



# Power Platform Series: Power Automate

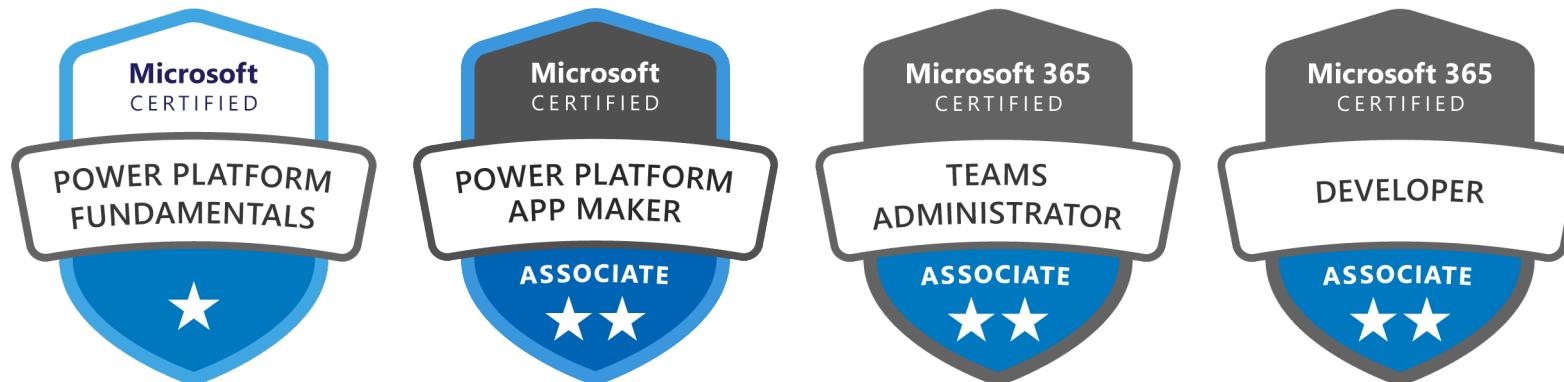


# About the Trainer

## Christina Wheeler

Senior Technical Specialist, Microsoft  
Business Applications (Financial Services Industry)

Former Microsoft MVP



[www.linkedin.com/in/christinawheeler](https://www.linkedin.com/in/christinawheeler)



@cwheeler76

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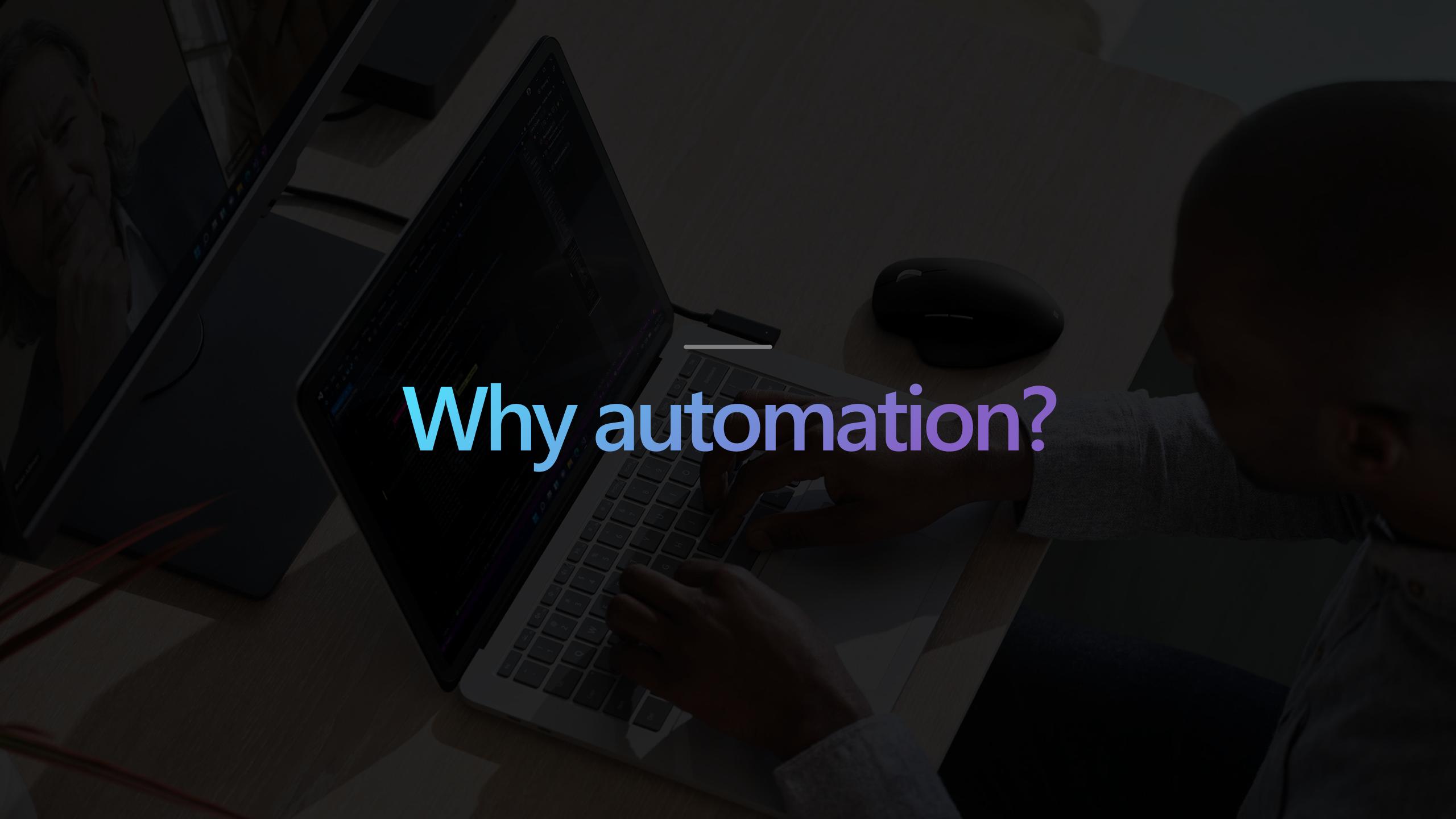
# Agenda

- 
- Power Automate Key Concepts
  - Connectors
  - Triggers & Actions
  - Creating Flows in Power Automate
  - Run History
  - Naming Best Practices



# Power Automate Key Concepts



A dark, moody photograph of a person working at a desk. Two laptops are open; the one in the foreground displays a complex dashboard with multiple graphs and data points. The person's hands are visible on the keyboard of the laptop. A black computer mouse sits to the right. The background is blurred, showing more of the workspace.

# Why automation?

# We're human

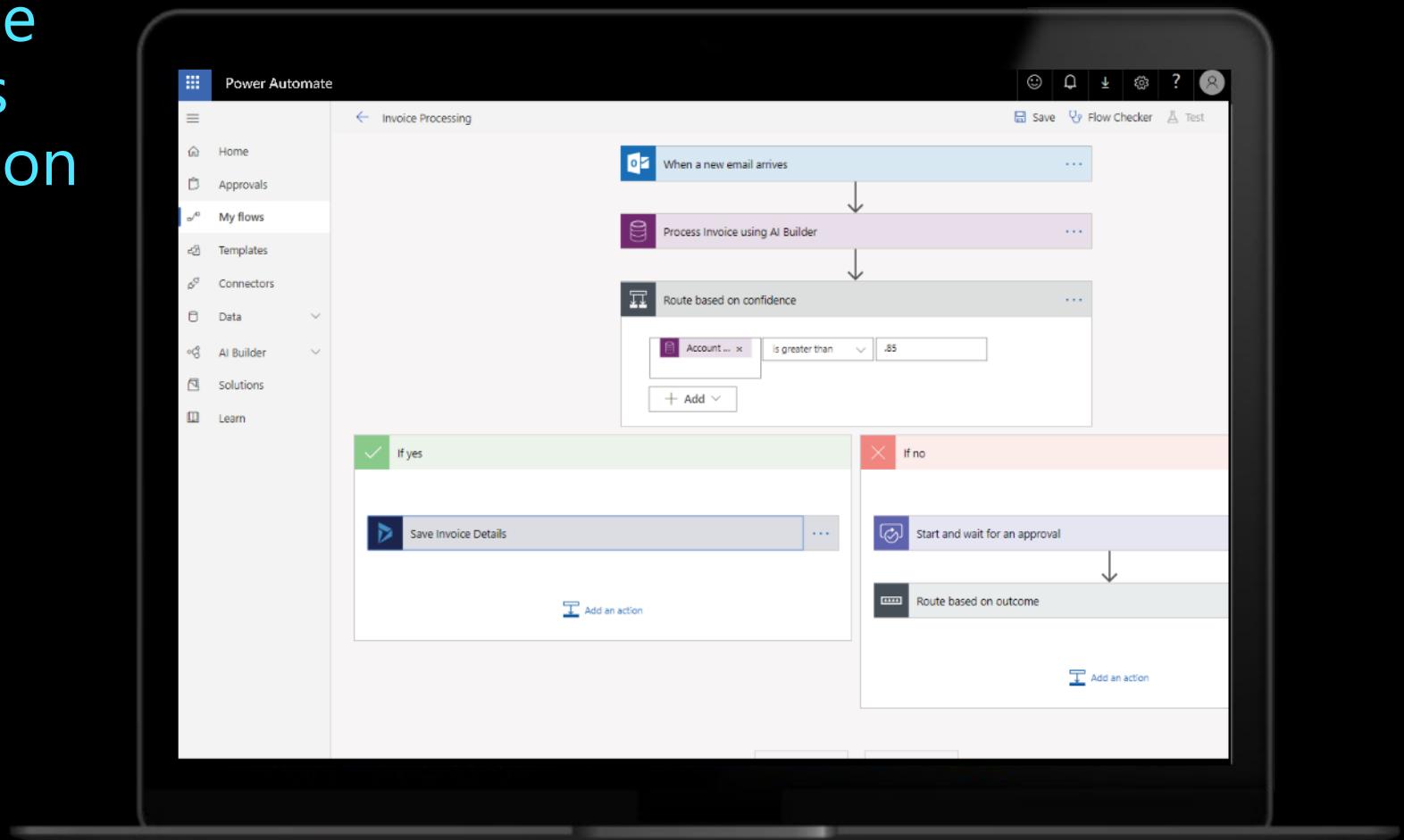
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Humans excel at **creative** and **strategic thinking** but spend much of our time performing tedious manual tasks



# Microsoft Power Automate

Online workflow service  
that automates actions  
across the most common  
apps and services



# Flows in Power Automate

Choose from three types of automated workflows

## Cloud flows

### Industry Term

Digital process automation (DPA)

### Product Term

Cloud flows

### Apps

Power Automate for web  
Power Automate for mobile  
Power Automate for Teams

## Desktop flows

### Industry Term

Robotic process automation (RPA)

### Product Term

Desktop flows

### Apps

Power Automate for desktop

## Business process flows

### Industry Term

Business process management (BPM)

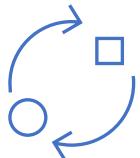
### Product Term

Business process flows

### Apps

Power Automate for web

# Use cases



## Natively Integrated with Microsoft 365

- Automate approvals to focus on more valuable tasks.
- Automating SharePoint lists
- Automating excel sheets
- Sending alerts for business-critical emails
- Automating messages on Teams channels

## Natively Integrated with Dynamics 365

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

## Automation powered with AI Builder

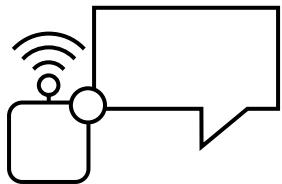
- No-code AI
- Built in models:
  - Form Processing
  - Object Detection
  - Text Classification
  - Business Card Reader

## Bring legacy apps into the modern world with RPA

- Enable automation for legacy apps

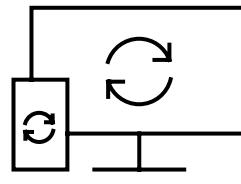
# Built for non-developers

Microsoft Power Automate helps **non-developers** work smarter by automating workflows across apps and services



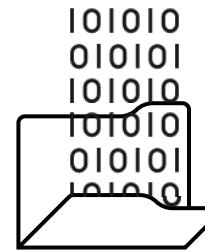
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Get notifications



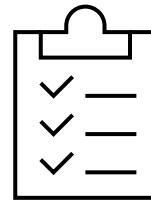
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Copy files



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Collect data



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Automate approvals

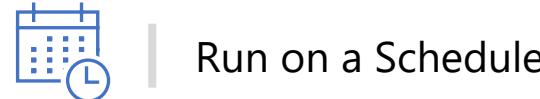
# What makes up a Flow?

## Trigger

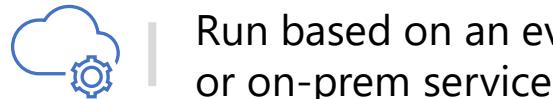
Three types of triggers:



Manual Action



Run on a Schedule

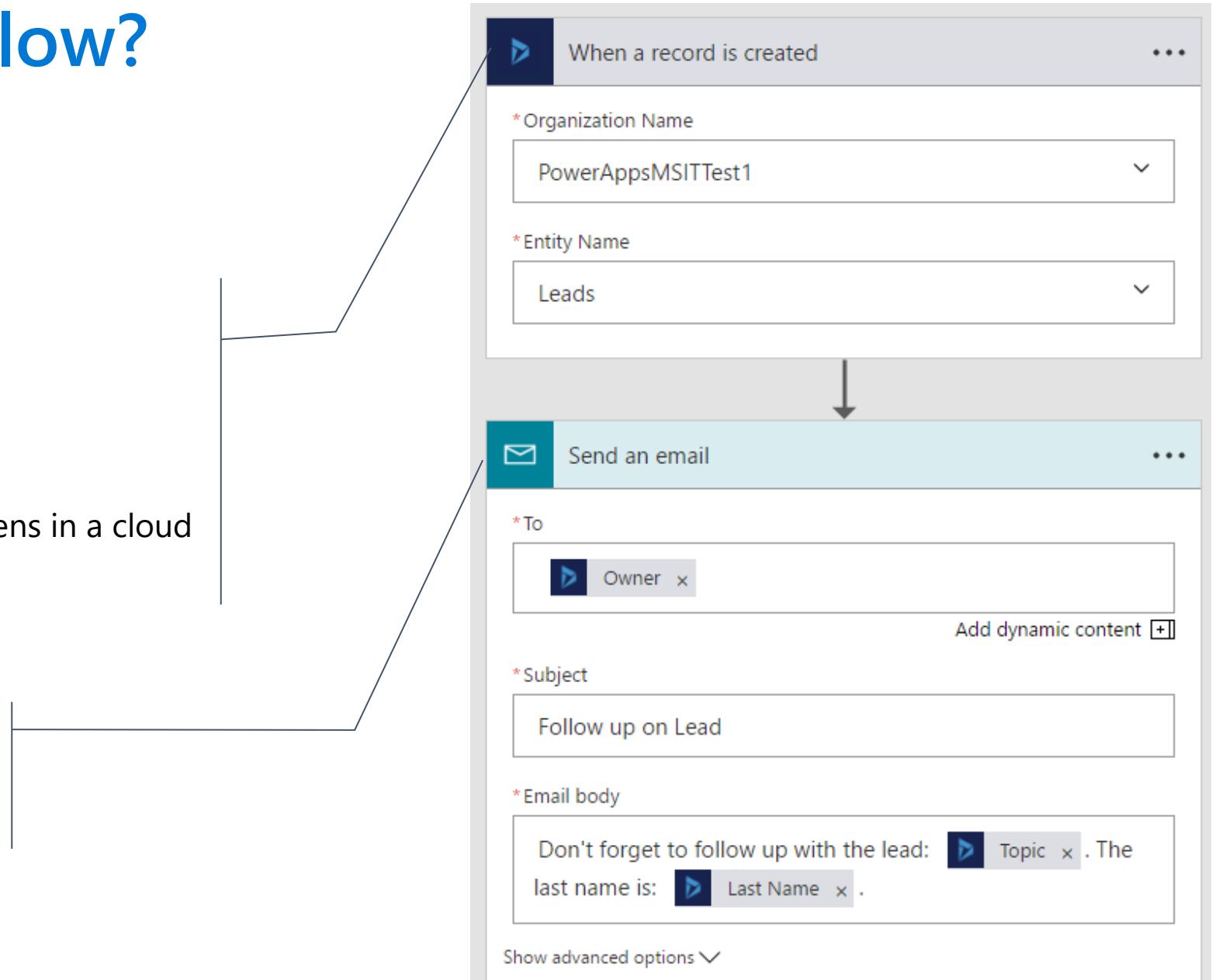


Run based on an event that happens in a cloud or on-prem service

## Actions

What the flow does:

- Uses data from the trigger





# Connectors

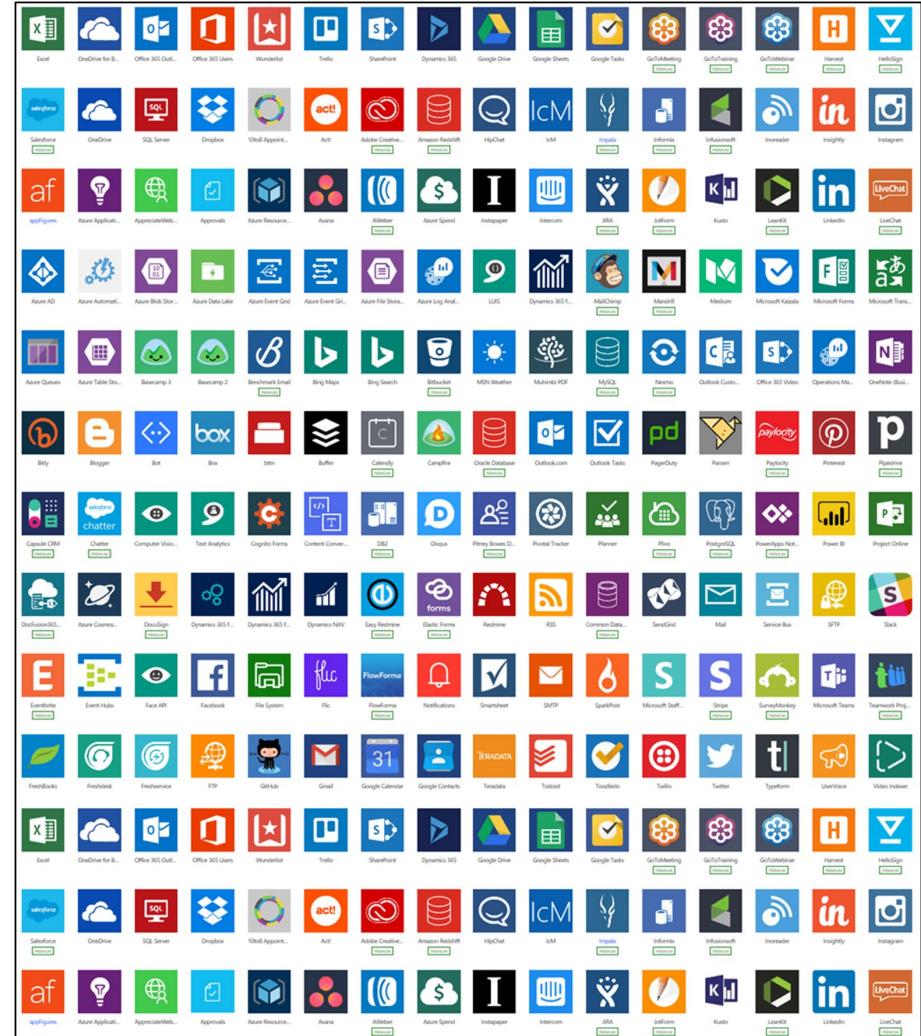


# Connectors

**Connectors:** Wrapper around an API

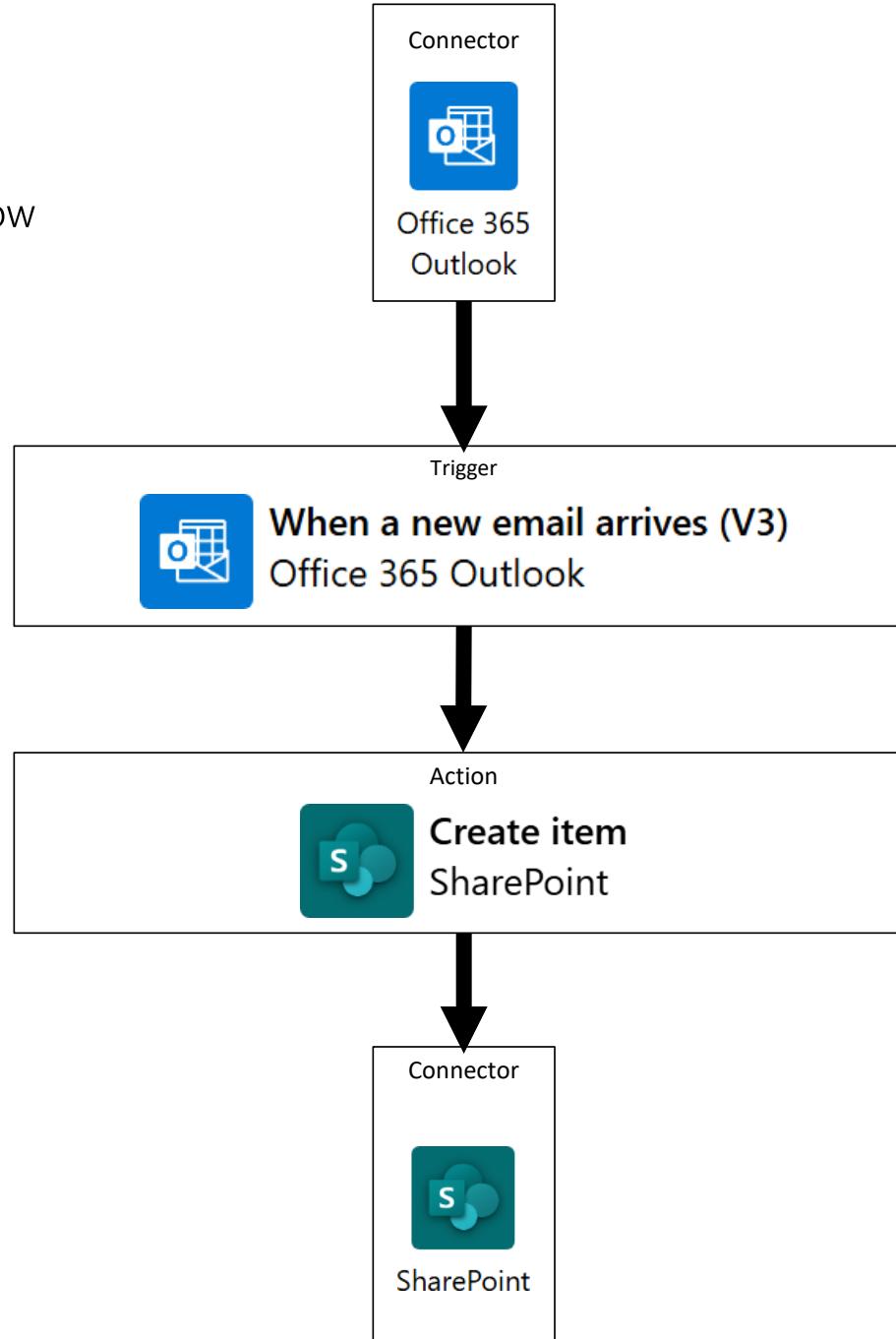
Power Automate has out-of-the-box connectors for many popular services and on-premises data sources

Can also set up a **custom connector**



# Connectors

Connectors can be used to connect in and out from the flow





# Creating Flows in Power Automate



# Power Automate Maker Portal

<https://make.powerautomate.com>

The screenshot shows the Power Automate Maker Portal interface. At the top, there's a blue header bar with the 'Power Automate' logo, a search bar, and a user profile icon. Below the header, the left sidebar contains navigation links: Home, Approvals, My flows, Create, Templates, Connectors, Data, Monitor, AI Builder, Process advisor, Solutions, and Learn. The main content area features a greeting 'Hi Christina Wheeler' and a central heading 'What would you like to automate?'. Below this, there are three tabs: 'Emails' (selected), 'Files and documents', and 'Notifications and reminders'. Under the 'Emails' tab, four automation templates are listed:

- Save Outlook.com email attachments to your OneDrive (By Microsoft Power Automate Community, Automated, 198034)
- Save Gmail attachments to your Google Drive (By Microsoft, Automated, 52854)
- Notify me on Teams when I receive an email with negative sentiment (By Microsoft, Automated, 11025)
- Analyze them to (By Microsoft, Automated, 11025)

At the bottom, there's a section titled 'Learning for every level' with five course cards:

- Automate a business process using Power... (Beginner, 4 hr 50 min)
- Automate processes with Robotic Process... (Intermediate, 2 hr 5 min)
- Improve business performance with AI... (Beginner, 6 hr 56 min)
- Improve business performance with AI... (Beginner, 26 min)
- Ask a chatbot (with a blue button)

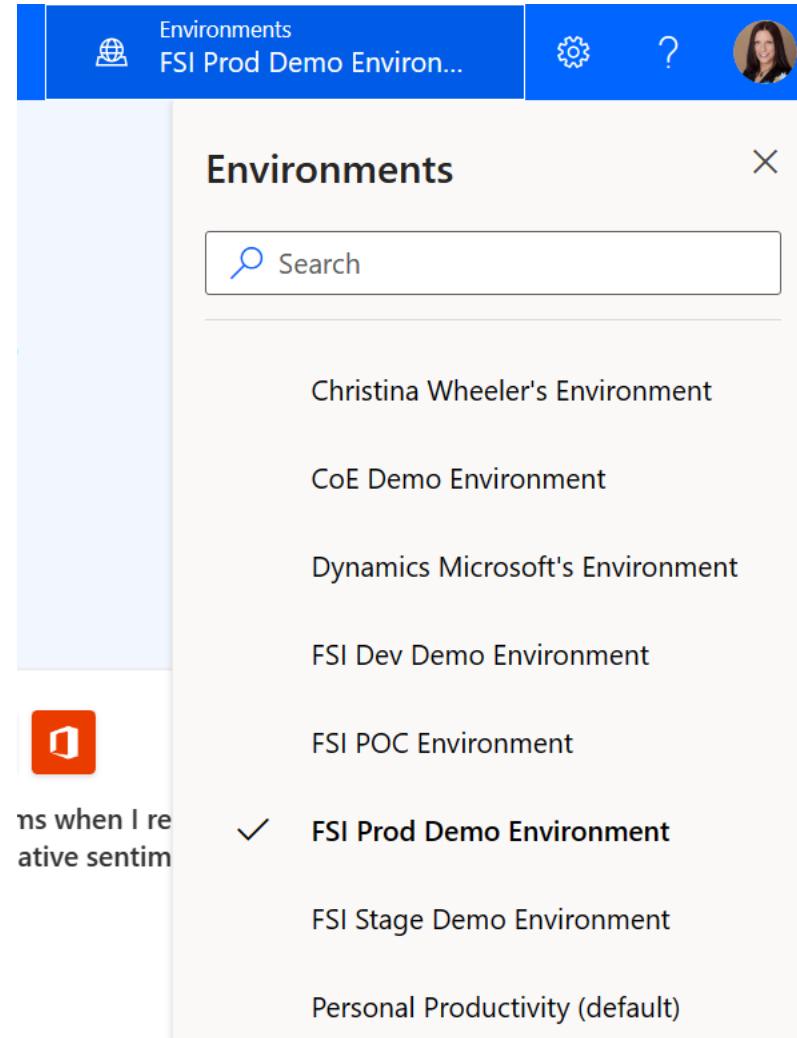
# Environments

**Container for:**

- Power Apps
- Power Automate flows
- Copilot Studio bots
- Power Pages

**Is NOT a container for:**

- Power BI



# Create a flow from a template

Search using keywords for relevant templates

**Example template:**  
Create a flow to  
save email  
attachments to  
OneDrive for  
Business

The screenshot shows the Microsoft Power Automate web interface. On the left, there's a navigation sidebar with options like Home, Action items, My flows, Create, Templates (which is currently selected), Connectors, Data, AI Builder, Solutions, and Learn. A search bar at the top says "Search templates ...". Below it, a filter bar allows sorting by All flows, Featured, Shared with me, Approval, Button, Data collection, Visio, Email, Events and calendar, Mobile, Notifications, Productivity, and more. The main area displays a grid of 12 template cards, each with a title, a brief description, the creator, and metrics like views and likes. The templates shown include:

- Save Office 365 email attachments to OneDrive for Business (By Microsoft, Automated, 302291 views)
- Send myself a reminder in 10 minutes (By Microsoft, Instant, 277066 views)
- Get today's weather forecast for my current location (By Microsoft, Instant, 199062 views)
- PowerApps button (By Microsoft, Instant, 186205 views)
- Start approval when a new item is added (By Microsoft, Automated, 164880 views)
- Get a push notification when you receive an email from your boss (By Microsoft, Automated, 146572 views)
- Send a customized email when a new SharePoint list item is added (By Microsoft, Automated, 115124 views)
- Save Outlook.com email attachments to your OneDrive (By Microsoft Flow Community, Automated, 113627 views)
- Send a customized email when a new file is added (By Microsoft, Automated, 98161 views)
- Get a push notification with updates from the Flow blog (By Microsoft, Automated, 94837 views)
- Record form responses in SharePoint (By Microsoft, Automated, 87819 views)
- Send approval and follow up via email (By Microsoft, Instant, 64138 views)

# Build your own flows in an easy-to-use Visual Designer

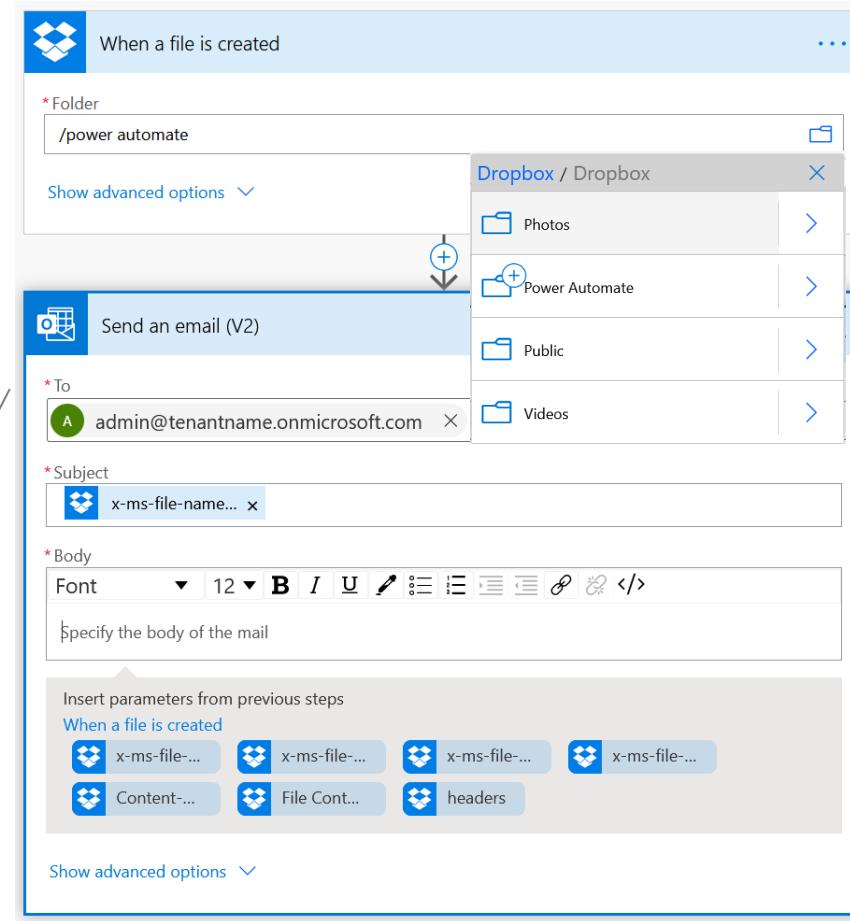
Sending an Exchange email when a new file is added in Dropbox

Authenticate to your Dropbox account.

Select folder to monitor

Authenticate to your O365 account.

Build email *Subject* and *Body*

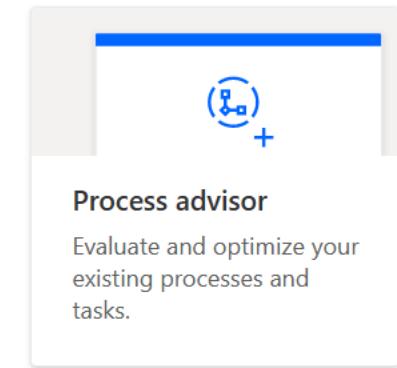
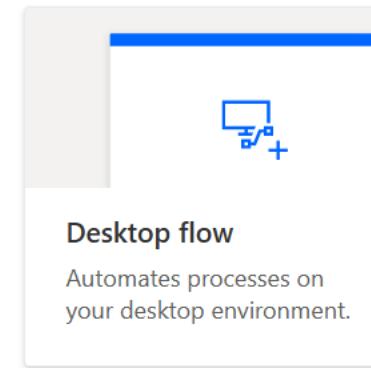
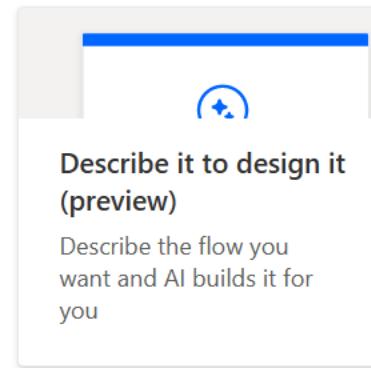
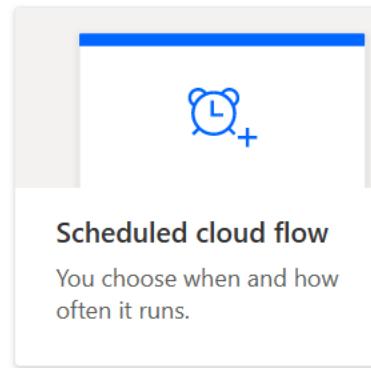
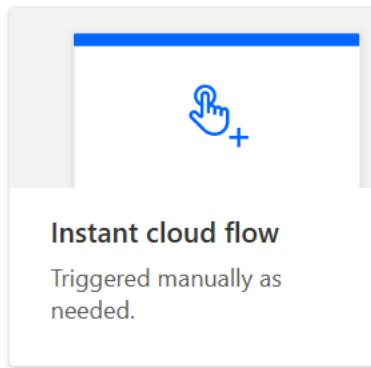
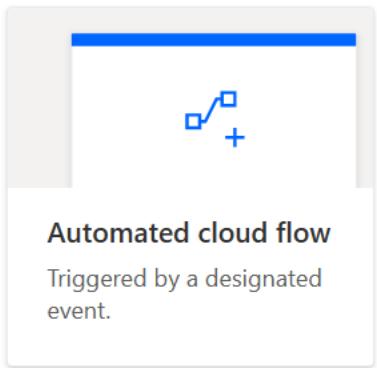


Choose to include properties from previous step (Dropbox file) to improve relevance

Specify *Send To* email address and additional properties (optional): *From*, *CC*, *BCC* and *Importance*

# Start from a blank

## Start from blank (i)



# Automated flow



**Automated cloud flow**  
Triggered by a designated event.

## Build an automated cloud flow



Free yourself from repetitive work just by connecting the apps you already use—automate alerts, reports, and other tasks.

Examples:

- Automatically collect and store data in business solutions
- Generate reports via custom queries on your SQL database

Flow name

Choose your flow's trigger \* [\(i\)](#)

Search or select a trigger from the list below to create a flow. (Required)

 Microsoft Forms	When a new response is submitted	<a href="#">(i)</a>
 SharePoint	When an item is created	<a href="#">(i)</a>
 SharePoint	When an item is created or modified	<a href="#">(i)</a>
 SharePoint	When a file is created in a folder (de...)	<a href="#">(i)</a>
 OneDrive	When a file is created	<a href="#">(i)</a>

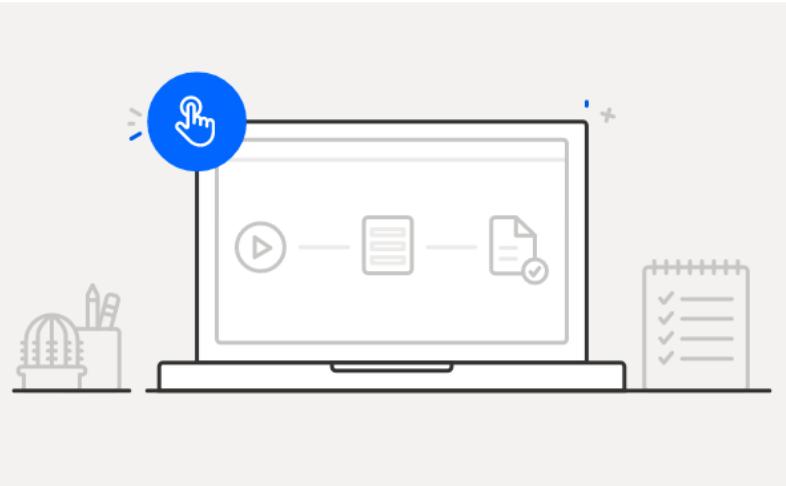
[Skip](#) [Create](#) [Cancel](#)

# Instant cloud flow



**Instant cloud flow**  
Triggered manually as needed.

## Build an instant cloud flow



Triggered manually from any device, easy-to-share instant flows automate tasks so you don't have to repeat yourself.

Examples:

- Get an automatic mobile alert whenever a VIP client emails you
- Save all your email attachments to a folder automatically

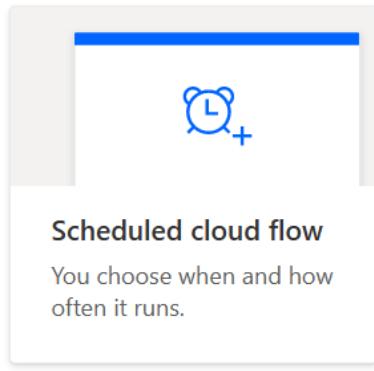
Flow name  
Add a name or we'll generate one

Choose how to trigger this flow \*

-  Manually trigger a flow  
Flow button for mobile (i)
-  PowerApps  
PowerApps (i)
-  When Power Virtual Agents calls a fl...  
Power Virtual Agents (i)
-  When a flow step is run from a busin...  
Microsoft Dataverse (i)
-  For a selected message (V2)  
Microsoft Teams (i)
-  From the compose box (V2)  
Microsoft Teams (i)
-  When someone responds to an adap...  
Microsoft Teams (i)

**Skip** **Create** **Cancel**

# Scheduled cloud flow



## Build a scheduled cloud flow

Stay on top of what's important without the effort—you choose when and how often the flow runs.

Examples:

- Automate team reminders to submit expense reports
- Auto-backup data to designated storage on a regular basis

Flow name

Add a name or we'll generate one

Run this flow \*

Starting 4/25/23 \* at 10:00 AM

Repeat every 1 Week

On these days S M T W T F S

This flow will run:

On Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday every week

Skip Create Cancel

# Describe it to design it (preview)



## Describe it to design it (preview)

Describe the flow you want and AI builds it for you

### Start building a cloud flow with your own words

Just describe what you want to automate and built-in AI assistance will help you create your flow.  
[How it works](#)

This preview feature works with many common actions in the following Microsoft 365 apps, with support for more actions and connections coming soon:

-  Approvals
-  Dataverse
-  Excel
-  Forms
-  Microsoft Teams
-  Office 365 Outlook
-  OneDrive for Business
-  Planner
-  SharePoint

Step 1 of 3

## Describe your flow in everyday words

When a new person is added to a Teams channel, let me know with a Teams message

## Suggested flow

After you review this AI generated flow suggestion, select **Next** to configure it

### Trigger

The flow starts when this happens



When a new team member is added  
Microsoft Teams



### Actions

This is what the flow will do



Get my profile  
Office 365 Users



Post message in a chat or channel  
Microsoft Teams

Next

Cancel

## Describe it to design it (preview)

Step 2 of 3

## Make sure everything's ready

To run the flow, make sure all your data sources are connected. [How it works](#)

### Review your connected apps and services

A green check means that connection's ready to go.



Microsoft Teams

cwheeler@D365DEMOP...



...

Office 365 Users  
Permissions

cwheeler@D365DEMOP...



...

#### Trigger

The flow starts when this happens

When a new team member is added  
Microsoft Teams

#### Actions

This is what the flow will do

Get my profile  
Office 365 UsersPost message in a chat or channel  
Microsoft Teams

Back

Next

Cancel

Send feedback

## Describe it to design it (preview)

Step 3 of 3

## Finalize the flow (optional)

Configure the required settings, then select "Create flow".

### Choose your settings

Configure these settings to set up the flow:

When a new team member is added  
Microsoft Teams

Team

Power Platform Community

Post message in a chat or channel  
Microsoft Teams

Post as

Flow bot

Team

Select an item

Channel

Select an item

Message

Font ▾ 14 ▾ **B** *I* U

Add message

Back

Create flow

Cancel



Home

Approvals

My flows

Create

Templates

Connectors

Data

Monitor

AI Builder

Process advisor

Solutions

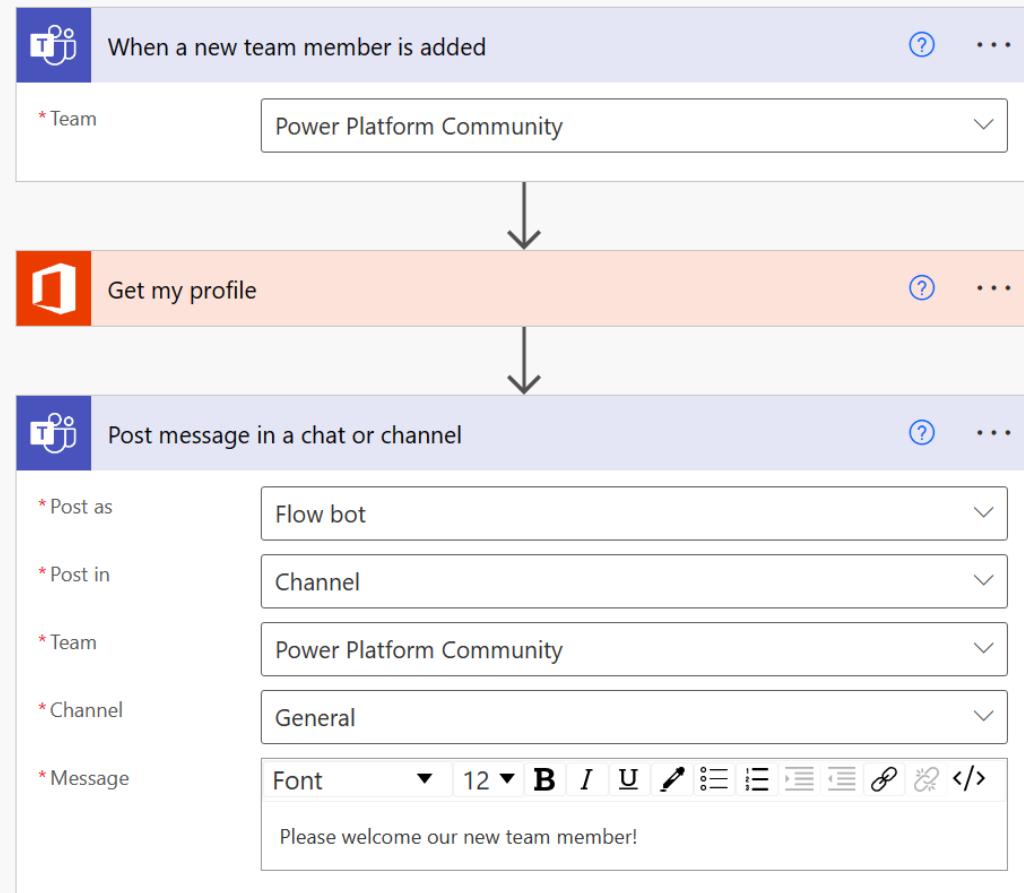
Learn

When a new person is added to a Teams channel, let me know with a Teams message

Undo Redo Comments Save Flow checker Test

Your flow is created! Review the flow and save it.

Send feedback



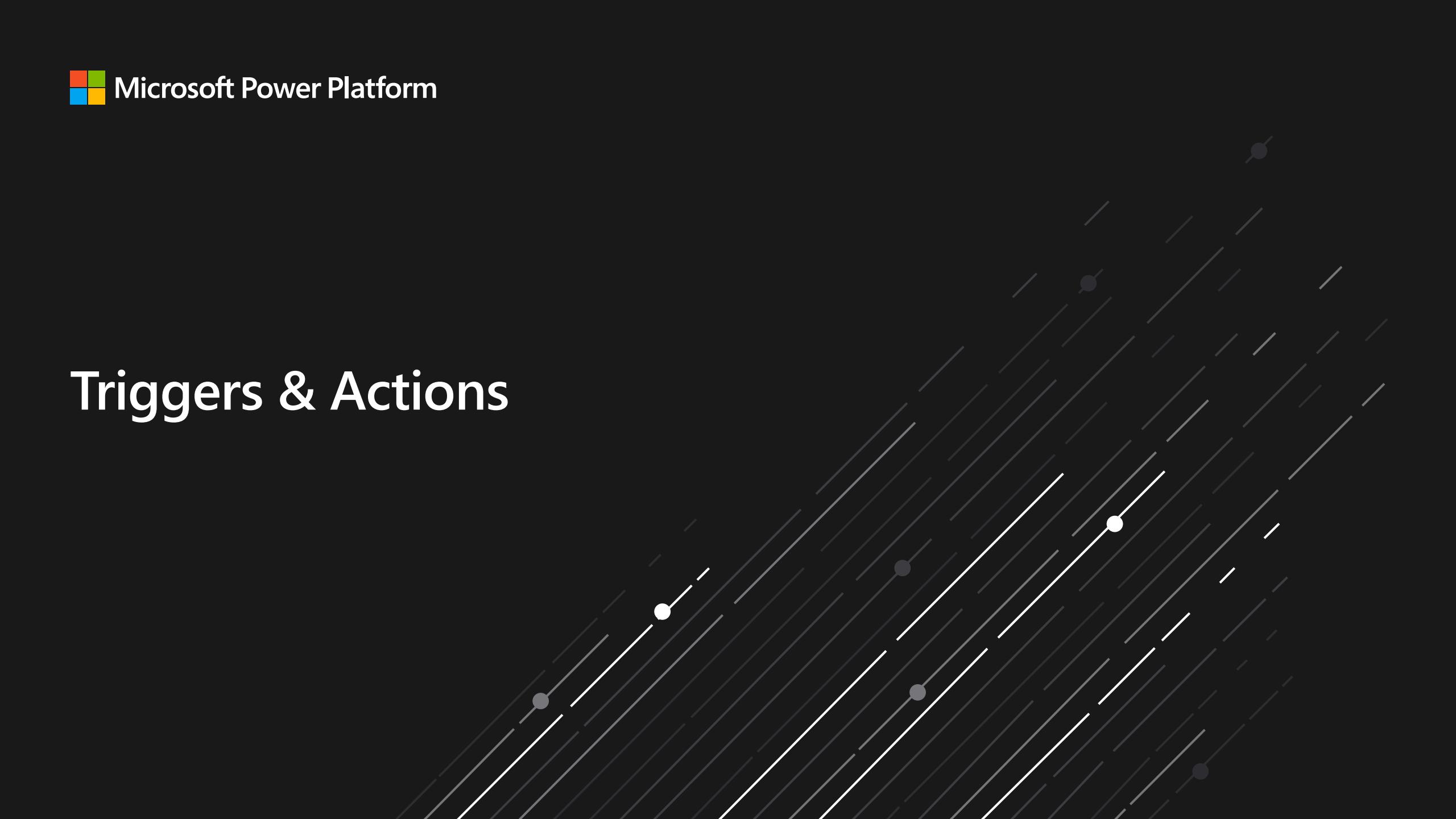
+ New step

Save



Ask a chatbot

# Triggers & Actions

A dark gray background featuring a subtle, abstract pattern of thin, light gray diagonal lines of varying lengths. Interspersed among these lines are small, solid gray dots of different sizes, some with white centers, creating a sense of motion or data flow.

# Important concepts in Microsoft Power Automate

Keep these concepts in mind when building flows:

Every flow has two main parts:

- a trigger
- one or more actions & Condition

Think of the trigger as the starting action for the flow

Actions are what you want to happen when a trigger is invoked.

Some examples of types of actions you can have in a flow include:

Loops  
Switch  
Do Until  
Apply to each  
Expressions

# Triggers

Search connectors and triggers

All   Built-in   Standard   Premium   Custom   My clipboard

Flow button for mobile	PowerApps	Power Virtual Agents	Microsoft Forms	SharePoint	OneDrive for Business	Planner
Microsoft Dataaverse	RSS	Gmail	Microsoft Teams	Google Calendar	Azure DevOps	Office 365 Outlook

All   Built-in   **Standard**   Premium   Custom   My clipboard

Microsoft Forms	SharePoint	OneDrive for Business	Planner	RSS	Gmail	Microsoft Teams
Google Calendar	Office 365 Outlook	OneDrive	OneNote (Business)	Outlook.com	Power BI	10to8 Appointme...

All   Built-in   Standard   Premium   Custom   My clipboard

Microsoft Dataaverse	Azure DevOps	SQL Server	Adobe Creative...	Africa's Talking...	Africa's Talking SMS	Amazon S3
Amazon SQS	ArcGIS	Assently E-Sign	Azure Blob Storage	Azure Event Grid	Azure Queues	COSMO Bot

# Actions

Choose an operation

sharepoint

All   Built-in   Standard   Premium   Custom   My clipboard

SharePoint   Converter by Power2Apps   Plumsail SP   LatinShare SHP...   LatinShare SHP...   Muhibni PDF   DocumentsCorePack

Triggers   Actions   See more

Send an HTTP request to SharePoint  
SharePoint

Get items  
SharePoint

List folder  
SharePoint

Create sharing link for a file or folder  
SharePoint

Create item  
SharePoint

Copy file  
SharePoint

# Conditional Actions

Control

Search connectors and actions

Triggers    Actions

Condition Control

Apply to each Control

Do until Control

Scope Control

Switch Control

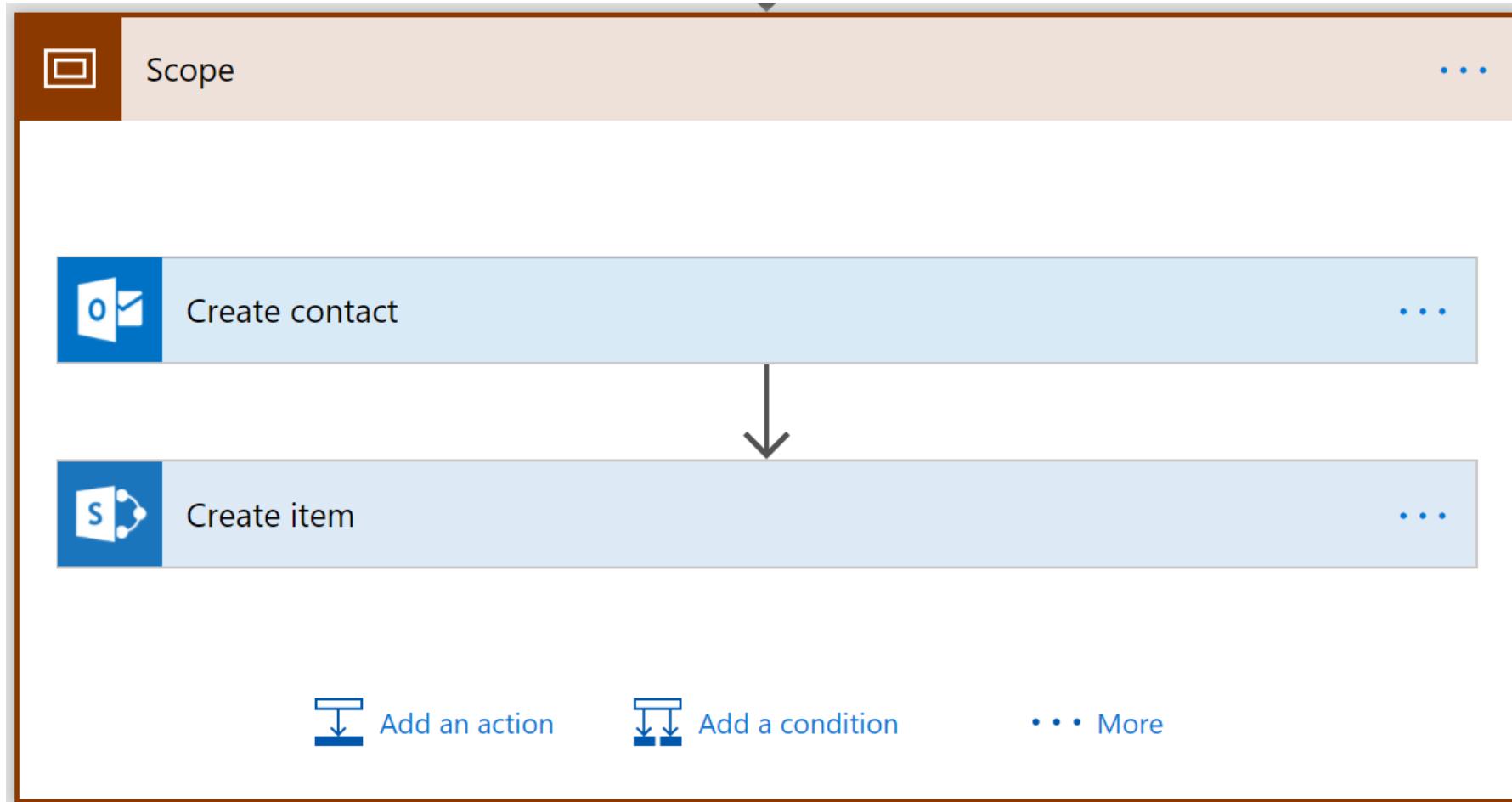
Terminate Control

Don't see what you need?

Help us decide which connectors and triggers to add next with [UserVoice](#)

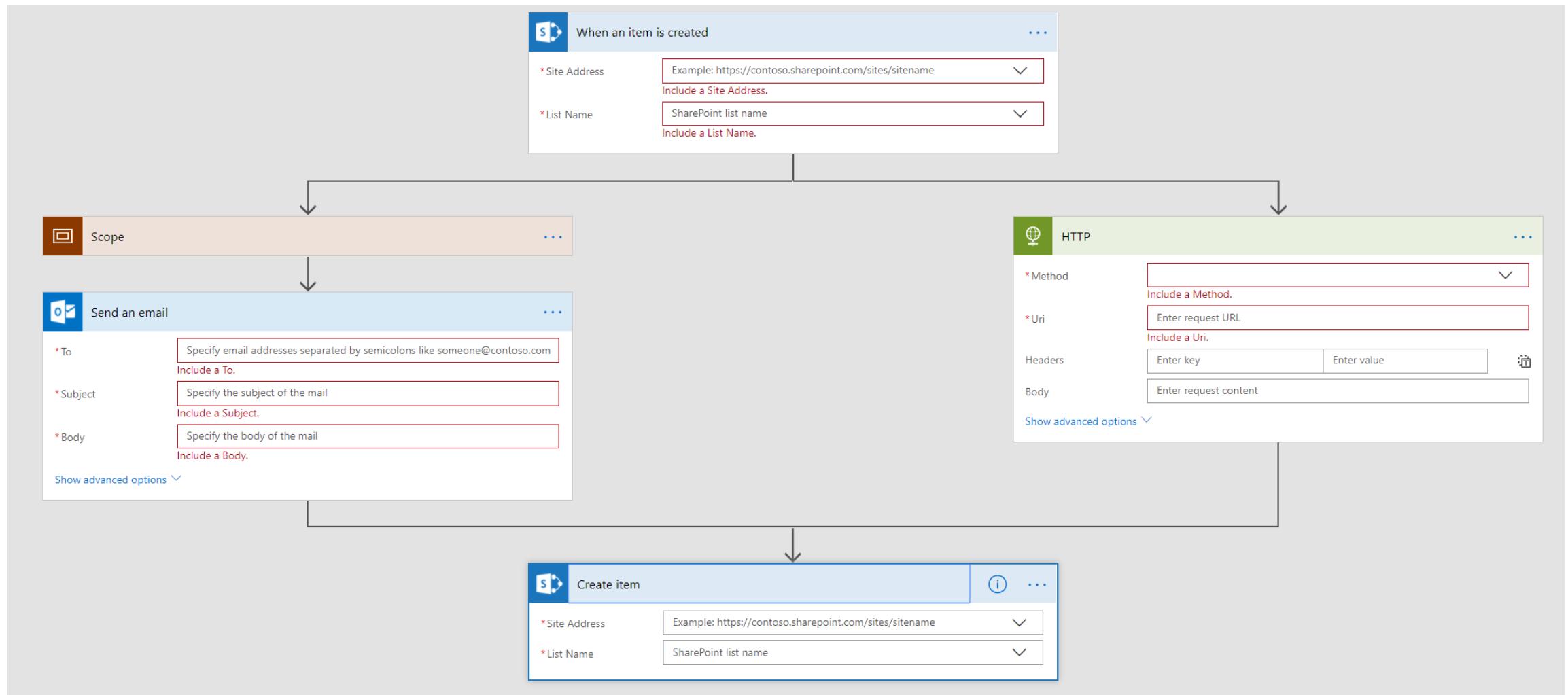
The screenshot shows the 'Control' actions library in Microsoft Power Automate. The title bar says 'Control'. Below it is a search bar with the placeholder 'Search connectors and actions'. There are two tabs: 'Triggers' and 'Actions', with 'Actions' being the active tab. The actions listed are: Condition Control, Apply to each Control, Do until Control, Scope Control, Switch Control, and Terminate Control. Each action has a small icon to its left and a circled 'i' icon to its right. At the bottom, there's a link 'Don't see what you need?' and a 'UserVoice' button.

# Use a Scope to group two or more actions together



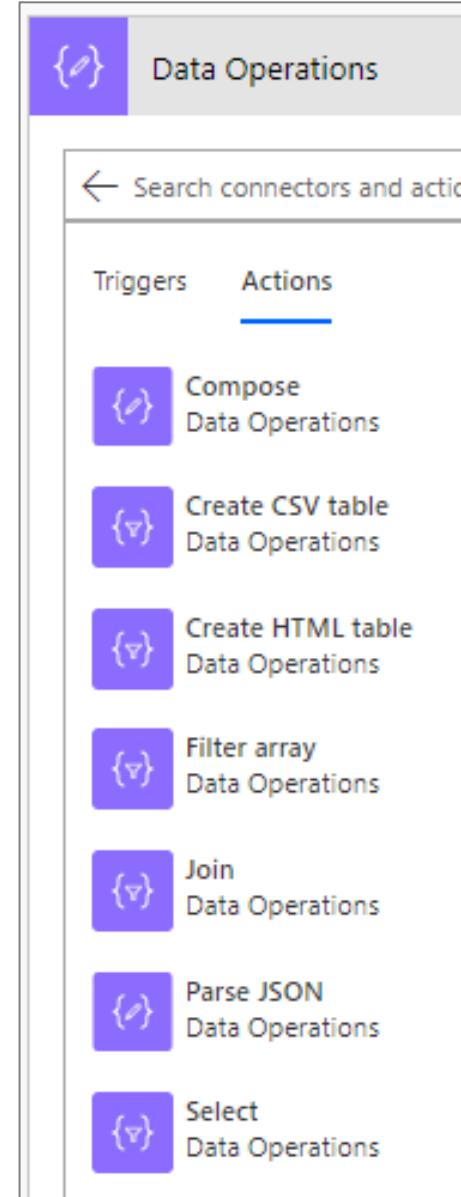
Also an easy way to move actions around

# Run in Parallel: two or more steps that run at the same time



# Actions with Data Operations

- **Compose**
  - Used to parse together text, HTML, JSON, etcs.
- **Create CSV Table**
  - Used to export data files with CSV format
- **Create HTML Table**
  - Used to create HTML tables for use in email messages
- **Filter Array**
  - Filter the contents of an existing array
- **Join**
  - Parse email address array into single string
- **Parse JSON**
  - Parse JSON returned from HTTP call into an object
- **Select**
  - Remap the columns in an array



# Handling Type Conversion

- Some conversion is automatic
  - Sometimes conversions are performed for you
  - In other cases, you must explicitly convert between types

<b>fx string(value)</b>	Convert the parameter to a string
<b>fx float(value)</b>	Convert the parameter argument to a floating-point number
<b>fx bool(value)</b>	Convert the parameter to a Boolean
<b>fx base64(value)</b>	Returns the base 64 representation of the input string
<b>fx base64ToBinary(value)</b>	Returns a binary representation of a base 64 encoded string
<b>fx base64ToString(value)</b>	Returns a string representation of a base 64 encoded string
<b>fx binary(value)</b>	Returns a binary representation of a value

<b>fx dataUriToBinary(value)</b>	Returns a binary representation of a data URI
<b>fx dataUriToString(value)</b>	Returns a string representation of a data URI
<b>fx dataUri(value)</b>	Returns a data URI of a value
<b>fx uriComponent(value)</b>	Returns a URI encoded representation of a value
<b>fx uriComponentToBinary(value)</b>	Returns a binary representation of a URI encoded string
<b>fx uriComponentToString(value)</b>	Returns a string representation of a URI encoded string

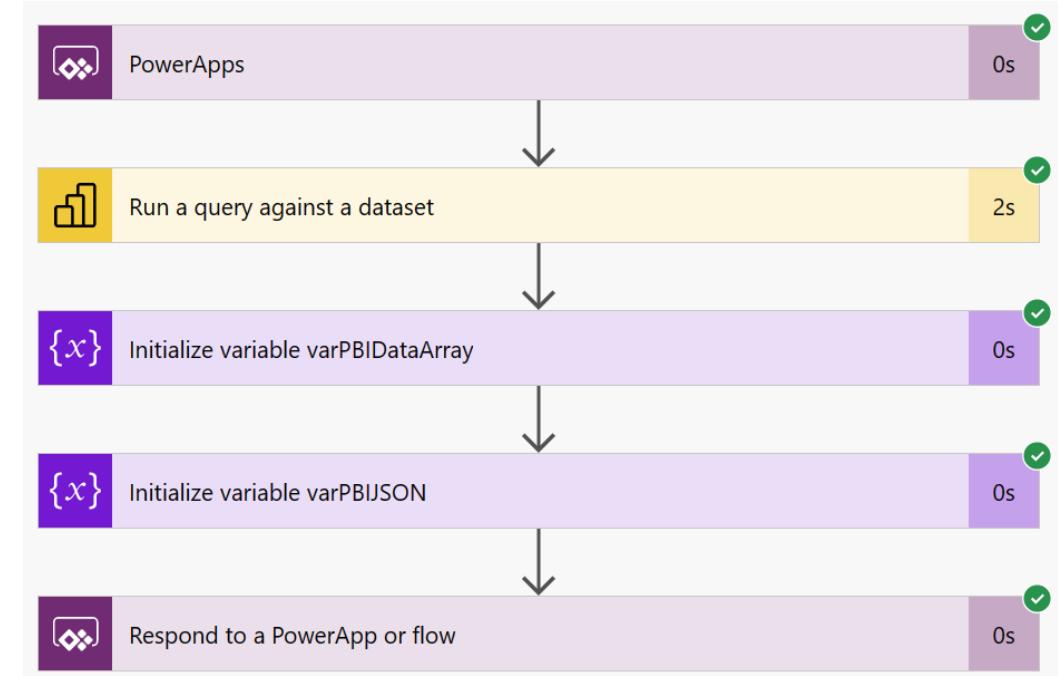
# Run History



# Track history of flow runs

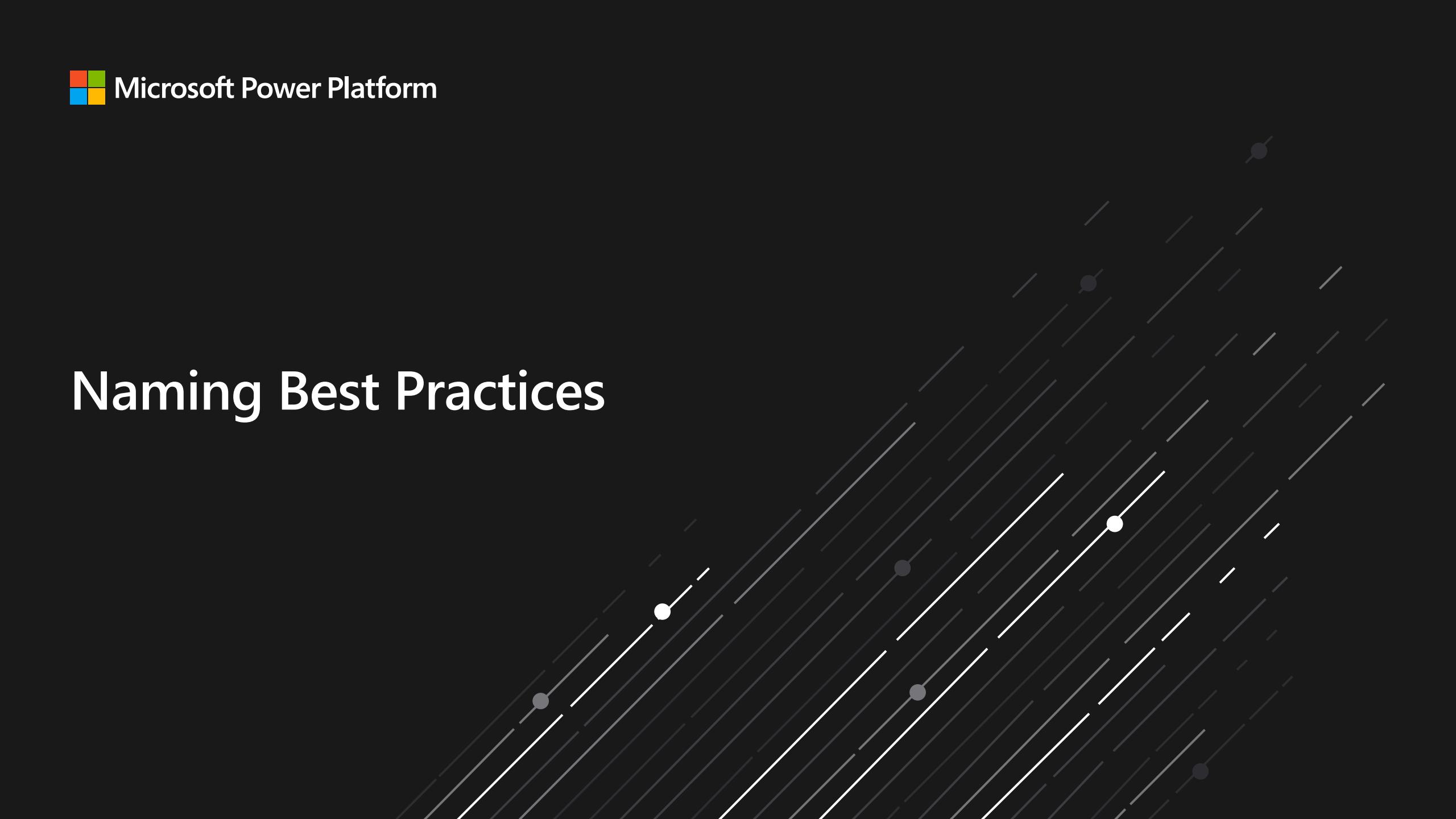
Run history stored for 28 days

See flow run success or failure with ability to dive into more details as needed



28-day run history ⓘ		
Start	Duration	Status
Feb 27, 06:54 PM (17 h ago)	00:00:02	Succeeded
Feb 27, 03:45 PM (20 h ago)	00:00:02	Succeeded
Feb 27, 03:14 PM (20 h ago)	00:00:01	Failed
Feb 27, 02:41 PM (21 h ago)	00:00:03	Succeeded

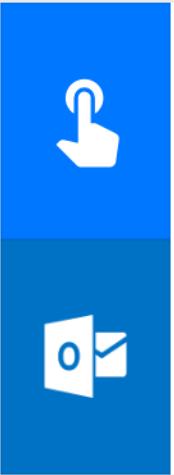
# Naming Best Practices

The background of the slide features a dark gray gradient. Overlaid on this are several thin, light gray diagonal lines of varying lengths and orientations. Interspersed among these lines are small, semi-transparent gray dots. One prominent white dot is located near the center-left, and another larger white dot is positioned towards the middle-right of the slide area.

# Good practice - Flow naming

**BAD NAME**

← Button -> Send an email



Button -> Send an email

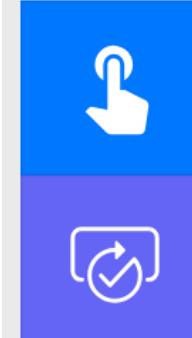
≡ Add a description

**Description missing**

⌘ See analytics

**GOOD NAME**

← Flow Training: Approval vs email with options



Flow Training: Approval vs email with options

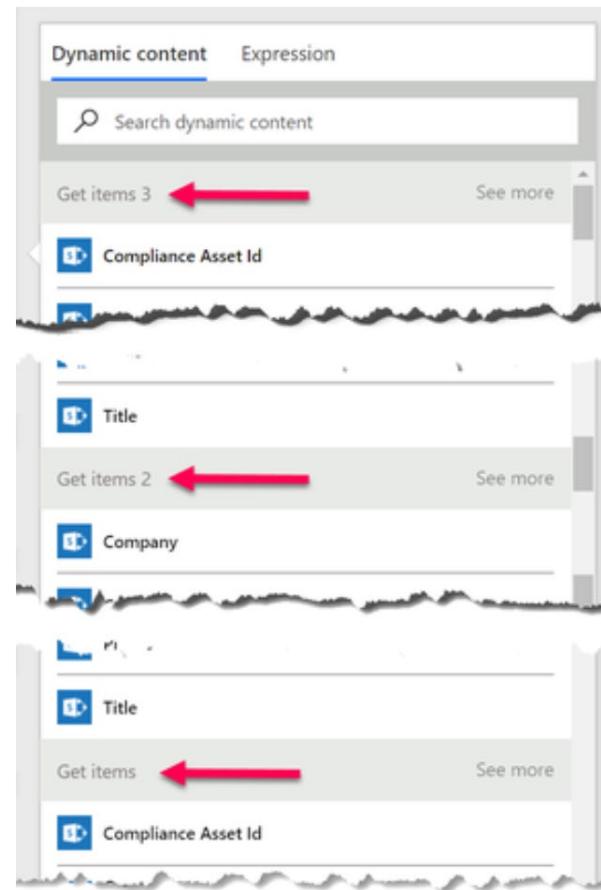
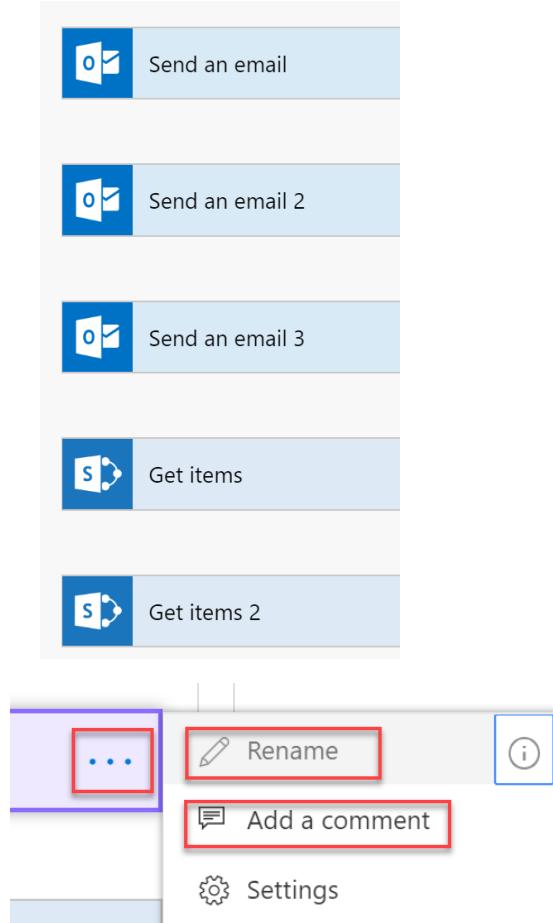
This is a Flow used to demo approval Category: Flow Training Business unit: Contoso IT

≡ Edit description

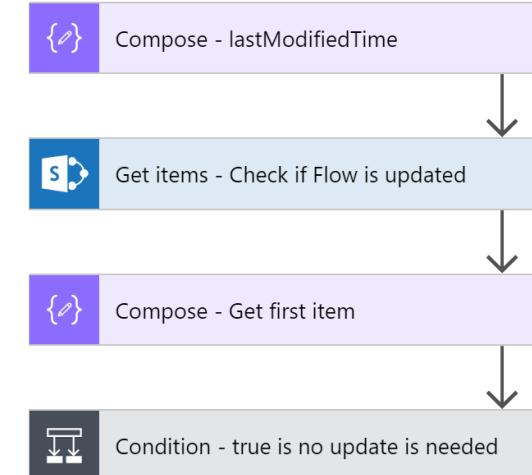
**Good Description**

# Good practice - Action naming

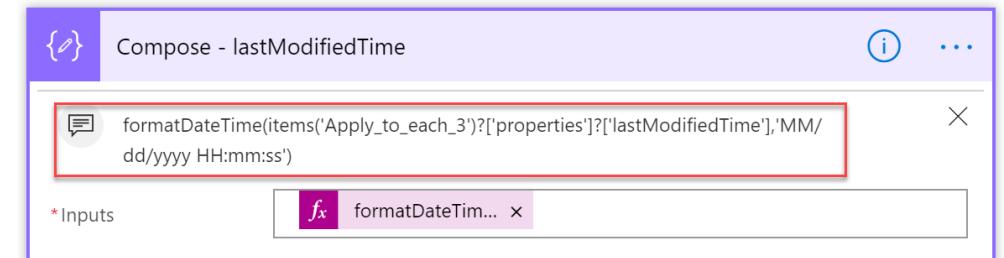
**BAD NAME**



**GOOD NAME**



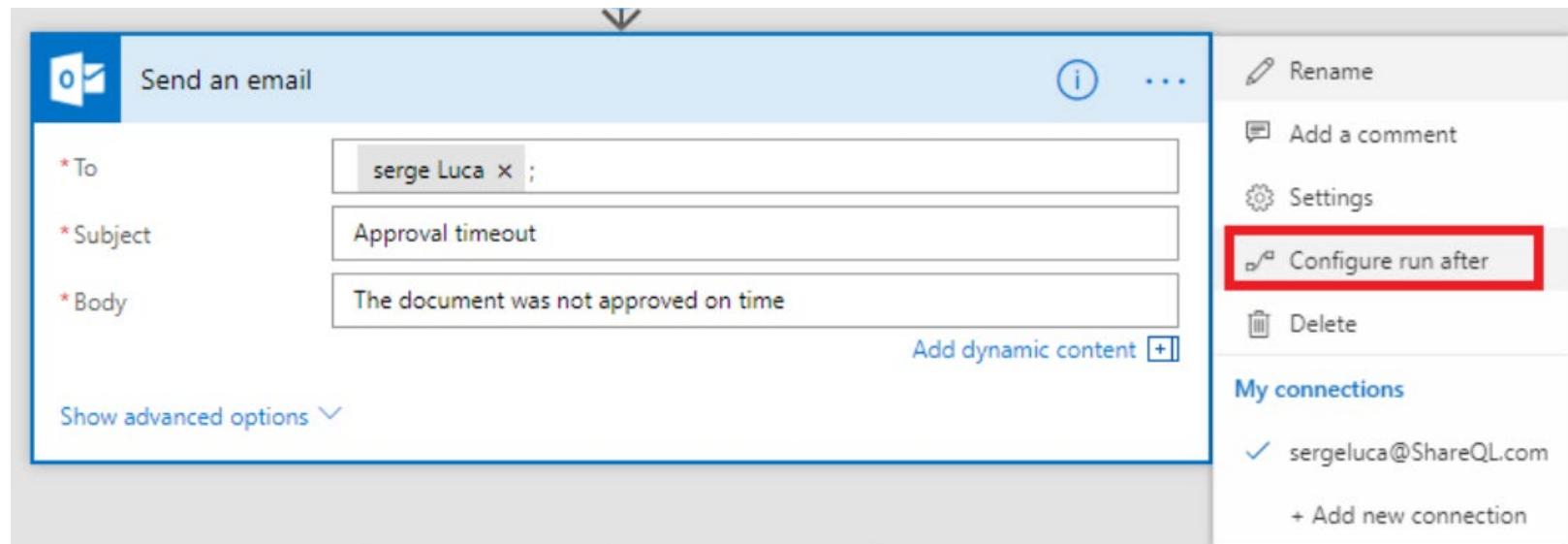
**Use comments**



# Error Handling & Advanced Actions



# Error handling: use “Configure run after”



The screenshot shows the 'Send an email' action configuration in Microsoft Flow. The 'To' field is set to 'serge Luca', the 'Subject' is 'Approval timeout', and the 'Body' contains the message 'The document was not approved on time'. A red box highlights the 'Configure run after' option in the context menu on the right. The 'My connections' section shows an email connection to 'sergeluca@ShareQL.com'.

'Send an email' should run after:

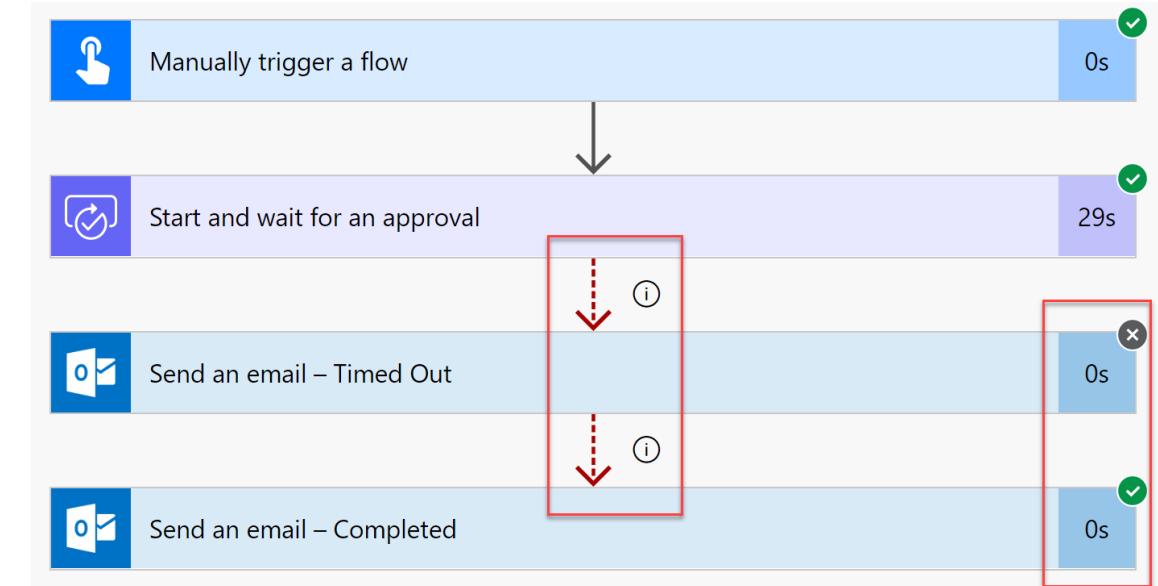
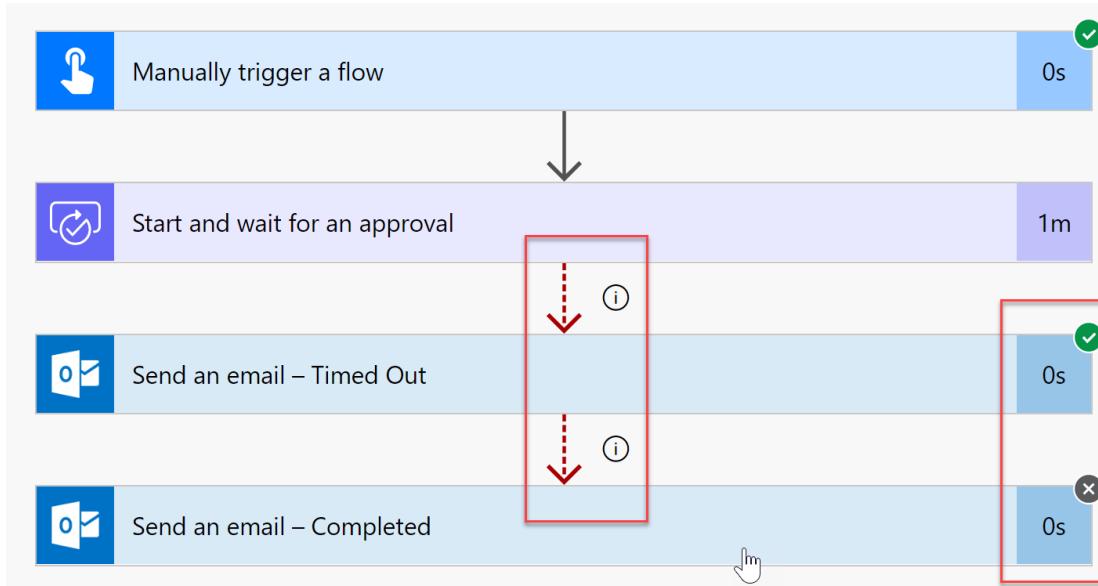
**Start an approval** Timed out

- is successful
- has failed
- is skipped
- has timed out

Flow run time is limited to 30 days

Done Cancel

# Error handling



## Guide to Error Handling in Power Automate

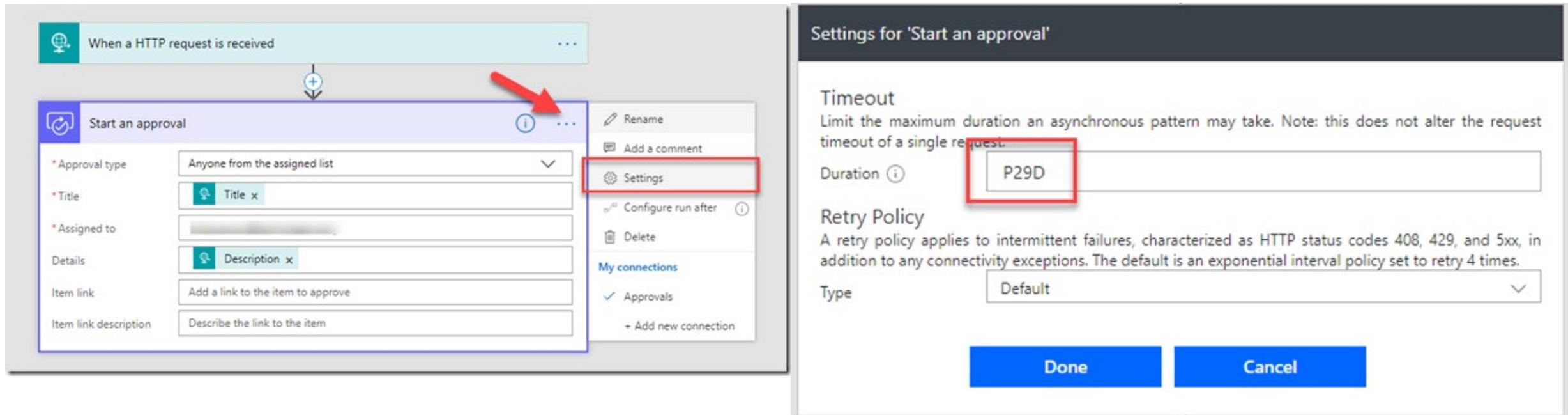
<https://www.sjlewis.com/2022/01/29/a-guide-to-error-handling-in-power-automate-flow>

## Best practices for error handling in Power Automate flows

<https://learn.microsoft.com/en-us/training/modules/error-handling>

# Approval expiring

- The default max timeout is 30 days in Power Automate
- But you can change the timeout



If you set action timeout to 29 days, it's guaranteed to timeout before the whole flow times out. To test out you can set the timeout lower, for example 15 minutes (PT15M).



**Powerful alone. Better together.**

**Thank you.**

