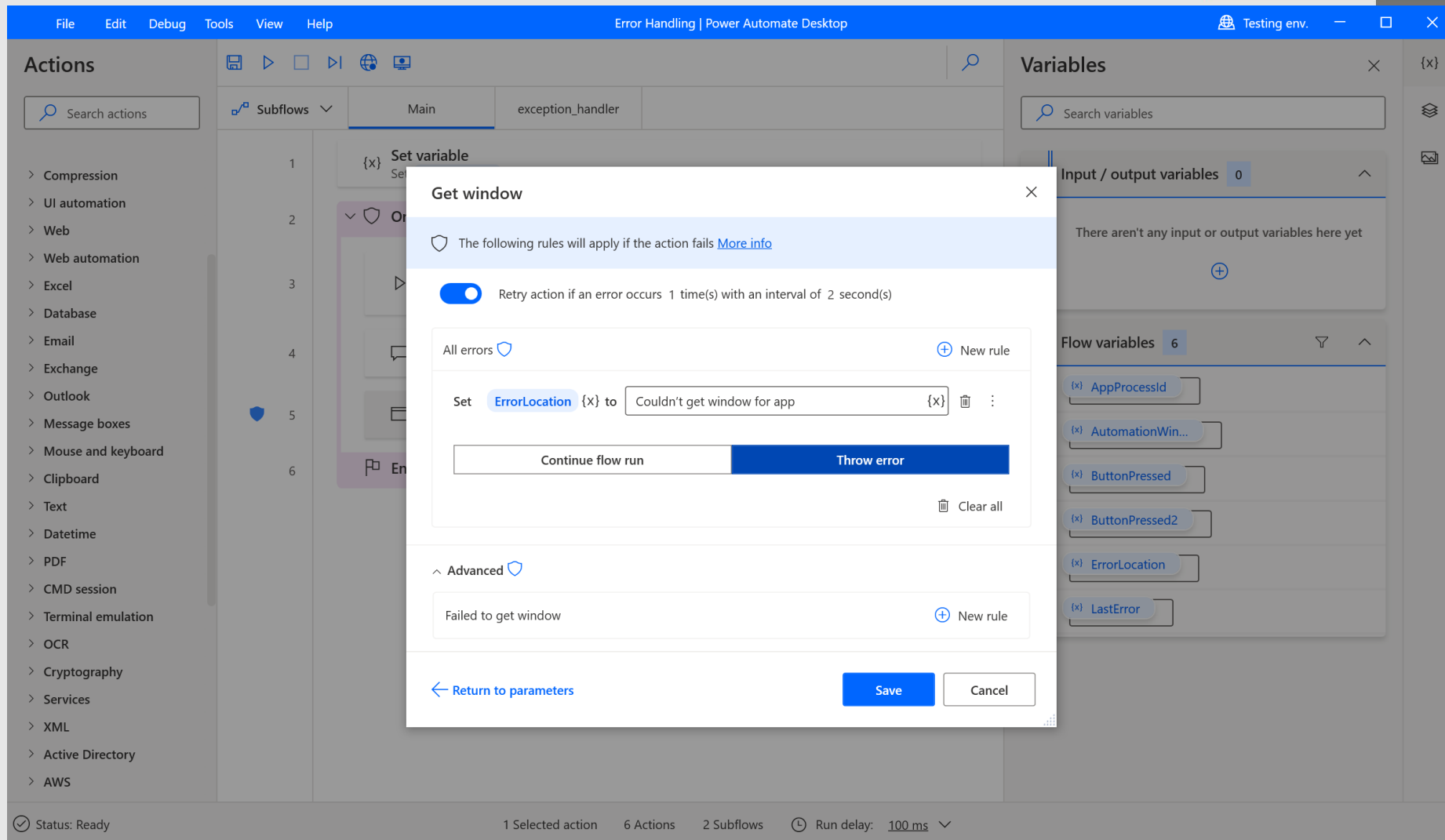


- ✓ Group is a set of machines.
- ✓ The group name can be any. Other machines are just added to this existing group (cluster).
- ✓ From the portal groups details page, you will see the other machines in this group.
- ✓ On the portal machines page, you can configure the group to run in distributed mode 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.

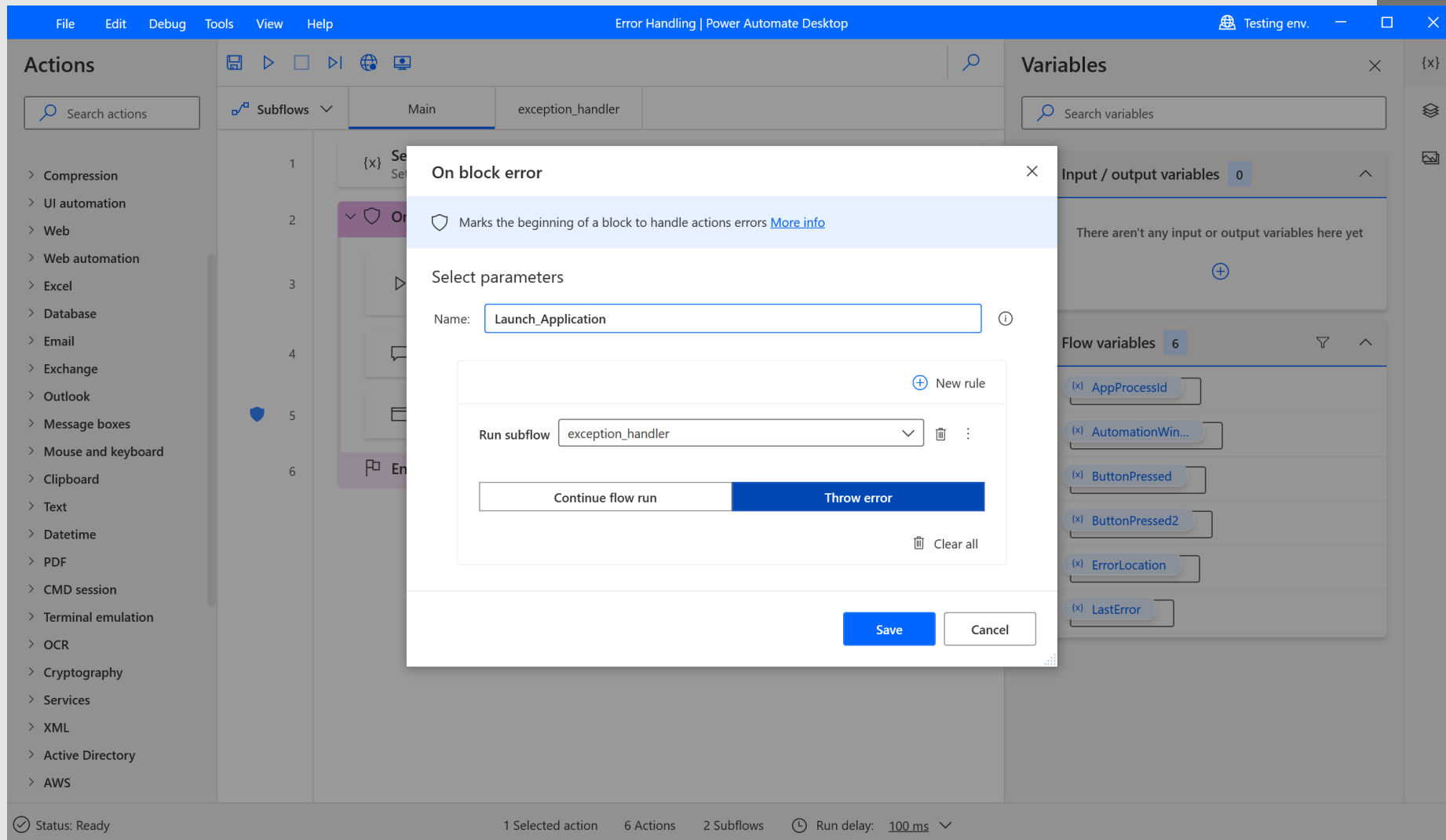
(Optional)

Session 10: Error handling

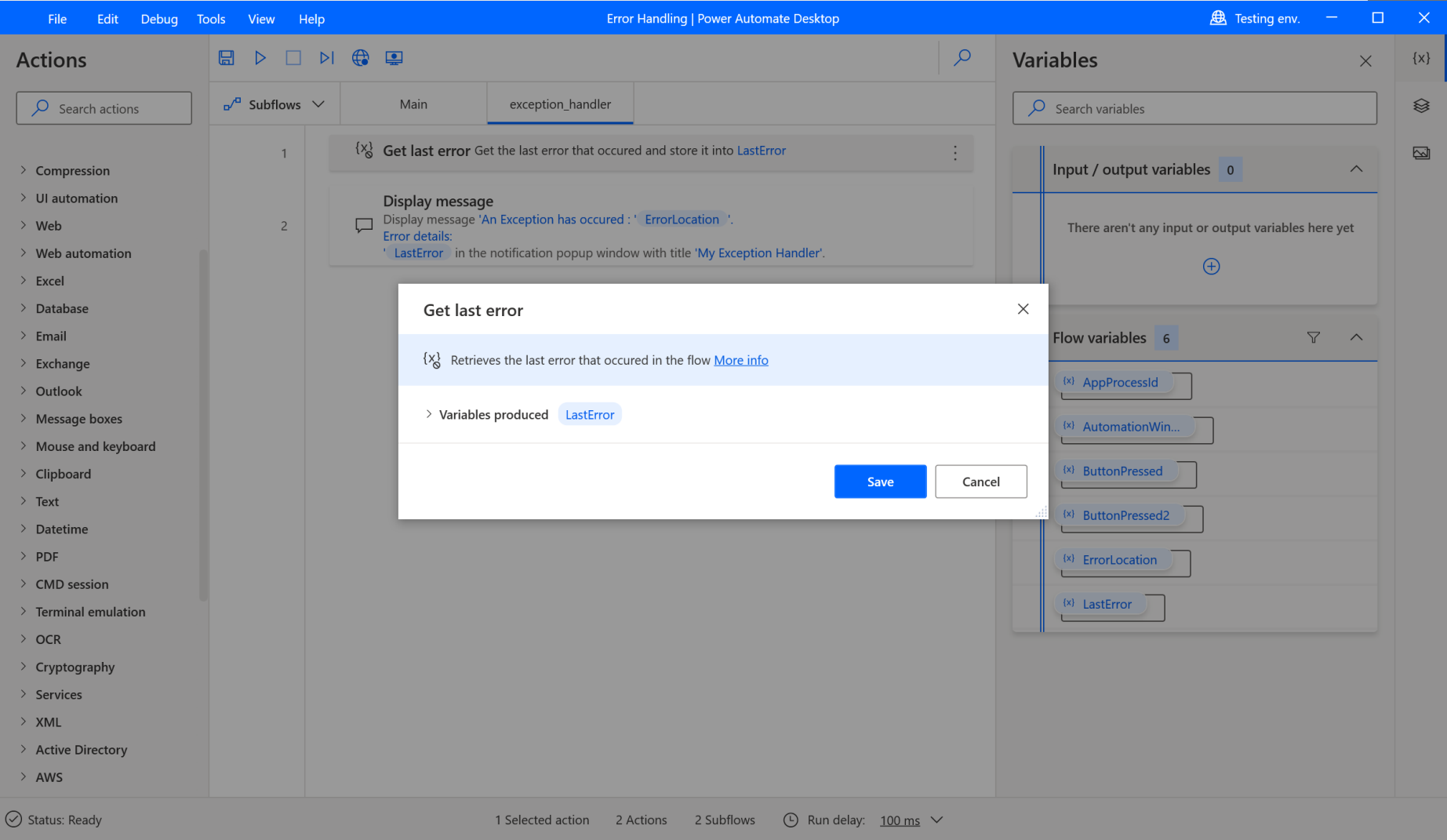
Action level exception handling



Group level exception handling



Get last error



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

Errors can be caught:

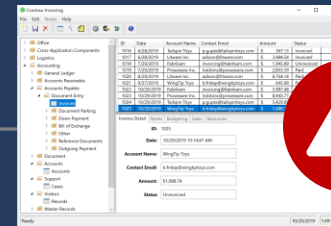
- At action level
- At group of actions (on block error)
- In cloud flow, at "Run a flow built with Power Automate for desktop" action



Power Automate
Cloud-based
Process automation



Power Automate for desktop
Robotic Desktop Automation



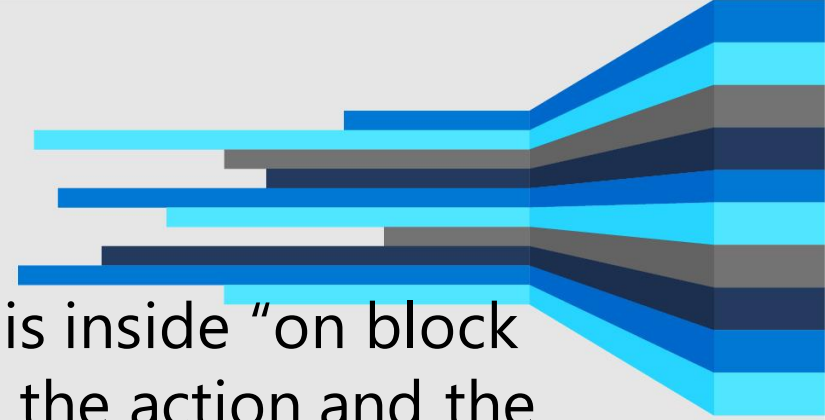
Error occurs

Legacy Software
Invoice Processing

Demo of lab 11: error handling inside Power Automate for desktop and Power Automate

Lab 10 review Tips & Tricks

Error handling

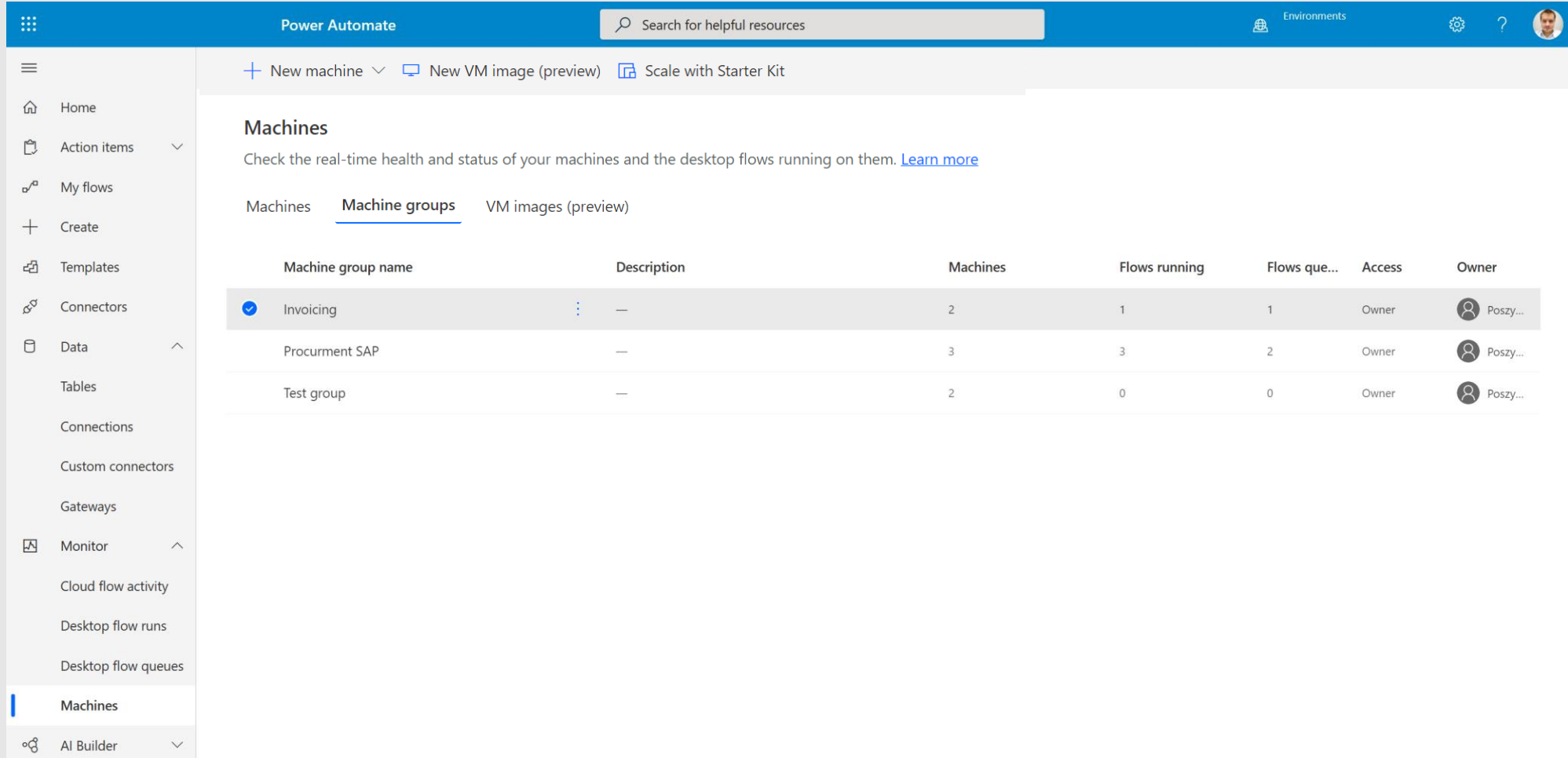


- ✓ If you configure error handling on an action level that is inside "on block error", then if exception occurs, both instructions from the action and the block level will be executed.
- ✓ If error handling inside desktop flow is configured to continue the flow, action "Run a flow built with Power Automate for 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 for 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 queues

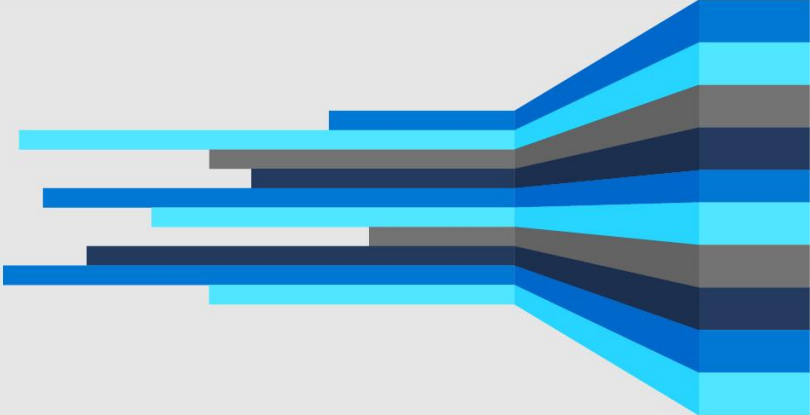
Monitor desktop flow runs on machines or machine groups



The screenshot displays the 'Machines' section of the Power Automate interface. The left sidebar contains navigation options: Home, Action items, My flows, Create, Templates, Connectors, Data, Tables, Connections, Custom connectors, Gateways, Monitor, Cloud flow activity, Desktop flow runs, Desktop flow queues, Machines (selected), and AI Builder. The main content area shows the 'Machines' page with a search bar and tabs for 'Machines', 'Machine groups' (selected), and 'VM images (preview)'. Below the tabs is a table listing machine groups.

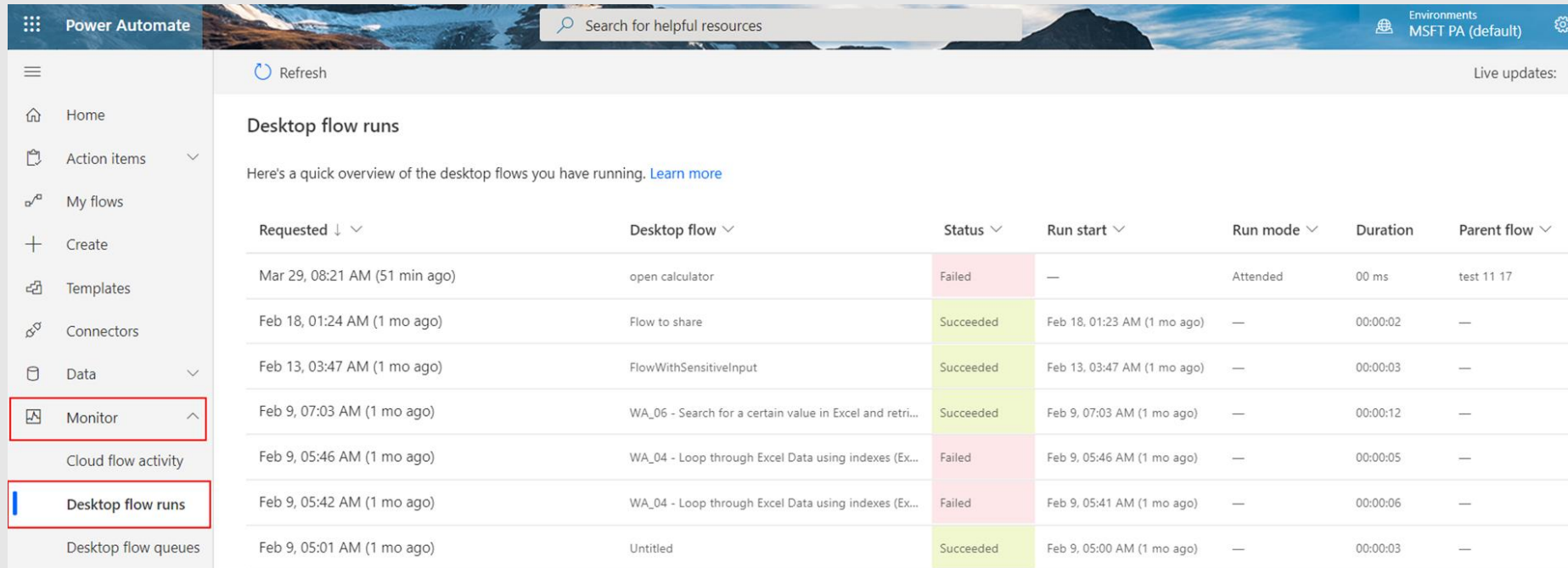
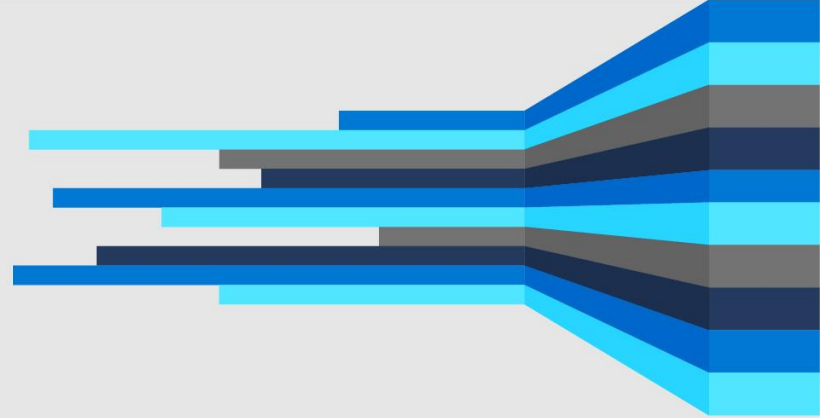
Machine group name	Description	Machines	Flows running	Flows que...	Access	Owner
Invoicing	—	2	1	1	Owner	Poszy...
Procurement SAP	—	3	3	2	Owner	Poszy...
Test group	—	2	0	0	Owner	Poszy...

Manage queue and priorities



Queue	Desktop flow	Requested	Priority	Status	Run start	Parent flow
	Enter data into invoice application	29 sec ago	High	Running	8 sec ago	Process shipping...
	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



Power Automate Search for helpful resources Environments MSFT PA (default)

Refresh Live updates: (

Desktop flow runs

Here's a quick overview of the desktop flows you have running. [Learn more](#)

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 retri...	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 11 (optional): Monitor desktop flow runs (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 for desktop

Robotic Desktop Automation

Queue	Desktop Flow	Requested	Priority	Status	Run Date	Next Run
1	Flow 1: Get the top 10 items from the list	2023-10-27 10:00	High	Running	2023-10-27 10:00	2023-10-27 10:05
2	Flow 2: Get the top 10 items from the list	2023-10-27 10:00	High	Waiting	2023-10-27 10:00	2023-10-27 10:05
3	Flow 3: Get the top 10 items from the list	2023-10-27 10:00	High	Waiting	2023-10-27 10:00	2023-10-27 10:05
4	Flow 4: Get the top 10 items from the list	2023-10-27 10:00	High	Waiting	2023-10-27 10:00	2023-10-27 10:05
5	Flow 5: Get the top 10 items from the list	2023-10-27 10:00	High	Waiting	2023-10-27 10:00	2023-10-27 10:05
6	Flow 6: Get the top 10 items from the list	2023-10-27 10:00	High	Waiting	2023-10-27 10:00	2023-10-27 10:05
7	Flow 7: Get the top 10 items from the list	2023-10-27 10:00	High	Waiting	2023-10-27 10:00	2023-10-27 10:05
8	Flow 8: Get the top 10 items from the list	2023-10-27 10:00	High	Waiting	2023-10-27 10:00	2023-10-27 10:05
9	Flow 9: Get the top 10 items from the list	2023-10-27 10:00	High	Waiting	2023-10-27 10:00	2023-10-27 10:05
10	Flow 10: Get the top 10 items from the list	2023-10-27 10:00	High	Waiting	2023-10-27 10:00	2023-10-27 10:05

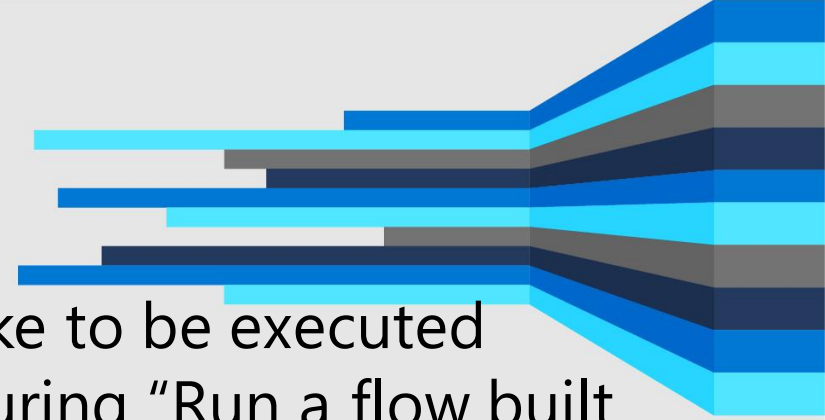
Monitor

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

Demo of lab 12: monitoring desktop flow runs and managing runs queue

Lab 11 review Tips & Tricks

monitor machines and run 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 for 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.

(Optional)

Session 12:

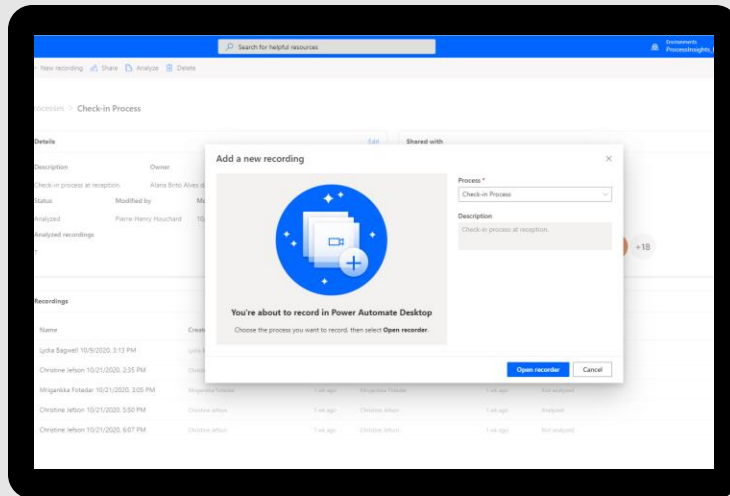
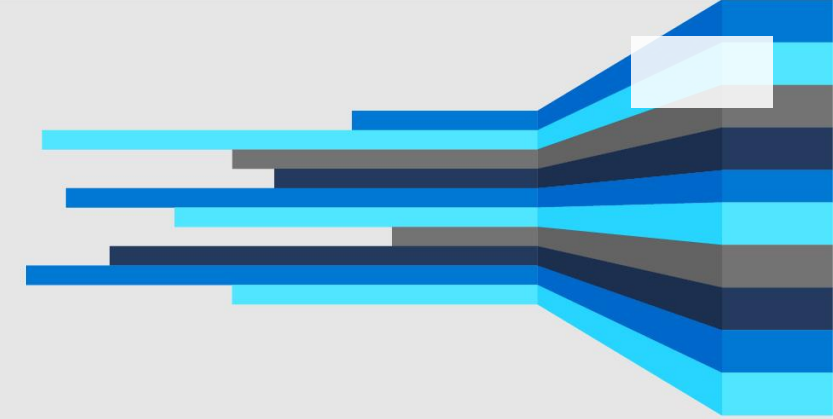
Identify automation opportunities using Process advisor



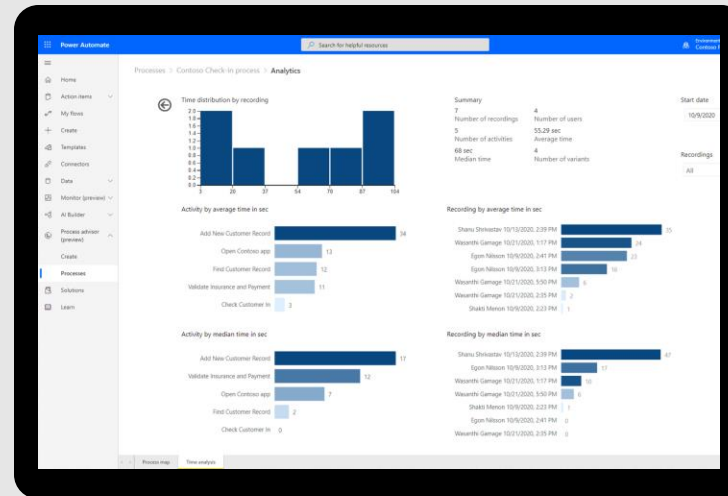
Introducing Process advisor

Introducing Process advisor

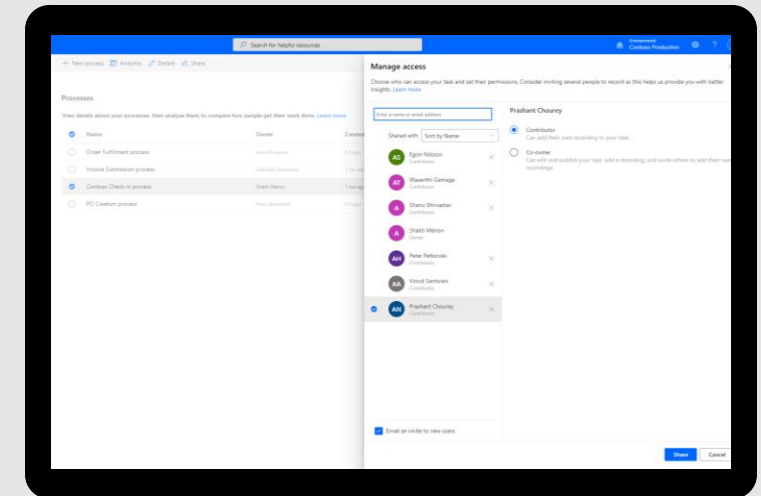
Enabling automation for everyone to optimize how they work



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



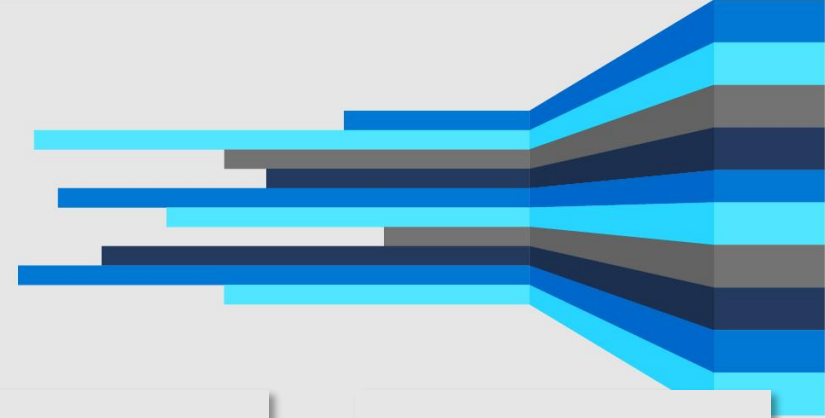
Gain deeper insights
on processes and break down
complex processes.



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.

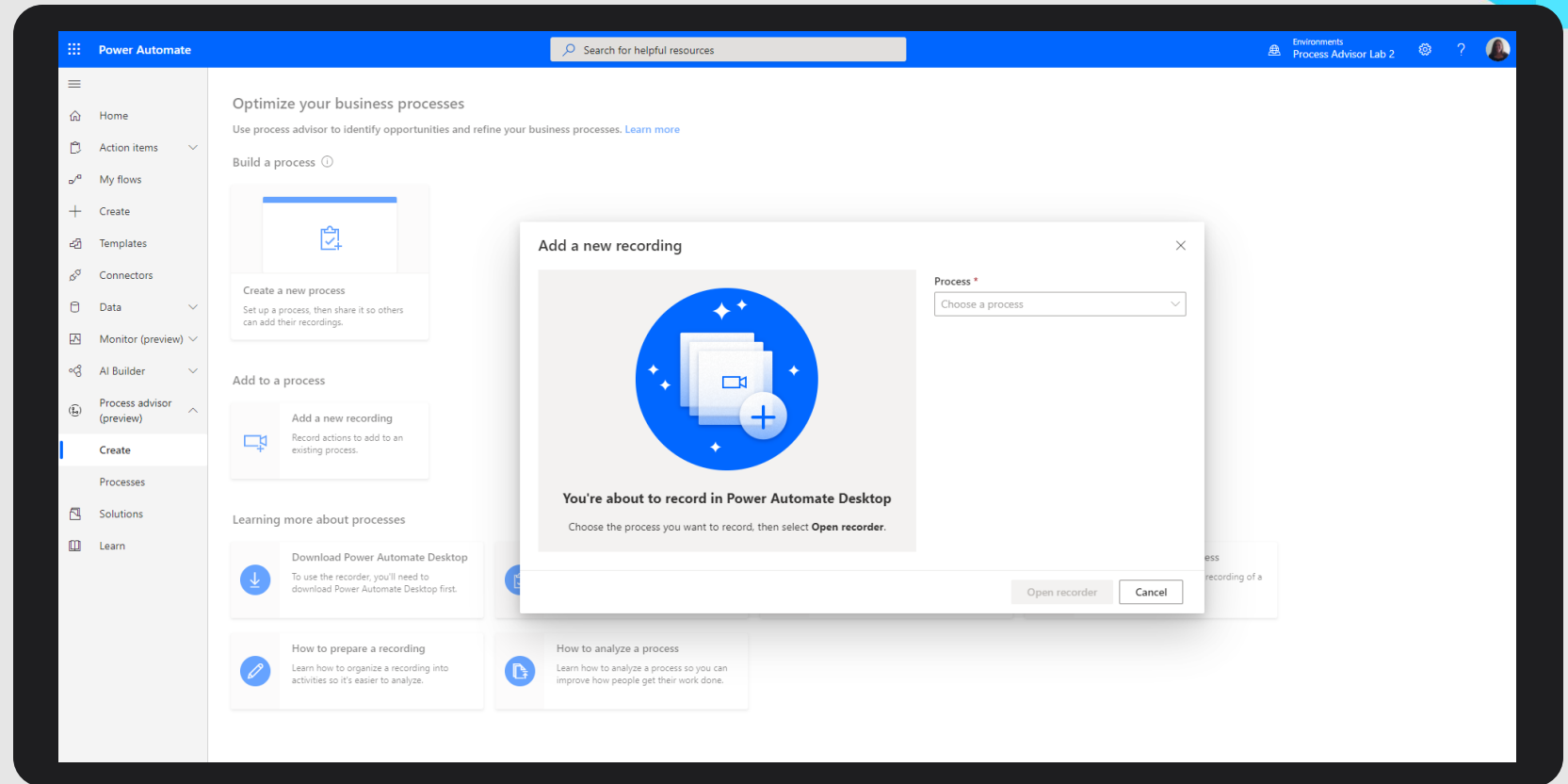


Analyze

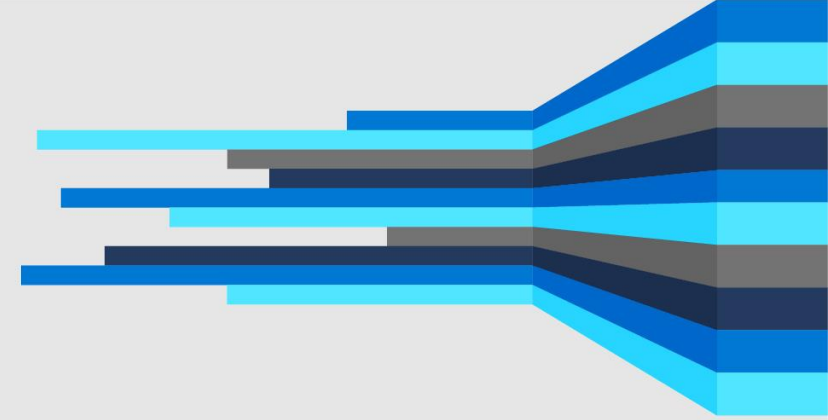
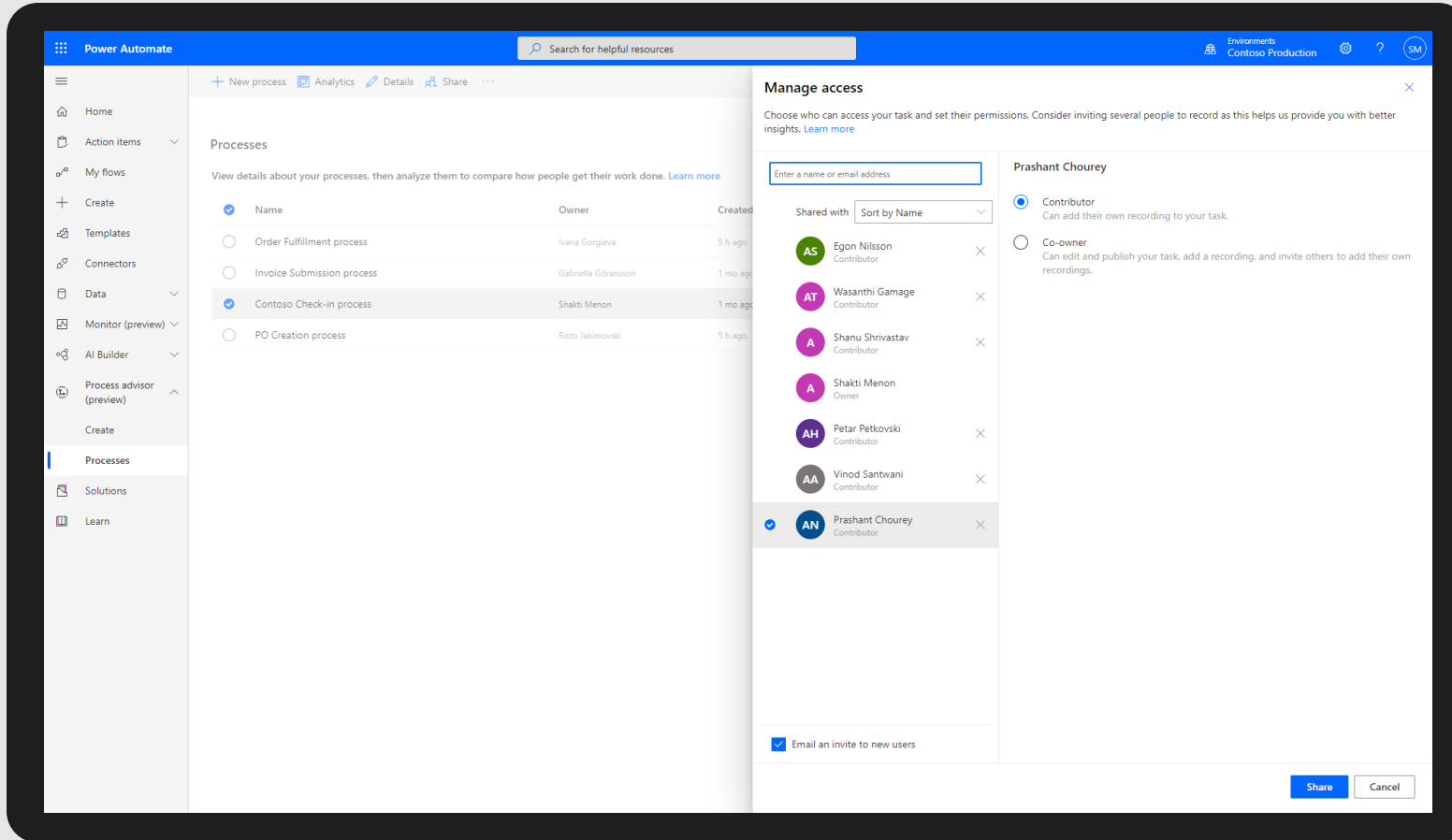
Generate a process map so that you can analyze it and get insights.

Click to edit Master title style

- Import existing event logs and analyze
- Record processes for detailed steps of any process
- Easy to use, intuitive interface



Click to edit Master title style



Include multiple recordings from you and your colleagues

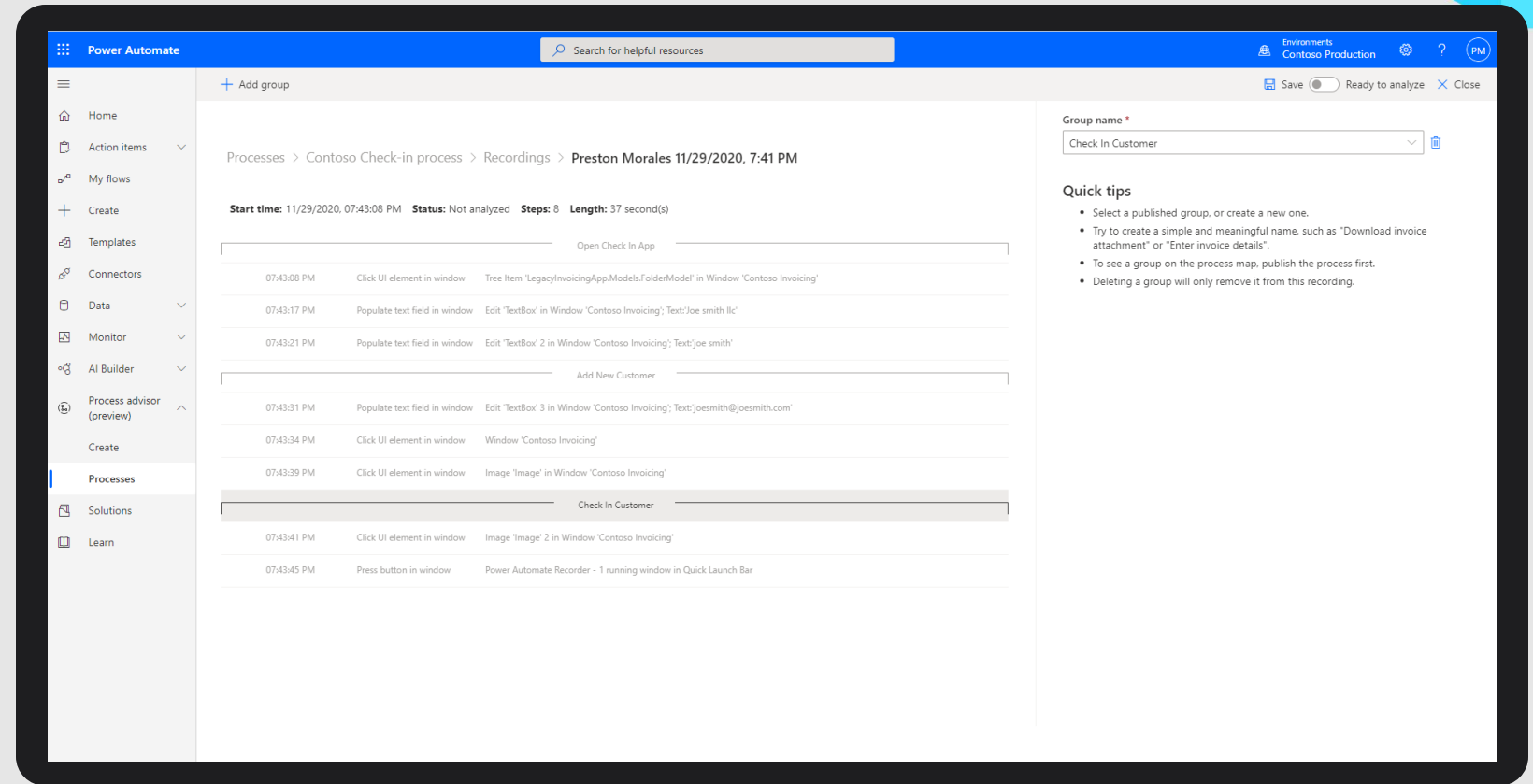
Share processes and collaborate

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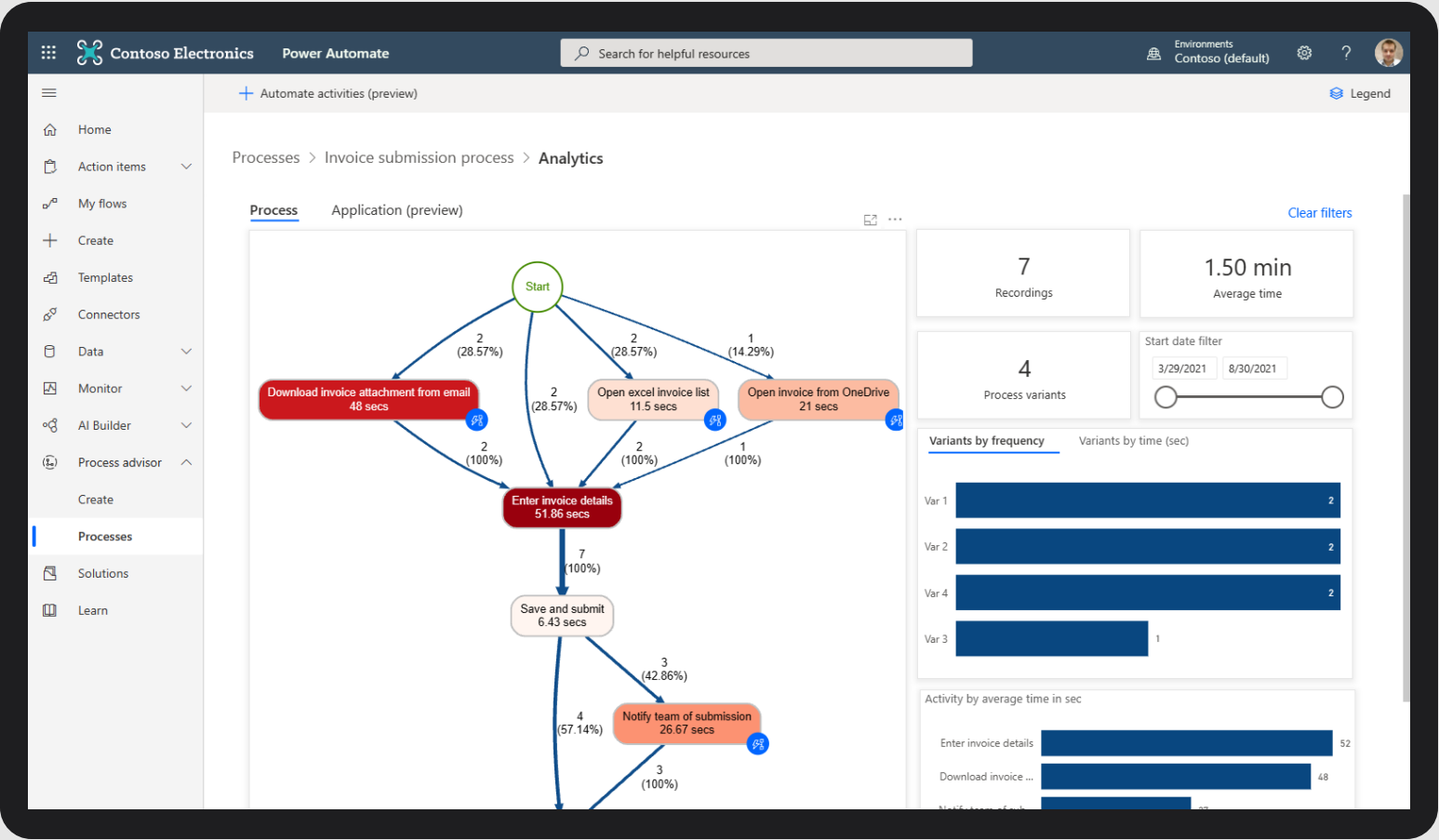
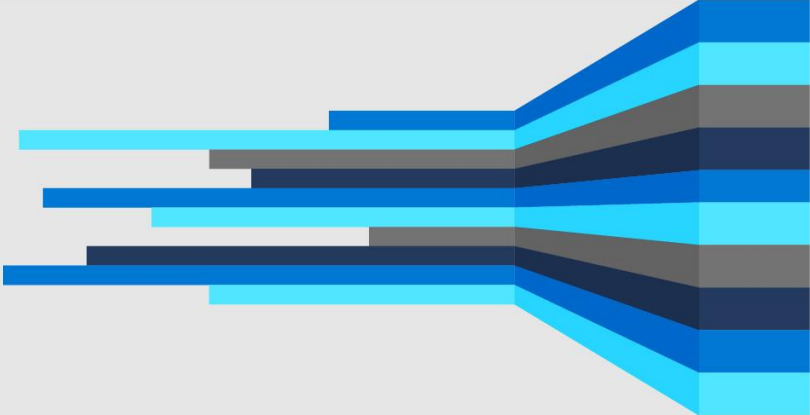


Easily group steps and keep standardized with existing groups

Manage sensitive data



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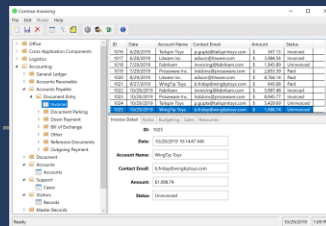


- Identify inefficiencies and areas for potential automation
- Use default analytics to gain insights
- View the end-to-end visualization

Click to edit Master title style



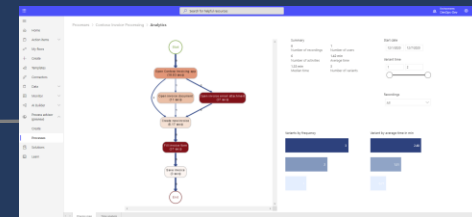
- Record Contoso Invoicing interactions
- Edit recording transcripts and add groups
- Analyze process performance, identify bottlenecks and gain insights
- Prepare for automation



Contoso Invoicing
Legacy Application



Power Automate
Recording

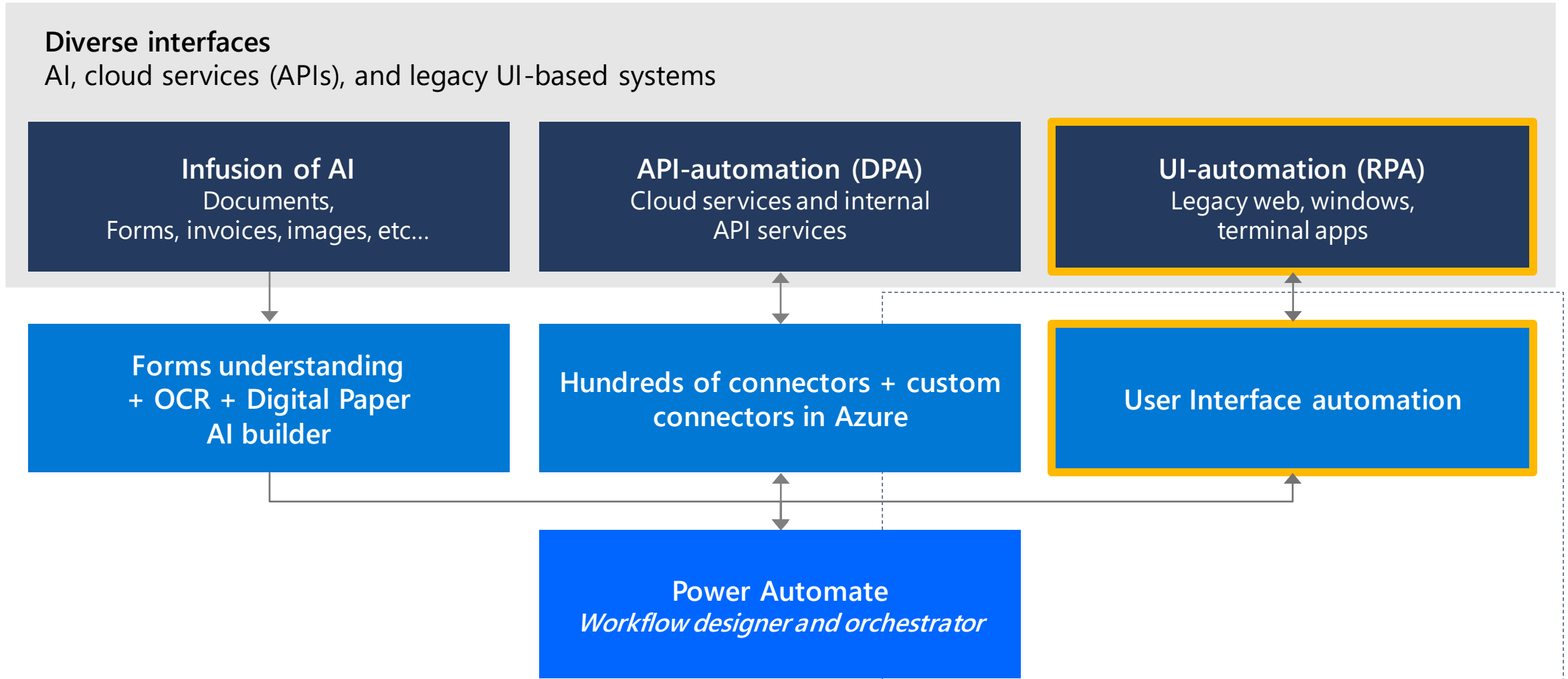


Process advisor
Analytics

Session 13: Summary

Power Automate RPA Licensing & Roadmap

Completing the automation portfolio w/RPA



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

Licensing

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

Power Automate offers

Best for businesses that want predictable licensing with per-user or per-bot plans

Power Automate Premium	Power Automate Process
<div>\$15</div> <div>per user/month</div> <p>Enables licensed users to automate modern applications via API-based digital process automation (cloud flows) and legacy applications via UI-based robotic process automation (desktop flows) in attended mode.</p> <ul style="list-style-type: none">Unlimited cloud flows (DPA) and desktop flows (RPA) in attended mode50 MB Power Automate Process Mining data storage¹5,000 AI Builder creditsDataverse entitlements of 250 MB database and 2 GB file <div>Buy now ></div>	<div>\$150</div> <div>per bot/month⁶</div> <p>Licenses a single “automation” bot that can be used for unattended desktop automation (RPA), or a digital process automation (DPA) flow that can be accessed by unlimited users in the organization.</p> <ul style="list-style-type: none">Cloud flows (DPA)Desktop flows (RPA) in unattended modeDataverse entitlements of 50 MB database and 200 MB file <div>Buy now ></div>

Pay-as-you-go plans

Best for businesses that want the flexibility to pay only when a flow runs³

License by flow run	License by flow run	License by flow run
<div>\$0.60</div> <div>per flow run⁴</div> <p>Pay for each cloud flow run</p> <p>Includes the following:</p> <ul style="list-style-type: none">Cloud flows (DPA) <div></div>	<div>\$0.60</div> <div>per flow run⁴</div> <p>Pay for each desktop flow (attended mode) run</p> <p>Includes the following:</p> <ul style="list-style-type: none">Desktop flows (RPA) in attended mode <div></div>	<div>\$3</div> <div>per flow run⁴</div> <p>Pay for each desktop flow (unattended mode) run</p> <p>Includes the following:</p> <ul style="list-style-type: none">Desktop flows (RPA) in unattended mode <div></div>

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.

Session 14 (optional)

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 AppsInnovation Backlog

Submitted Ideas

Search

+ Add idea

Supplier Invoice Processing

Developer Owner: Available

Not configured

108.7 hours/month

Complexity

EditEmail votersEmail creatorsShareSend for testingGet feedback on solution

Idea

Supplier Invoice Processing

Pain Points

Time Consuming Manual Work, Error Prone, Data Loss

Estimated return on investment

Not Configured

108.7 hours/month

Complexity

Complexity

Keywords

invoice, excel

Tools

Number of Likes: 1

Remove like

Status

New

Edit status

Developer Owner

Available

Edit dev owner

Being developed for

+ Add team repro

Finance

CoE pick an idea for development

Power Apps | Innovation Backlog


← Send email

Cancel

Send email

To






AdeleV@PPlatform.OnMicrosoft.com; LeeG@PPlatform.OnMicrosoft.com; AdeleV@PPlatform.OnMicrosoft.com;



Subject

Please provide feedback on work for: Invoice Processing3

Body


Format - **B** / U |     

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

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](#)

Group 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?

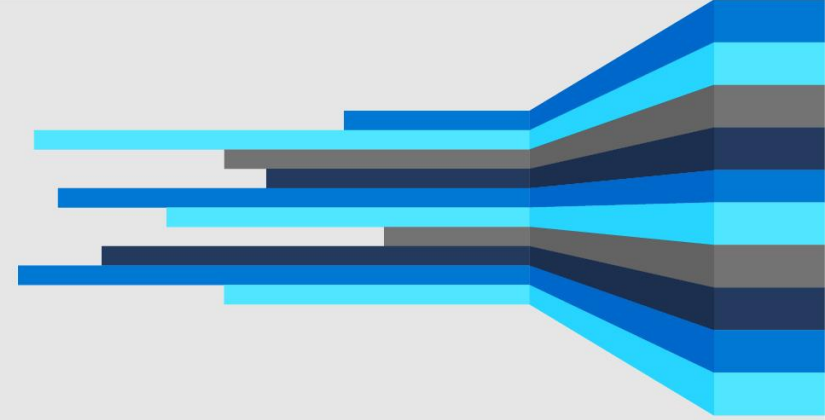


Thank you!

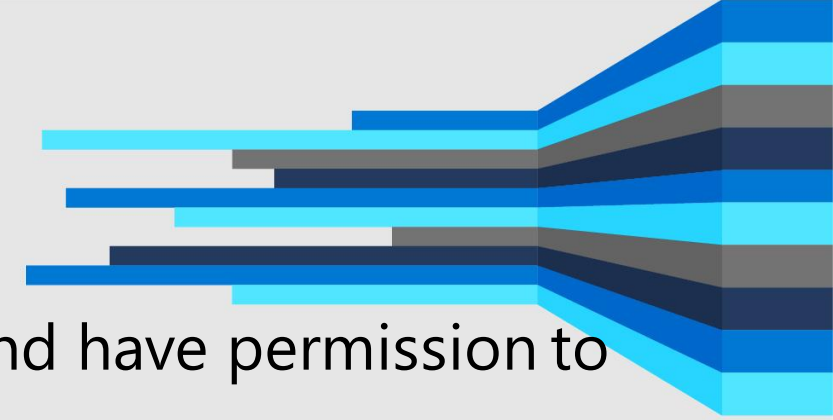
APPENDIX: Desktop flows Tips, Tricks and Troubleshooting

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

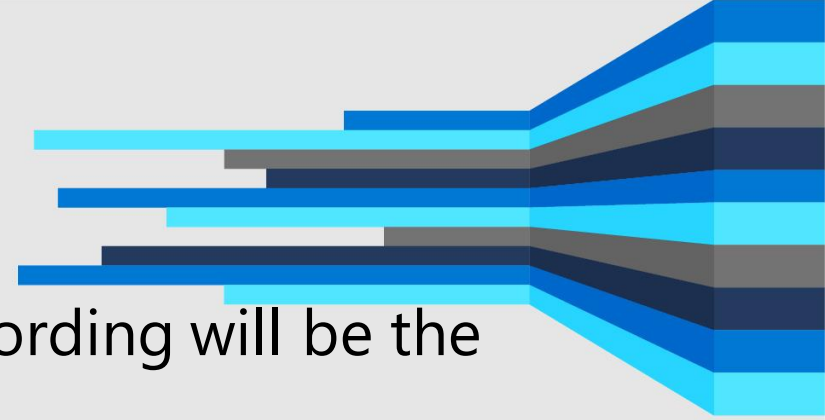


Installing



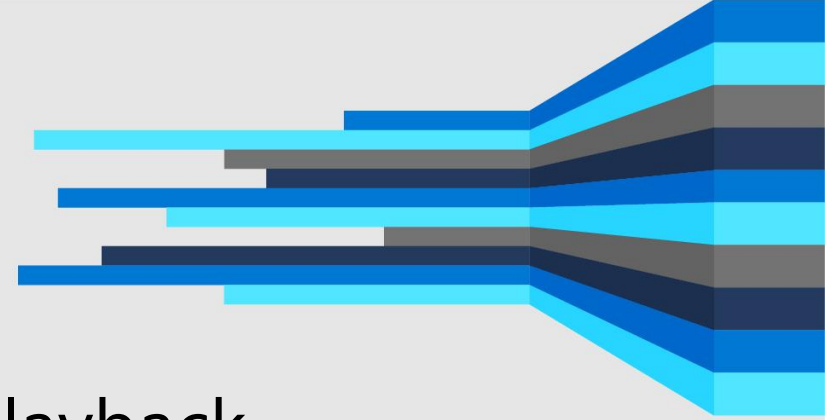
- ✓ Have a computer of Win10 or Win server 2016/2019 and have permission to install apps on it.
- ✓ For browsers, use Edge (chromium) or Chrome.
- ✓ Need to restart browser after installing.
- ✓ Make sure Power Automate for desktop app is running (not the dark color icon in the task bar, but a white color icon).
- ✓ Double check if the web extensions are enabled after installing Power Automate for desktop:
 - For desktop flow, you need one web extension “**Microsoft Power Automate for 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



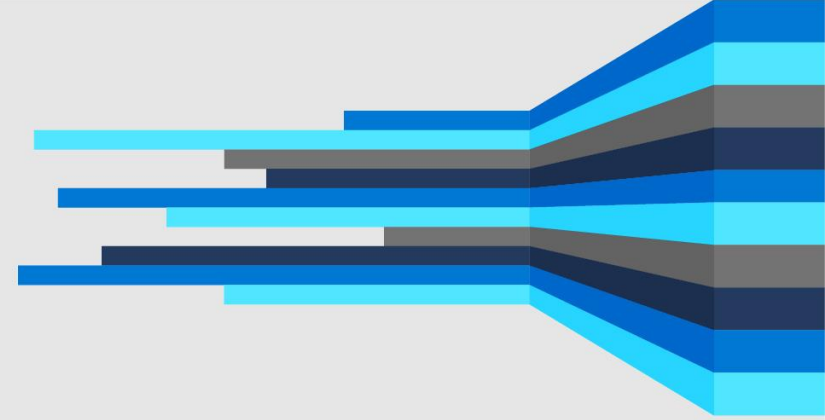
- ✓ Ensure that the keyboard layouts you use during recording will be the same as for playback.
- ✓ Use shortcuts instead of clicking. For instance, copy paste with ctrl + c & ctrl + v instead of right click copy.
- ✓ Use “enter static text” if you are working with strings for better readability.
- ✓ 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



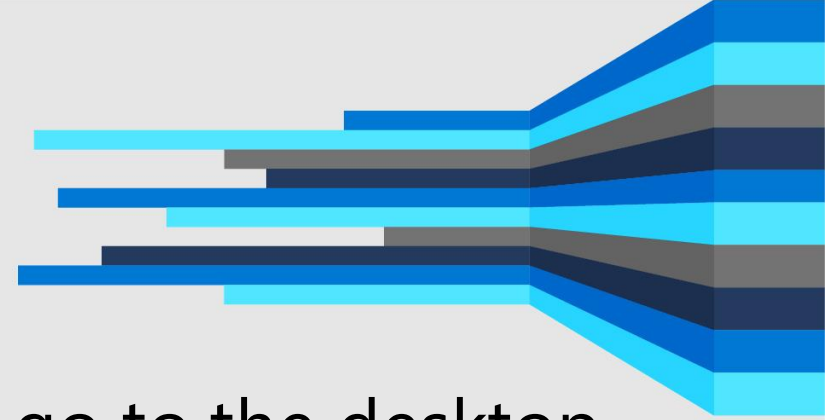
- ✓ Do not use the keyboard and mouse during playback.
- ✓ Try to adjust your app to have the same initial state as during recording time.
- ✓ Use the same keyboard and locale setting as during recording time.
- ✓ If you are using coordinate offset fallback:
 - Current coordinate-based fallback is conservative 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



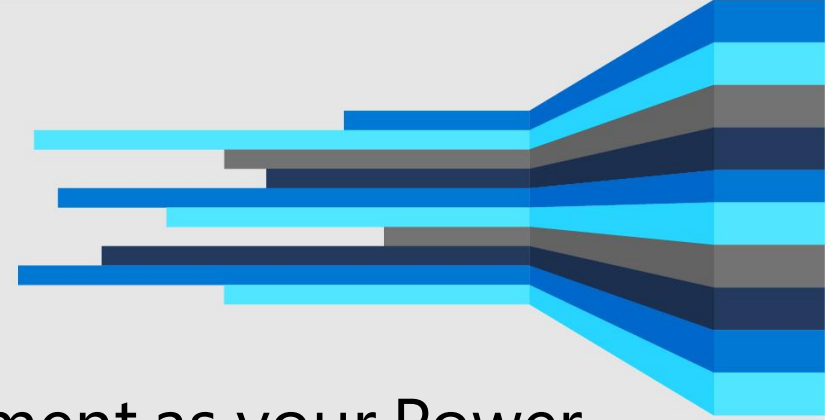
- ✓ Adjust the wait time in the designer. By default, the script waits as long as the recording process took.
- ✓ By default, desktop flows launches applications. You can edit the script to change if you want to launch or attach the app.
- ✓ Enable coordinate-based playback if you know your app is safe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

Monitor the run



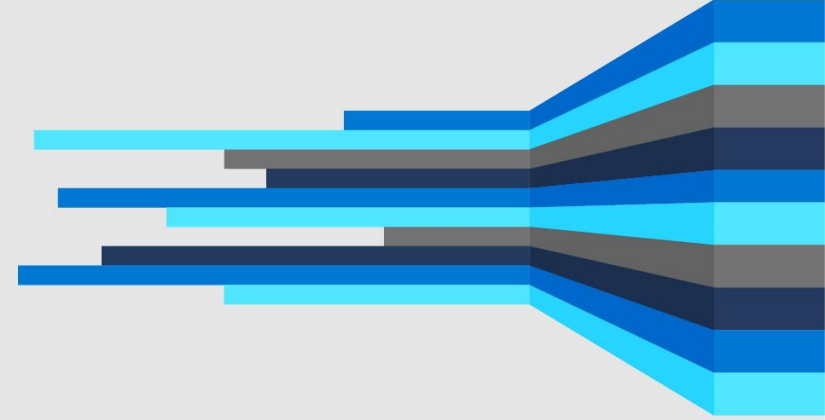
- ✓ If the flow run failed at the desktop flow step, go to the desktop flow page to look up run history from there to see detail error messages.

Machine registration key points



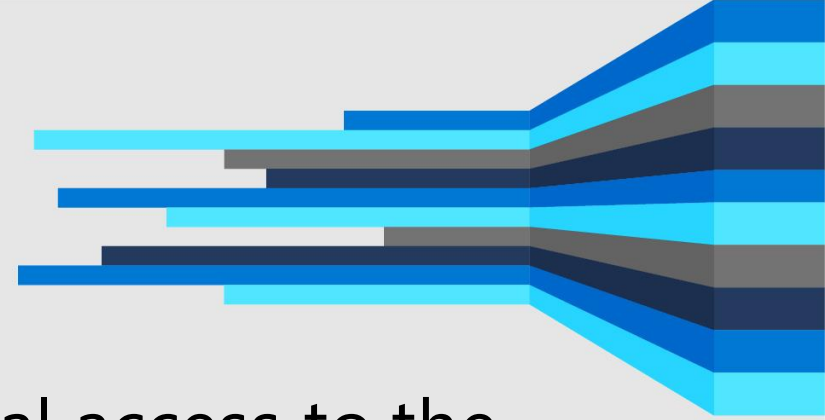
- ✓ Machine must be registered in the same environment as your Power Automate desktop flow. This is necessary to ensure data moving between the service and machine honors data sovereignty rules.
- ✓ Use the same account that you are logging into portal to setup the machine.
- ✓ If you need to switch 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

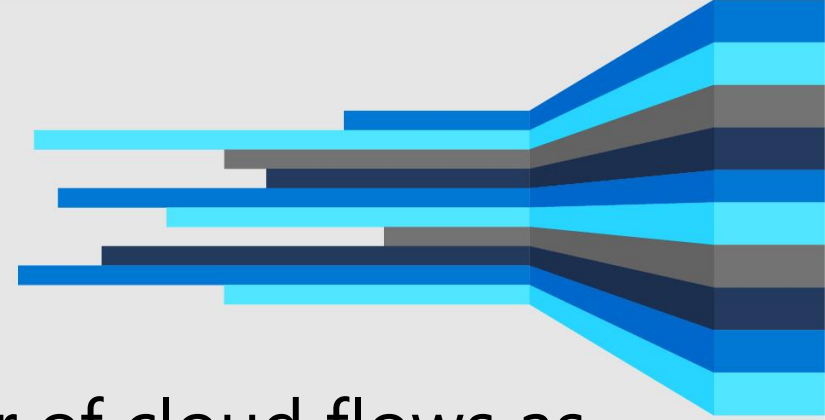


- ✓ Use a user account and password that has local access to the registered machine.
- ✓ Desktop flows supports local machine accounts, Active Directory accounts for AD domain-joined machines and Azure AD accounts for Azure AD-managed machines. Microsoft Account (MSA) is not supported.
- ✓ Make sure 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.

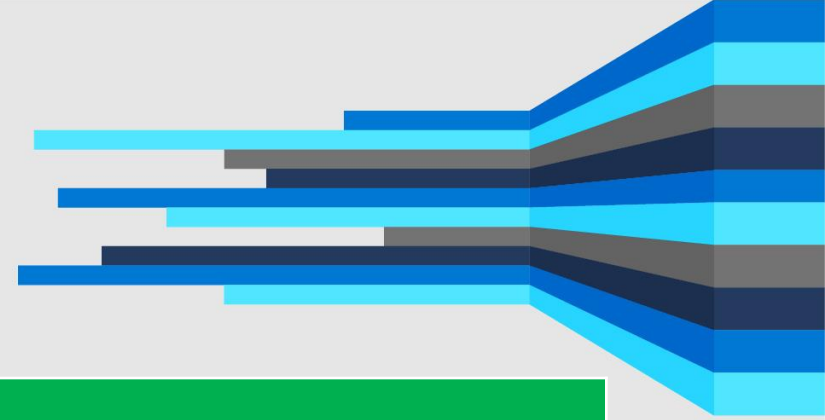
Use the full power of cloud + desktop flows



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 for 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 or 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• Hundreds of 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