



IT Process Automation

(for W365 Automation)

Esther Barthel, MSc

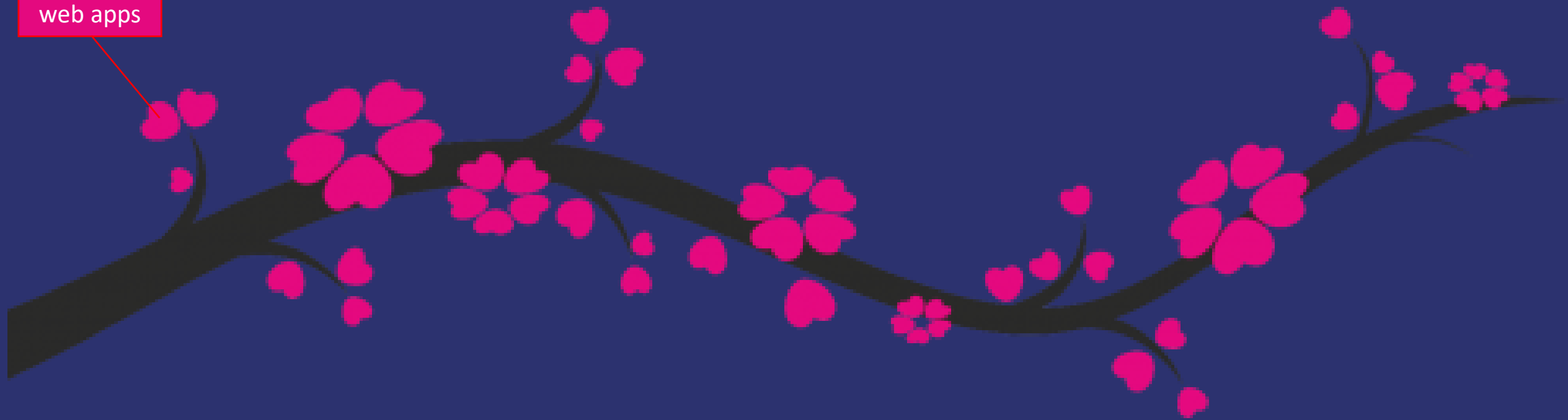
Sr. Solutions Architect & DevOps Engineer


Sr. Solutions Architect
Sr. DevOps Engineer



Esther
Barthel


building
web apps





building
web apps

server
admin



building
web apps

server
admin

Citrix
admin



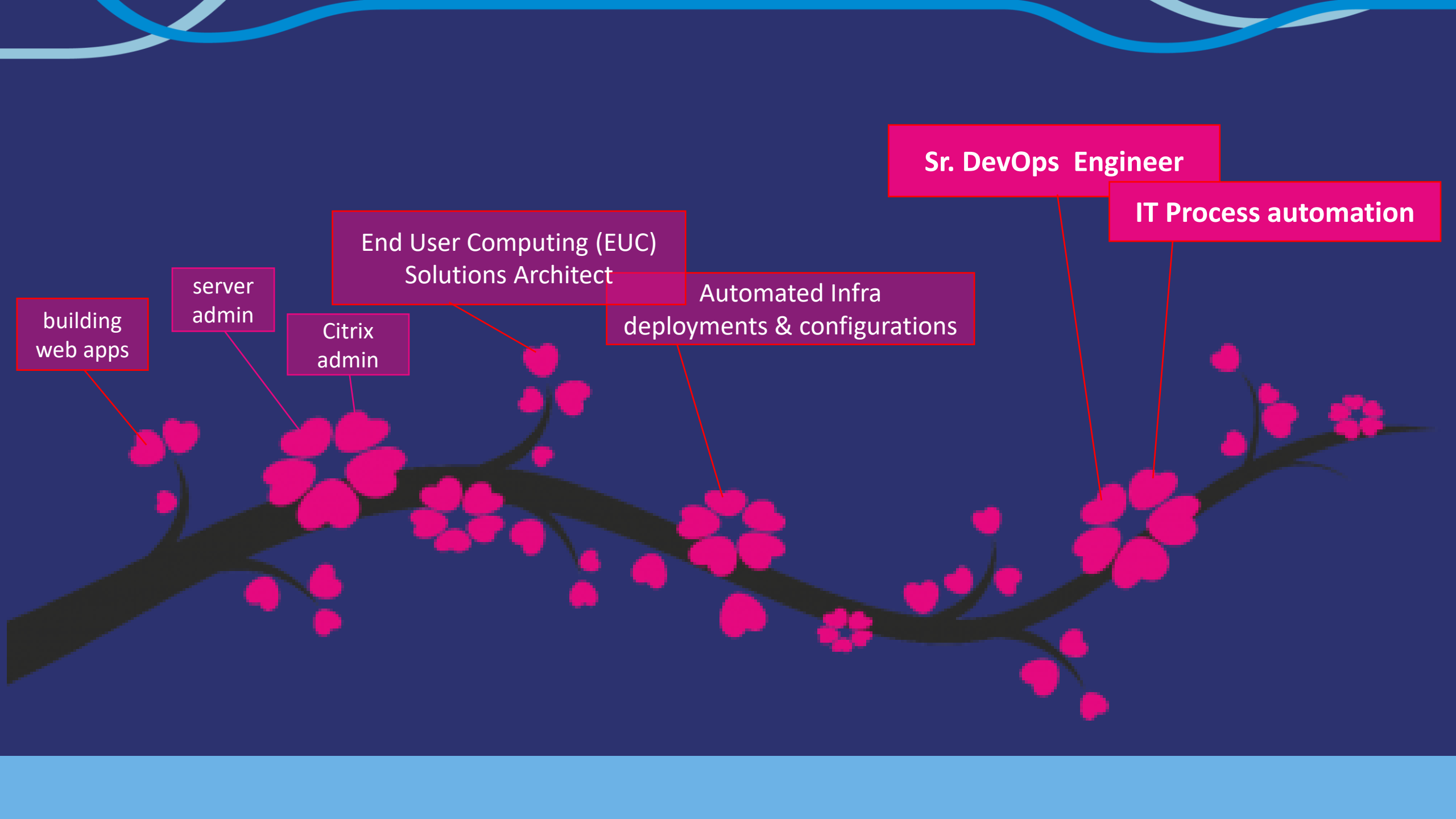
End User Computing (EUC)
Solutions Architect

Automated Infra
deployments & configurations

server
admin

Citrix
admin

building
web apps



building web apps

server admin

Citrix admin

End User Computing (EUC)
Solutions Architect

Automated Infra
deployments & configurations

Sr. DevOps Engineer

IT Process automation

A decorative graphic at the top of the slide features several wavy lines in light blue and white. Below these lines are several small, colorful symbols: a white circle, an orange plus sign, a green plus sign, a yellow plus sign, an orange circle, and a green circle.

End User Computing



The Plex logo is displayed on a black square background. It features the word "plex" in a white, lowercase, sans-serif font. The letter "x" is stylized with a yellow chevron pointing to the right, integrated into its design.

plex

The Netflix logo is shown on a black rounded square background. It consists of a large, bold, red capital letter "N" with a 3D effect, appearing as if it's made of thick red paper or cardboard.

N



AVD



W365 CloudPC



AVD



W365 CloudPC



Microsoft Azure
Resource Manager

AVD

Microsoft Graph



W365 CloudPC



Infrastructure-as-Code

Infrastructure-as-Code (IaC)

“

*a modern approach to **managing & provisioning** IT **infrastructure** through the use of **code**, rather than traditional manual processes.*

”

Infrastructure-as-Code (IaC)

- ***efficiency***
- ***reliability***
- ***consistency***

in the deployment and management of IT infrastructure



Every Bite a

Better Burger!

Burger

Pasta

Salads



Beef Burger
Onion With Cheese
\$18.00



Chicken Burger
Cheese With Chicken
\$12.00



Classic Burger
Beef With Lettuce
\$24.00



Grilled Burger
Griller Chicken
\$14.00



Classic Burger
Beef With Lettuce
\$24.00



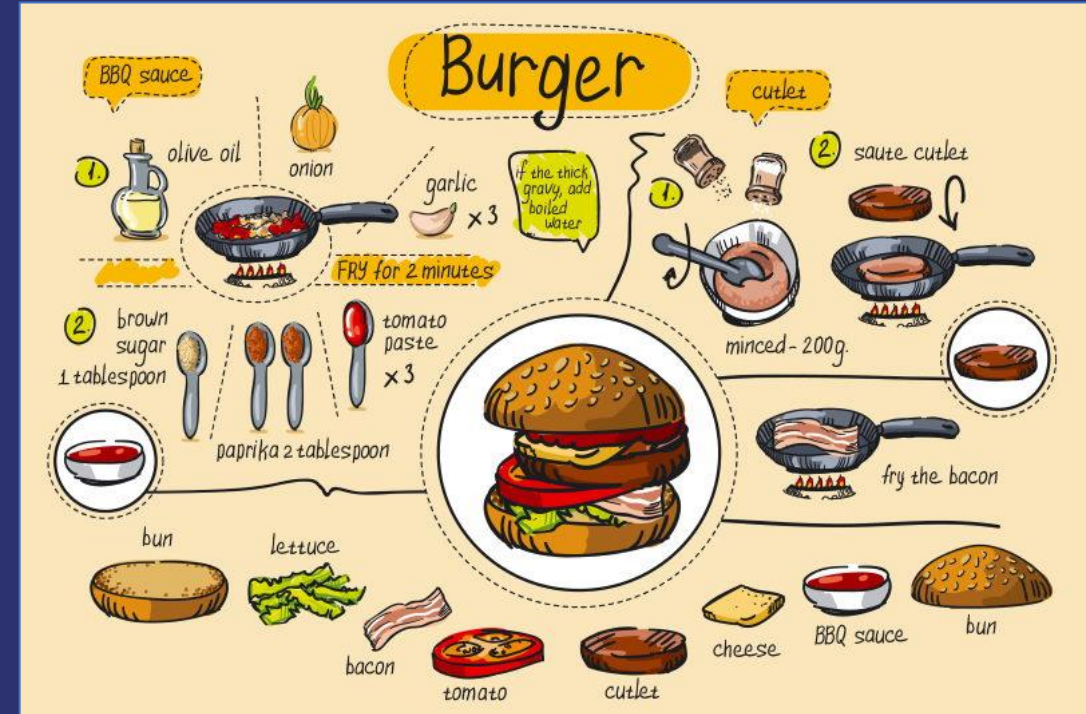
Grilled Burger
Griller Chicken
\$14.00



**Fresh Beef
Burger With Cheese...**

Beef burger With Fresh Cheese And Onion Served With Fries And Drink. Enjoy our 20% Off With New Promo Code

Declarative code
(templates)



Imperative code
(scripts)

Every Bite a

Better Burger!

Burger

Pasta

Salads



Beef Burger
Onion With Cheese
\$18.00



Chicken Burger
Cheese With Chicken
\$12.00



Classic Burger
Beef With Lattice
\$24.00



Grilled Burger
Griller Chicken
\$14.00



Classic Burger
Beef With Lattice
\$24.00



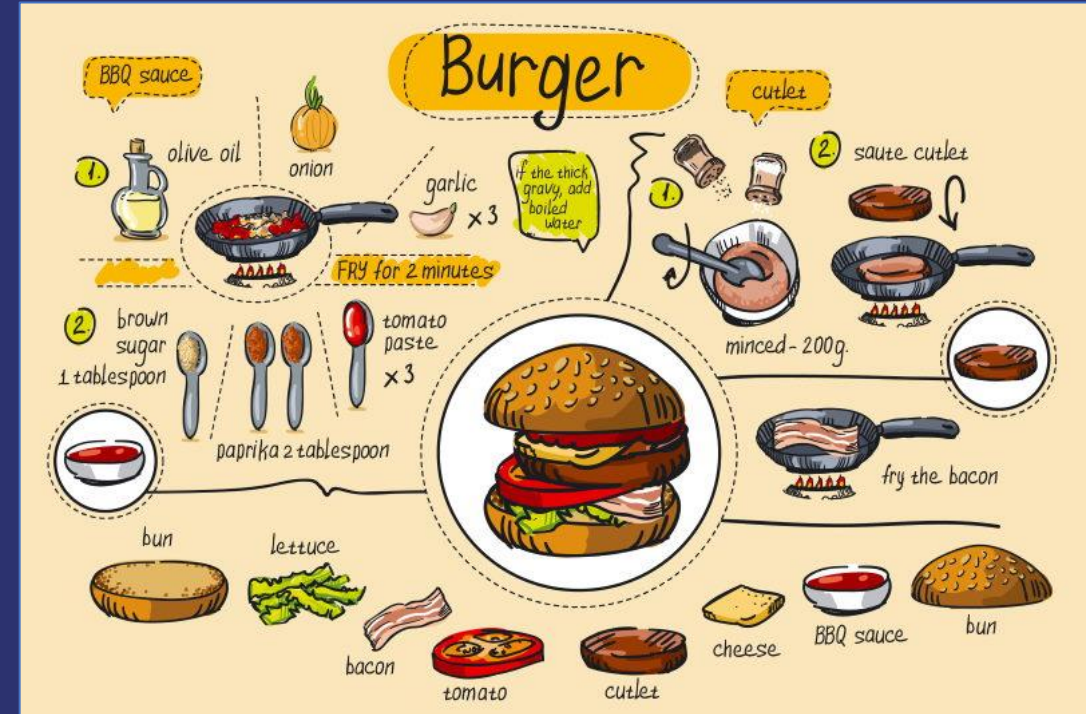
Grilled Burger
Griller Chicken
\$14.00



Fresh Beef Burger With Cheese...

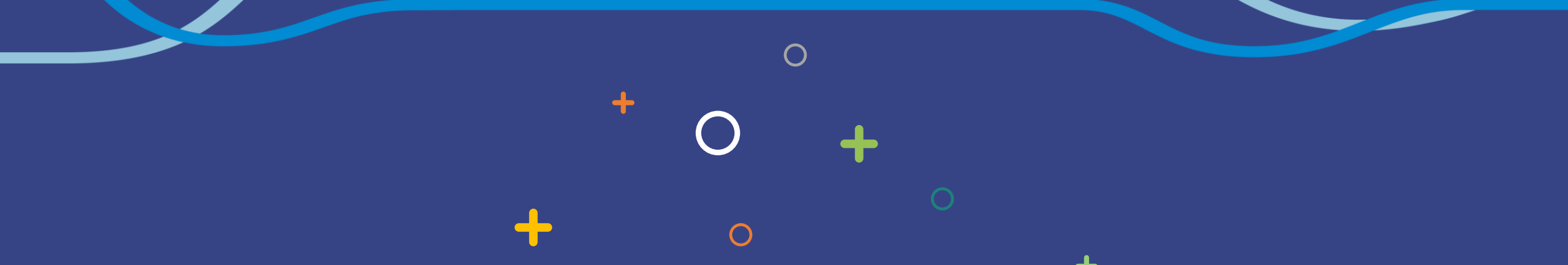
Beef burger With Fresh Cheese And Onion Served With Fries And Drink. Enjoy our 20% Off With New Promo Code

Declarative code (templates)

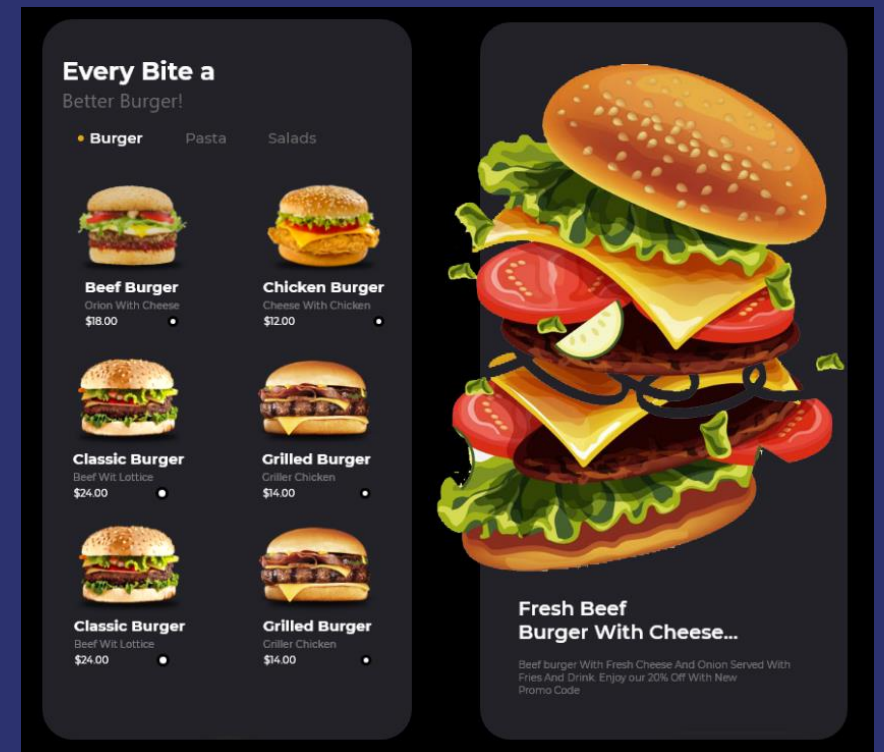


Imperative code (scripts)





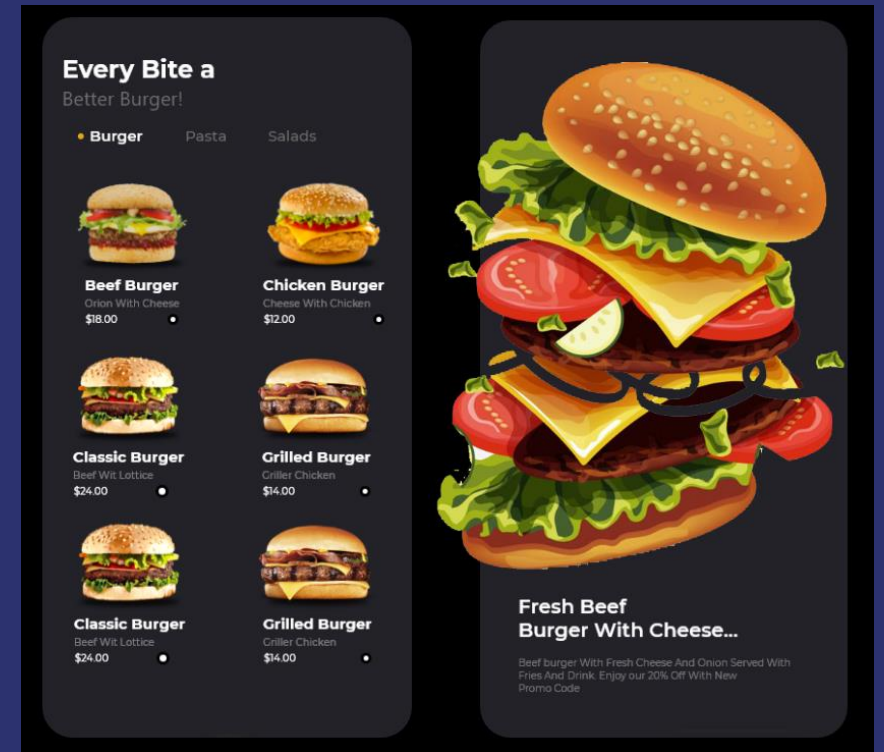
Getting Started with the Graph API



Declarative code (templates)



Microsoft
Graph



Declarative code (templates)

Version

Microsoft Graph Bicep v1.0

Filter by title

Bicep templates for Microsoft Graph documentation

Microsoft Graph Bicep v1.0 reference

Overview

Applications

Federated identity credentials

App role assigned to

Groups

OAuth2 permission grants

Service principals

[Learn](#) / [Microsoft Graph](#) /

Microsoft Graph Bicep resource reference overview

The following Microsoft Graph Bicep types are available for use in your Bicep files.

Applications

App role assigned to

Federated identity credentials

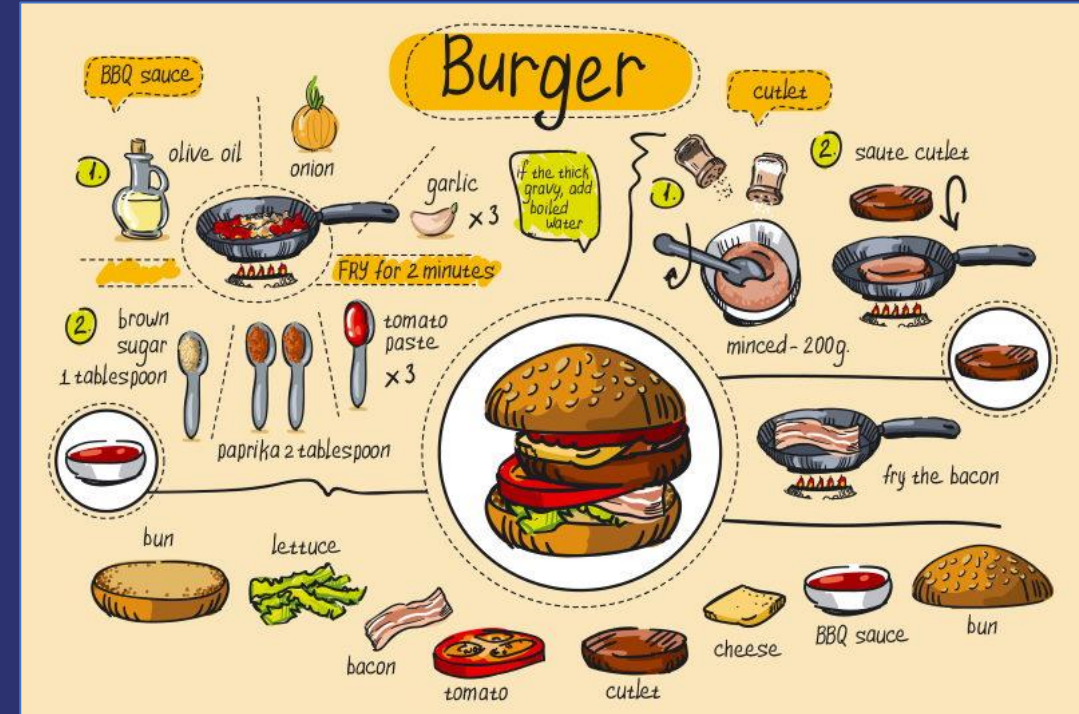
Groups

OAuth2 permission grants

Service principals

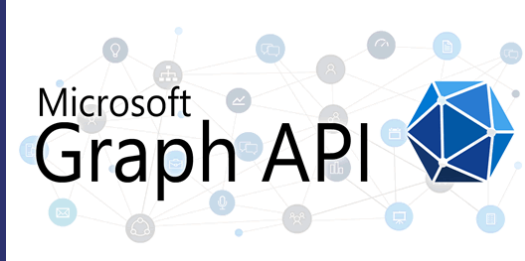
Microsoft Graph API

Imperative code (scripts)





Coding skills loading



Rest(full) API



PowerShell SDK



[Microsoft Learn: Microsoft Graph REST API v1.0 endpoint reference](#)

[Microsoft Learn: Get started w/ Microsoft Graph PowerShell SDK](#)

Graph Explorer

Sample queries

Resources

Search resources

Switch to beta ☐ Off

Resources available

groups (8)

GET

POST

> {group-id} (46)

> \$count (1)

GET

v1.0

`https://graph.microsoft.com/v1.0/groups?$filter=startswith(displayName, 'grp-sec')&$select=id,displayName,description`



Run query

Request body

Request headers

Modify permissions

Access token

OK - 200 - 333 ms



Response preview

Response headers

Code snippets

Toolkit component

Adaptive cards

```
{
  "@odata.context": "https://graph.microsoft.com/v1.0/$metadata#groups(id,displayName,description)",
  "value": [
    {
      "id": "XXXXXXXXXXXXXXXXXXXX",
      "displayName": "grp-sec-AVDUsers",
      "description": "AVD Users group"
    }
  ]
}
```

Response preview

Response headers

Code snippets

Toolkit component

Adaptive cards

C#

CLI

Go

Java

JavaScript

PHP

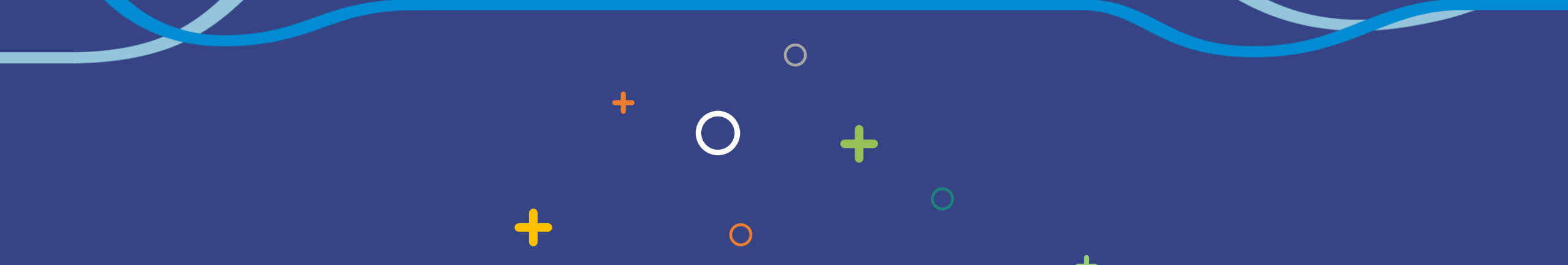
PowerShell

Python

```
# Leverage the power of our client libraries. Download the PowerShell client library here https://aka.ms/pshellsdk
# To read more about our SDKs, go to the documentation page at https://aka.ms/pshellsdkdocs

Import-Module Microsoft.Graph.Groups

Get-MgGroup -Filter "startswith(displayName, 'grp-sec')" -Property "id,displayName,description"
```

A decorative graphic at the top of the slide features several wavy lines in shades of blue and light blue. Below these lines, several small, floating symbols are scattered: a white circle, a green plus sign, a green circle, a yellow plus sign, an orange plus sign, and an orange circle.

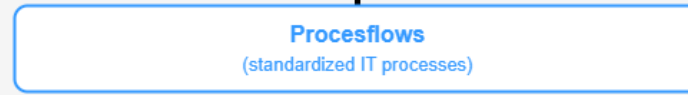
DevOps-as-a-Service versus DevOps Platform Service

DevOps-as-a-Service

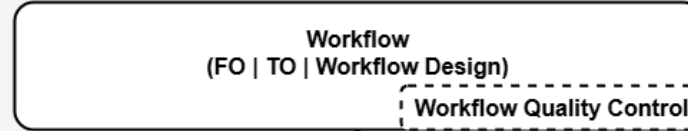
DevOps Platform Service



Product Owner



Automation Engineer



Workflow Quality Control



Product Owner



Solutions Architect



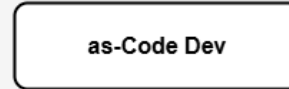
Solutions Architect



Automation Engineer



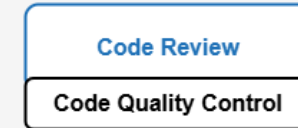
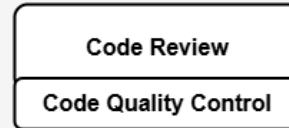
Automation Engineer



DevOps Engineer



Automation Engineer



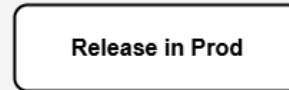
DevOps Engineer



Automation Engineer



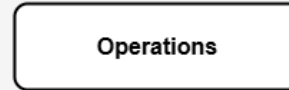
Automation Engineer



DevOps Engineer



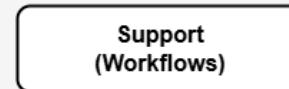
Automation Engineer



DevOps Engineer



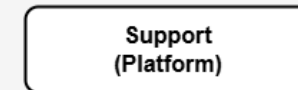
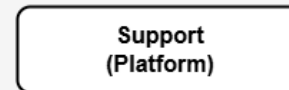
Automation Engineer



DevOps Engineer



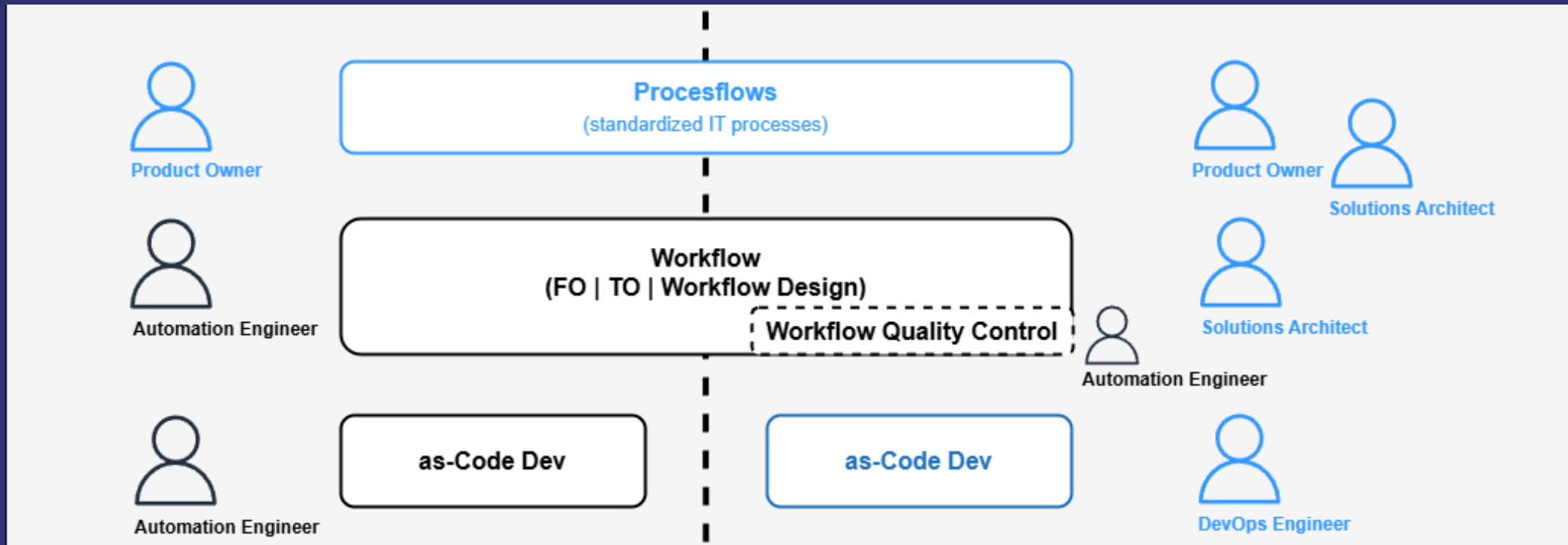
Automation Engineer



Automation Engineer

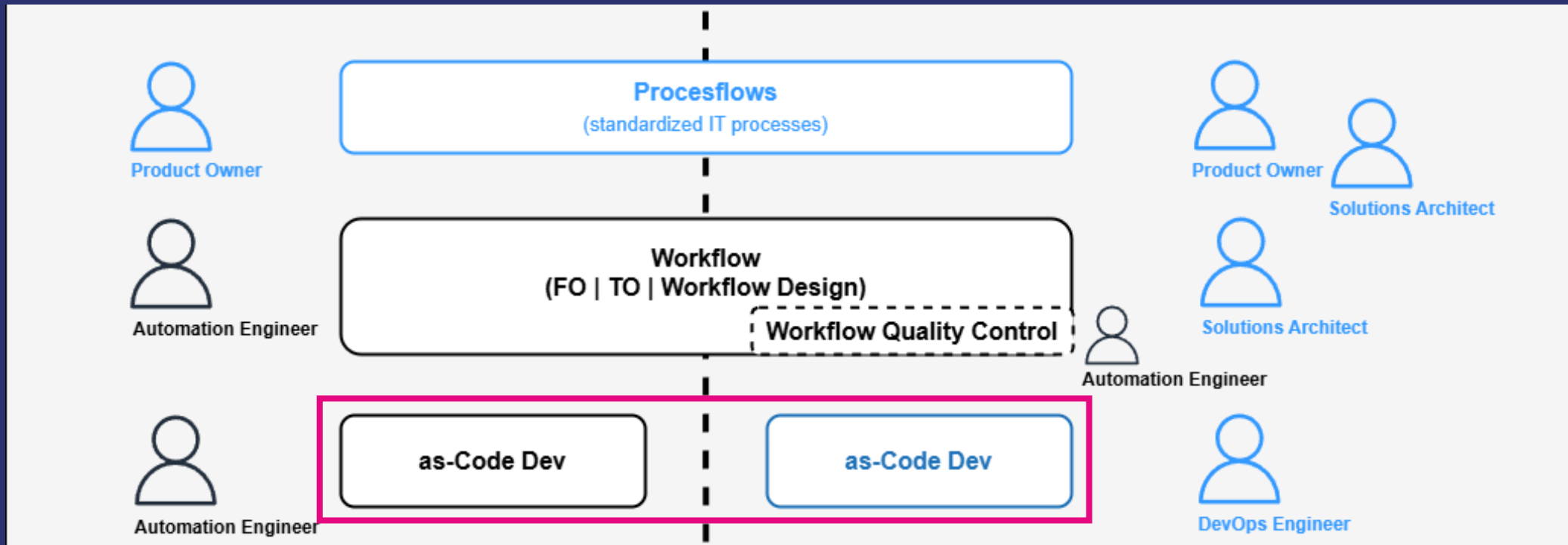
DevOps-as-a-Service

DevOps Platform Service



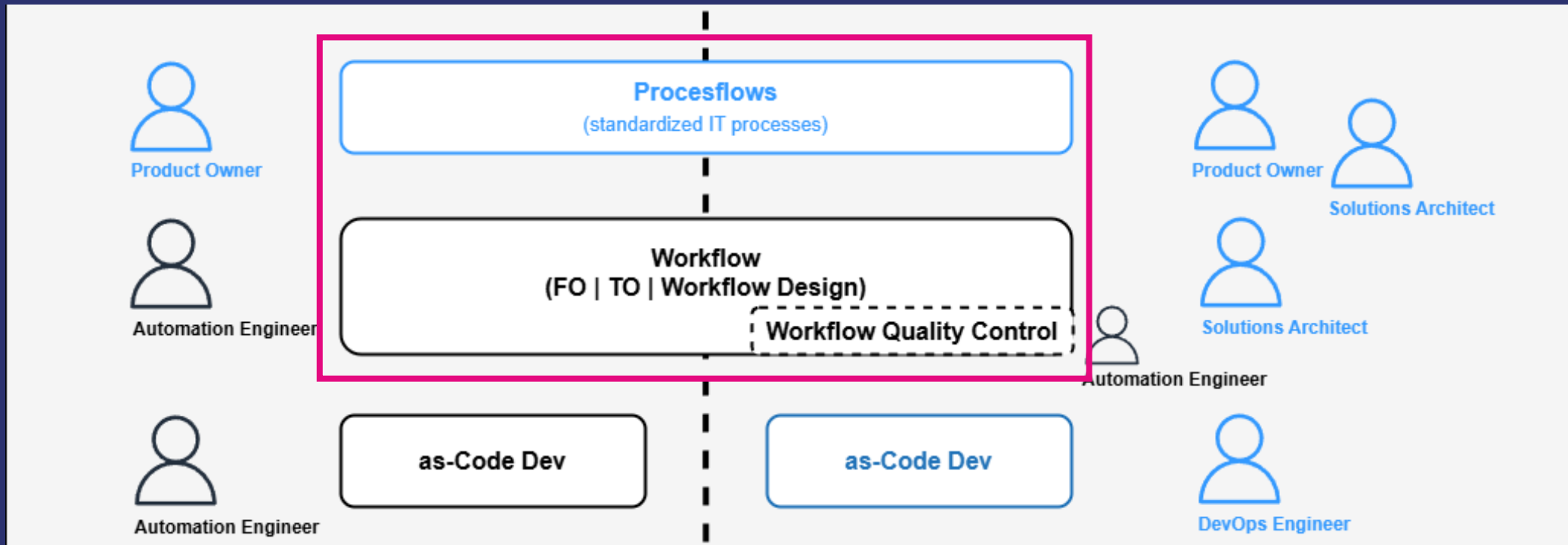
DevOps-as-a-Service

DevOps Platform Service



DevOps-as-a-Service

DevOps Platform Service



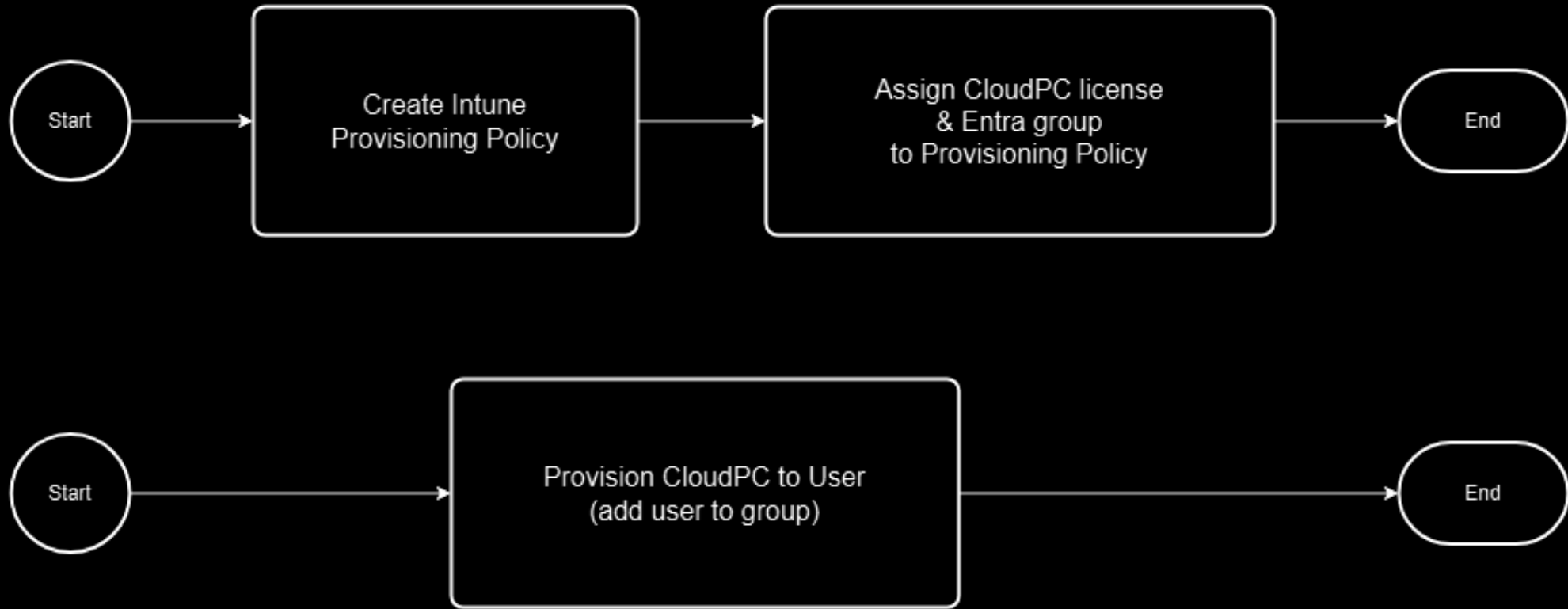


IT Processes

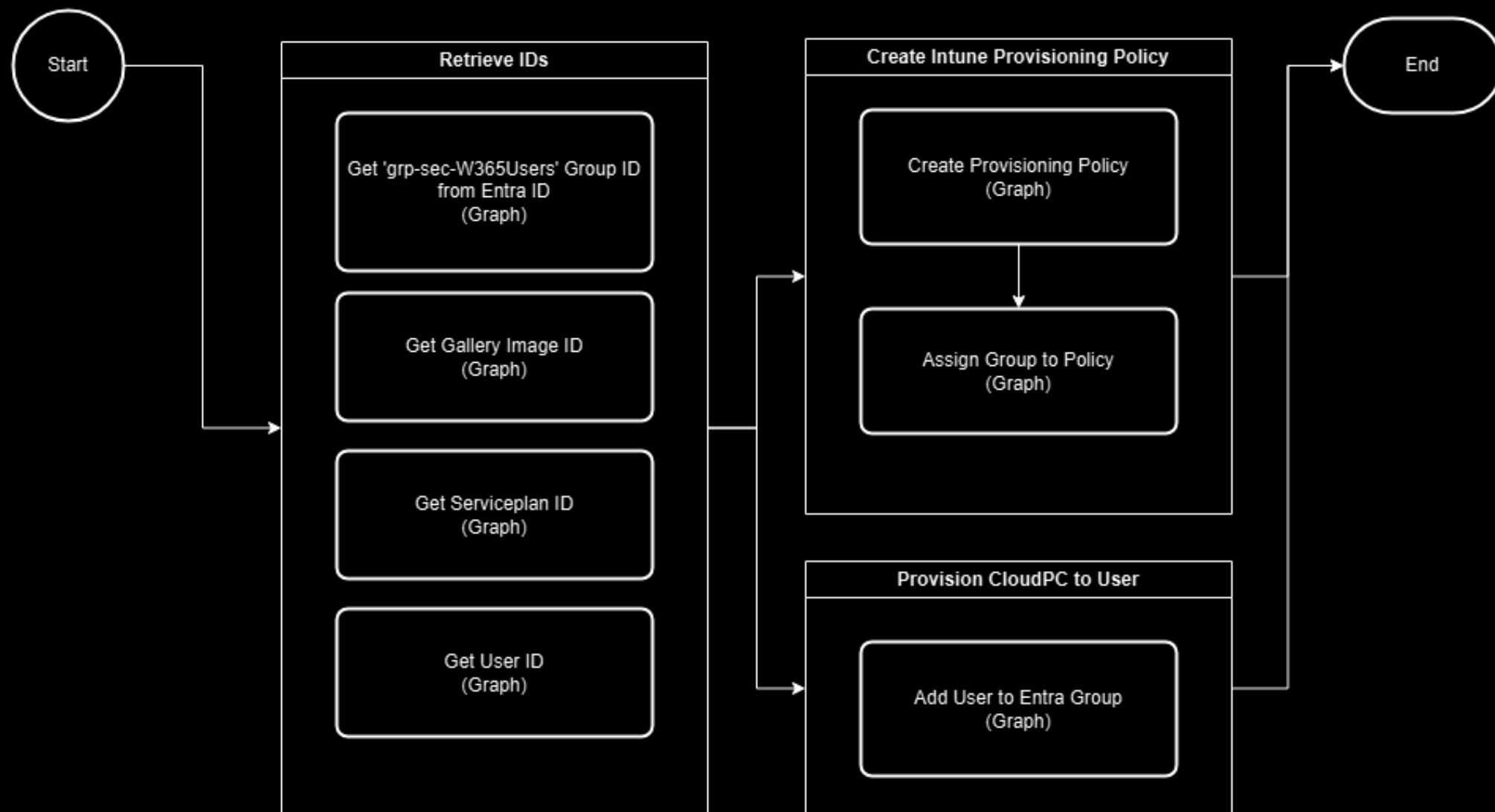


Graph API Example: Windows 365 CloudPC

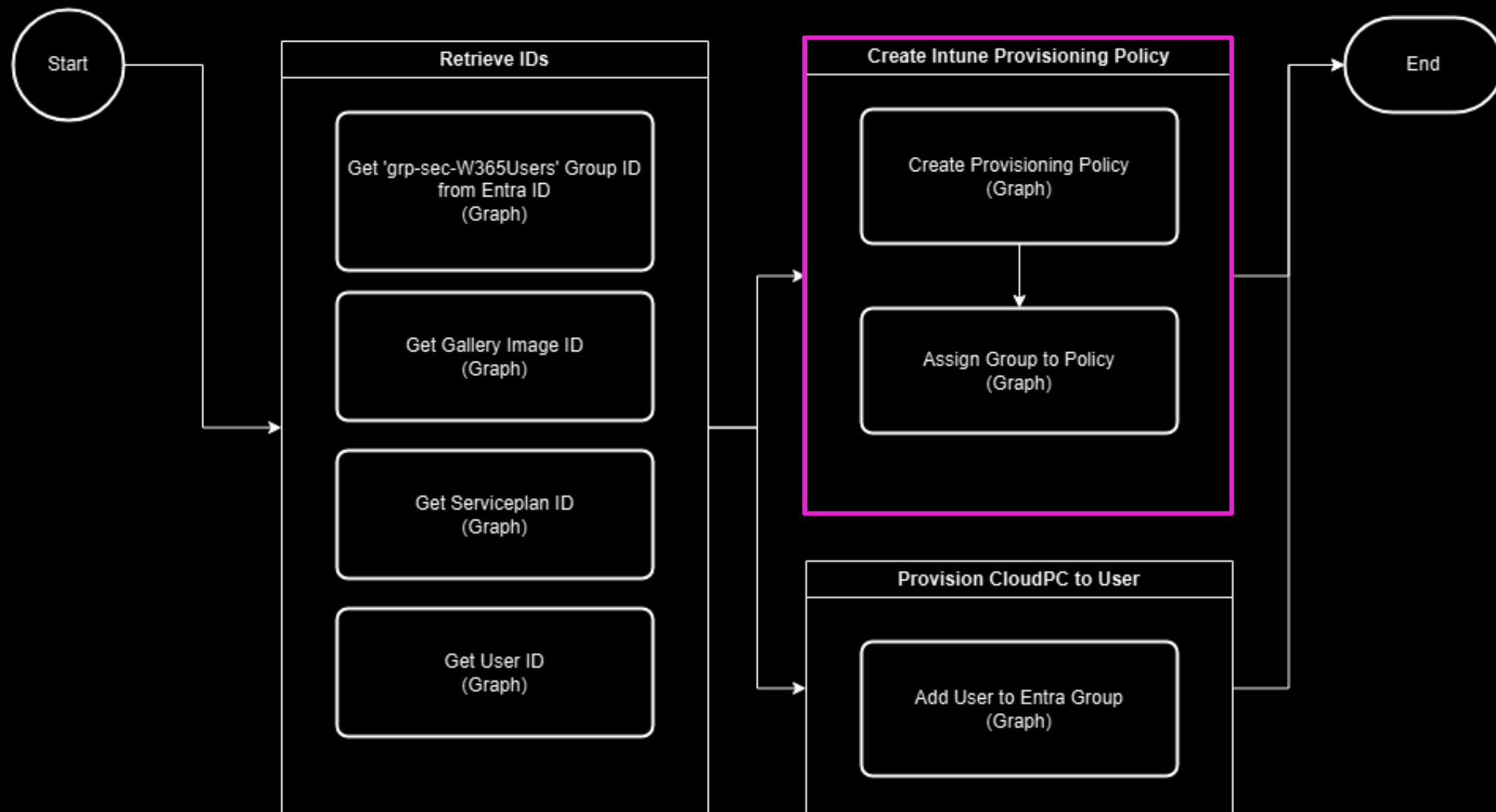
Provision Windows 365 CloudPC to User



Provision Windows 365 CloudPC to User



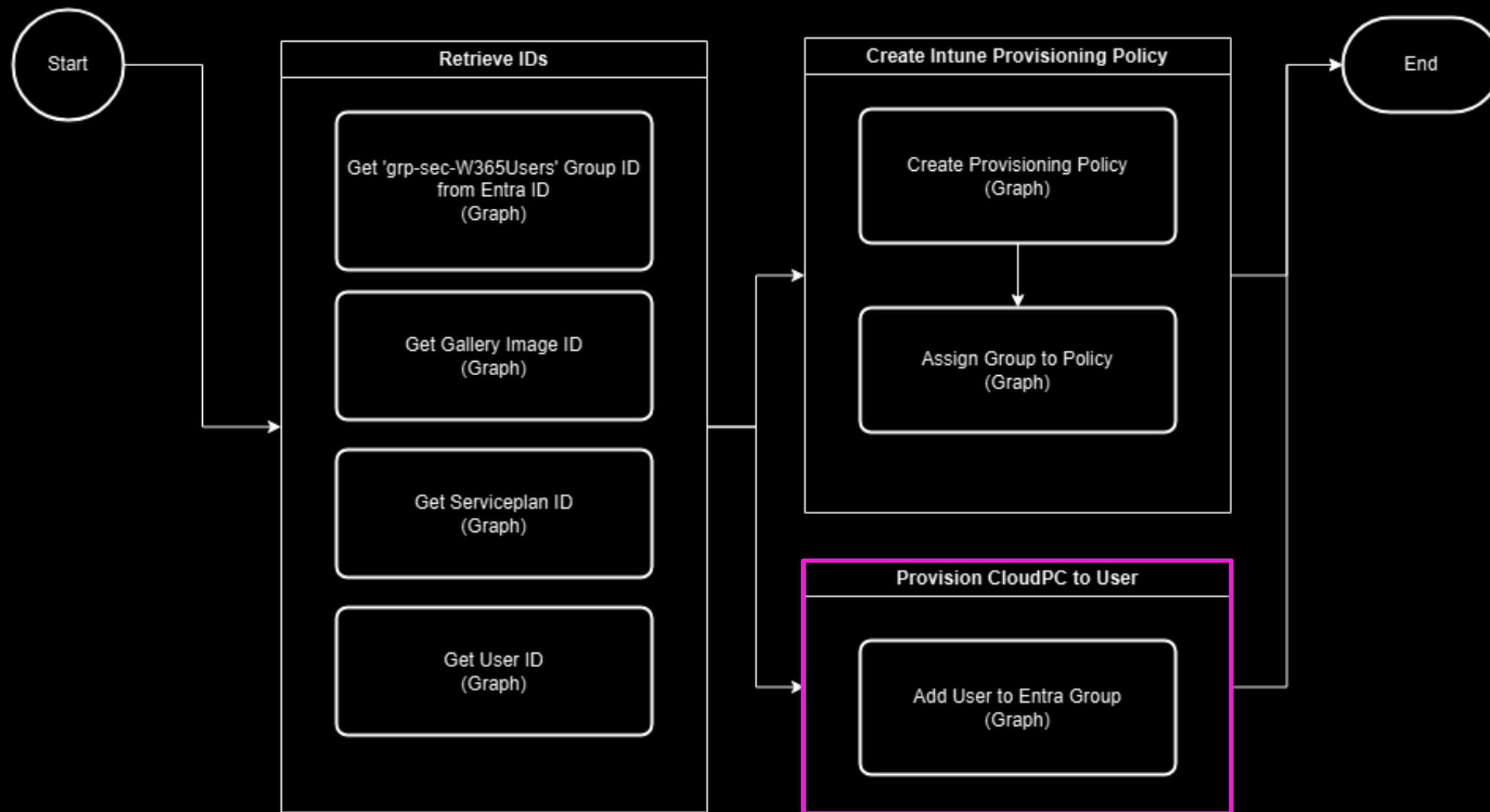
Provision Windows 365 CloudPC to User



__ExpertsLive > Demos > > 02_W365_Create_Provisioning_Policy.ps1 > ...

```
11 > #region Step 00 - Connect to Microsoft Graph API (retrieve bearer token) ...
36 #endregion
37
38 > #region Step 01 - Get the Entra Group ID ...
62 #endregion
63
64 > #region Step 02 - Get the Gallery Image ID ...
87 #endregion
88
89 > #region Step 03 - Get the CloudPC Serviceplan ID ...
111 #endregion
112
113 > #region Step 04 - Create CloudPC Provisioning Policy ...
163 #endregion
164
165 > #region Step 05 - Assign Entra Group and Serviceplan to CloudPC Provisioning Policy ...
199 ✨ #endregion
200
```

Provision Windows 365 CloudPC to User



_ExpertsLive > Demos > > 03_W365_Provision_CloudPC_to_User.ps1 > ...

```
11 > #region Step 00 - Connect to Microsoft Graph API (retrieve bearer token) ...
34 #endregion
35
36 > #region Step 01 - Get the Entra Group ID ...
60 #endregion
61
62 > #region Step 02 - Get the Entra User ID ...
85 #endregion
86
87 > #region Step 03 - Add Member to Group ...
112 #endregion
113 ✨
114
```


Graph API: Reference Docs

[Microsoft Learn: Microsoft Graph REST API v1.0 endpoint reference](#)



Version

Microsoft Graph REST API v1.0 ▾

▾ API v1.0 reference

Overview

> Users

▾ Groups

Overview

▾ Group

List

Create

Get

Update

Delete

▾ Group management

List members

Add members

Remove member

Microsoft Graph REST API v1.0 endpoint reference

Article • 05/16/2024 • 12 contributors

Welcome to Microsoft Graph REST API reference for the `v1.0` endpoint.

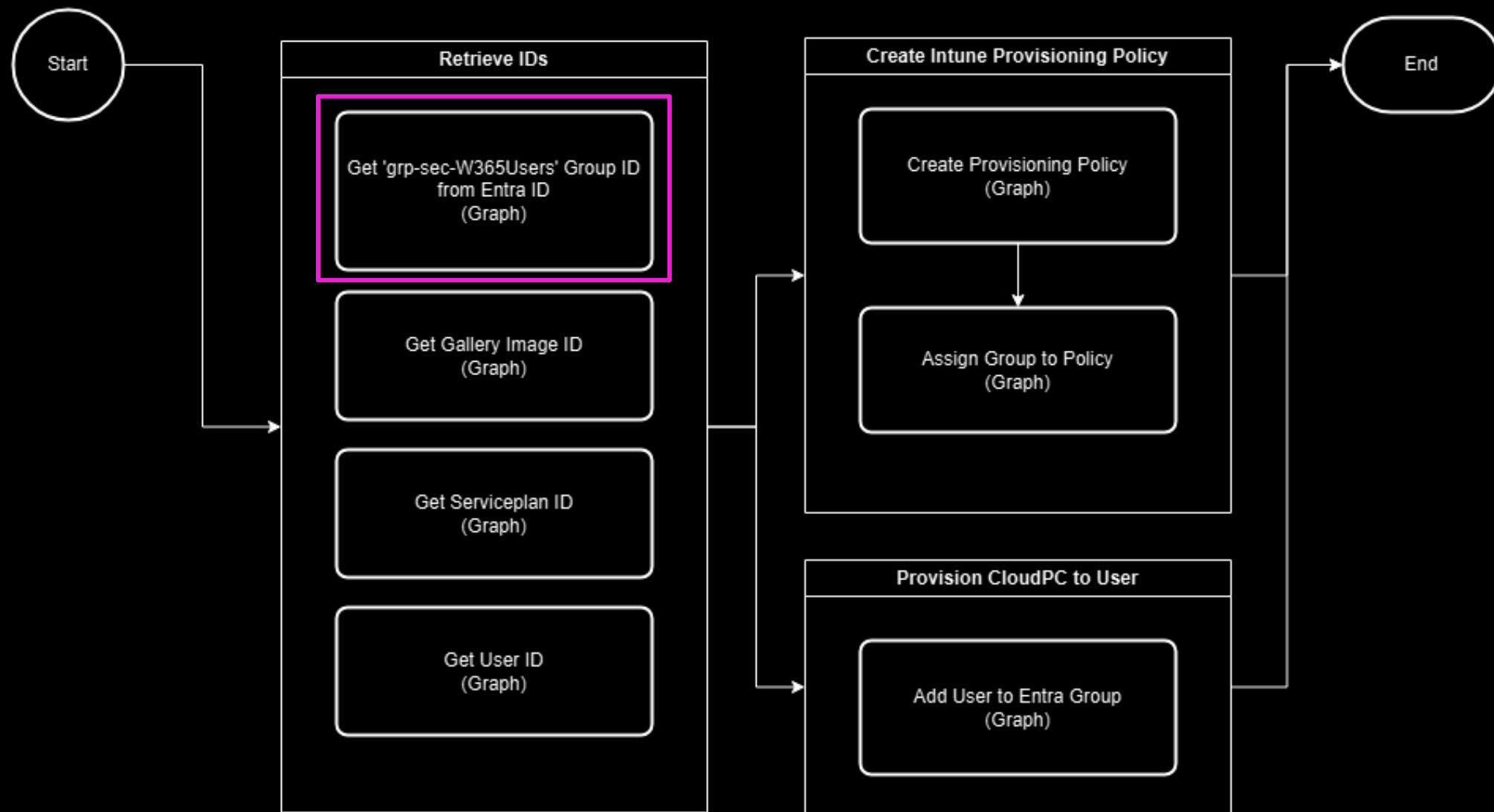
API sets on the `v1.0` endpoint (<https://graph.microsoft.com/v1.0>) have reached general availability (GA), and have gone through a rigorous review-and-feedback process with customers to meet practical, production needs. Updates to APIs on this endpoint are additive in nature and don't break existing app scenarios.

Common use cases

The power of Microsoft Graph lies in easy navigation of entities and relationships across different services exposed on a single Microsoft Graph REST endpoint.

Some of these services are designed to enable rich scenarios around a `user` and around a `group`.

Provision Windows 365 CloudPC to User





Version

Microsoft Graph REST API v1.0 ▾

Filter by title

▾ API v1.0 reference

Overview

> Users

▾ Groups

Overview

▾ Group

Group

List

List groups

List all the groups available in an organization, excluding dynamic distribution groups. To retrieve dynamic distribution groups, [use the Exchange admin center](#).

Example 4: Use \$filter to get one group with a display name that starts with 'a'

Request

The following example shows a request. This request requires the **ConsistencyLevel** header set to `eventual` and the `$count=true` query string because the request has both the `$orderby` and `$filter` query parameters.

HTTP

C#

CLI

Go

Java

JavaScript

PHP

PowerShell

Python

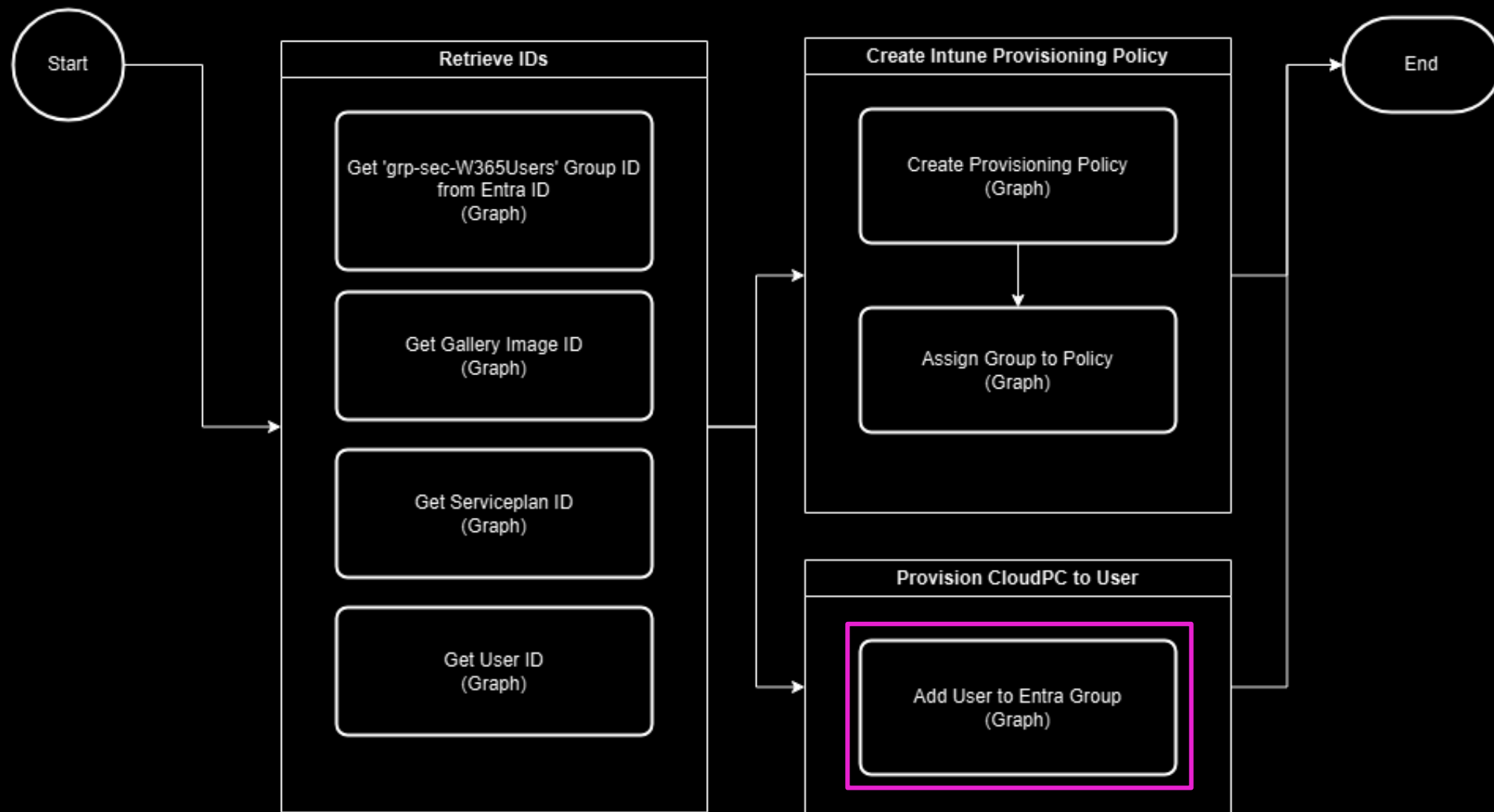
msgraph

Copy

Try It

```
GET https://graph.microsoft.com/v1.0/groups?$filter=startswith(displayName, 'a')
ConsistencyLevel: eventual
```

Provision Windows 365 CloudPC to User





Version

Microsoft Graph REST API v1.0 ▾

Filter by title

▾ API v1.0 reference

Overview

> Users

▾ Groups

Overview

▾ Group

List

Get

▾ Group management

List members

Add members

Add members

Namespace: microsoft.graph

Add a member to a security or Microsoft 365 group. When using the API to add multiple members in one request, you can add up to only 20 members.

Example 1: Add a member to a group

Request

The following example shows a request that uses the **directoryObjects** reference to add a member to a group.

HTTP

C#

CLI

Go

Java

JavaScript

PHP

PowerShell

Python

HTTP

Copy

```
POST https://graph.microsoft.com/v1.0/groups/{group-id}/members/$ref
Content-type: application/json

{
  "@odata.id": "https://graph.microsoft.com/v1.0/directoryObjects/{id}"
}
```

In the request body, supply a JSON representation of the id of the directoryObject, user, or group object you want to add.

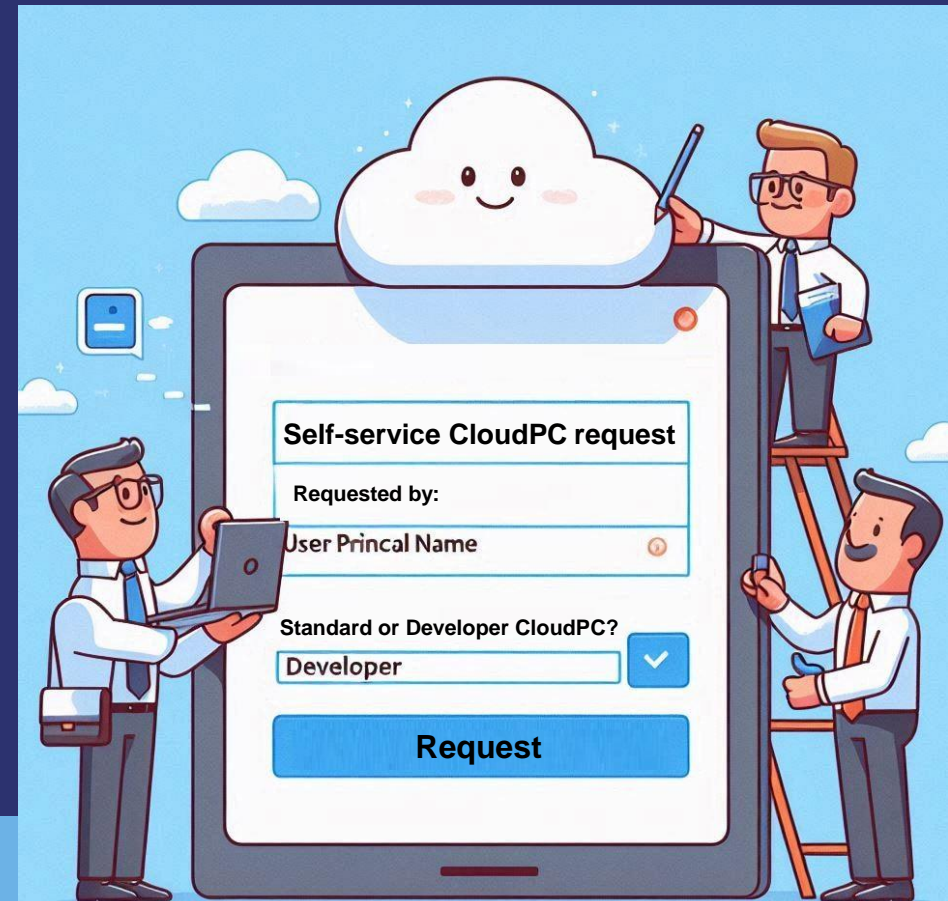


Exercise 1

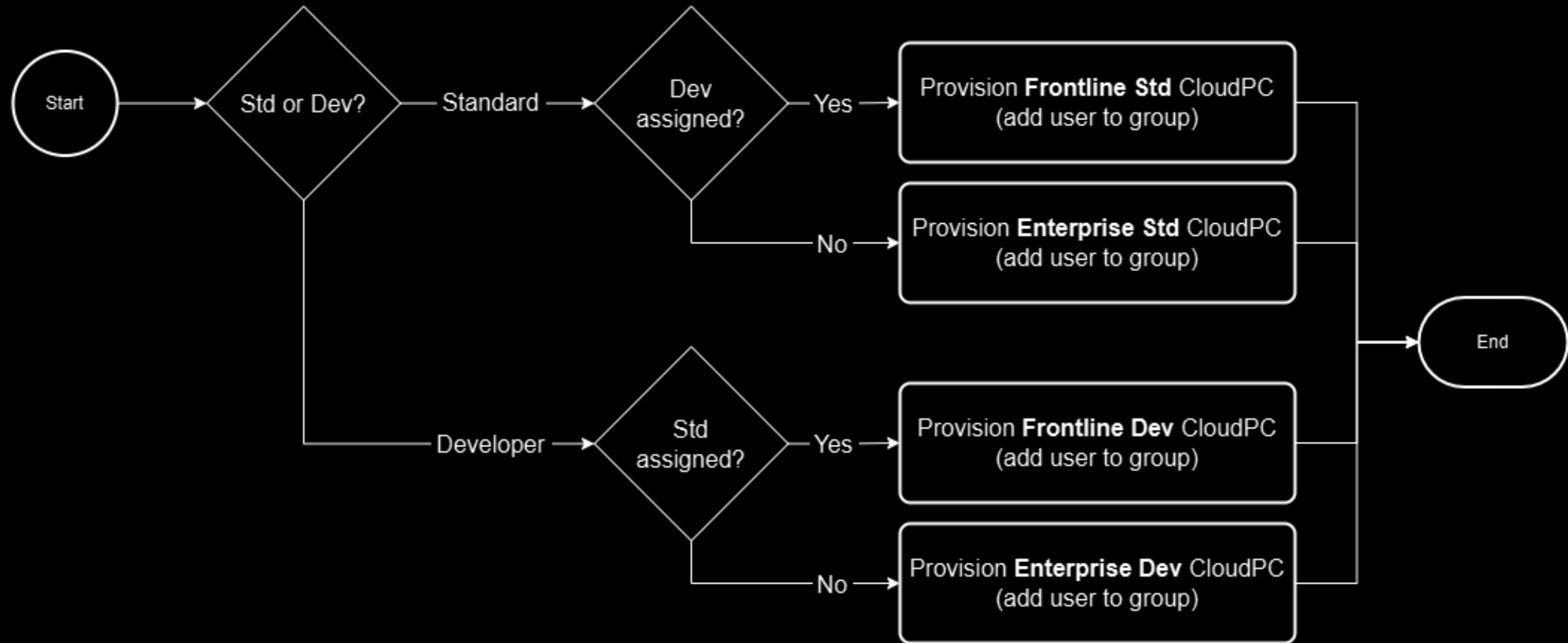
Create a Processflow

Process description:

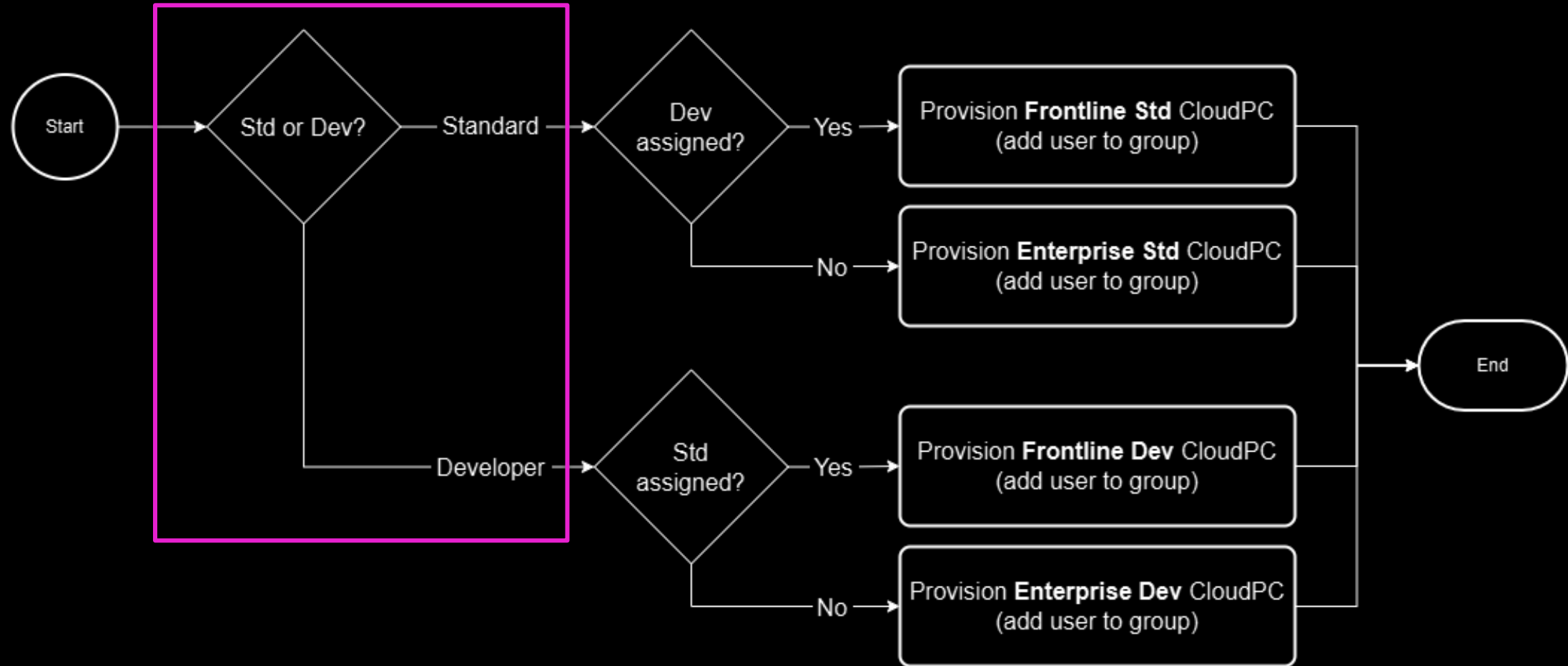
- User can request either a Standard or a Developer Windows 365 CloudPC
- There are two type of CloudPC licenses: Frontline and Enterprise
- The first requested CloudPC will always get an Enterprise license assigned
- If a CloudPC (standard or dev) is already assigned, a Frontline license will be assigned



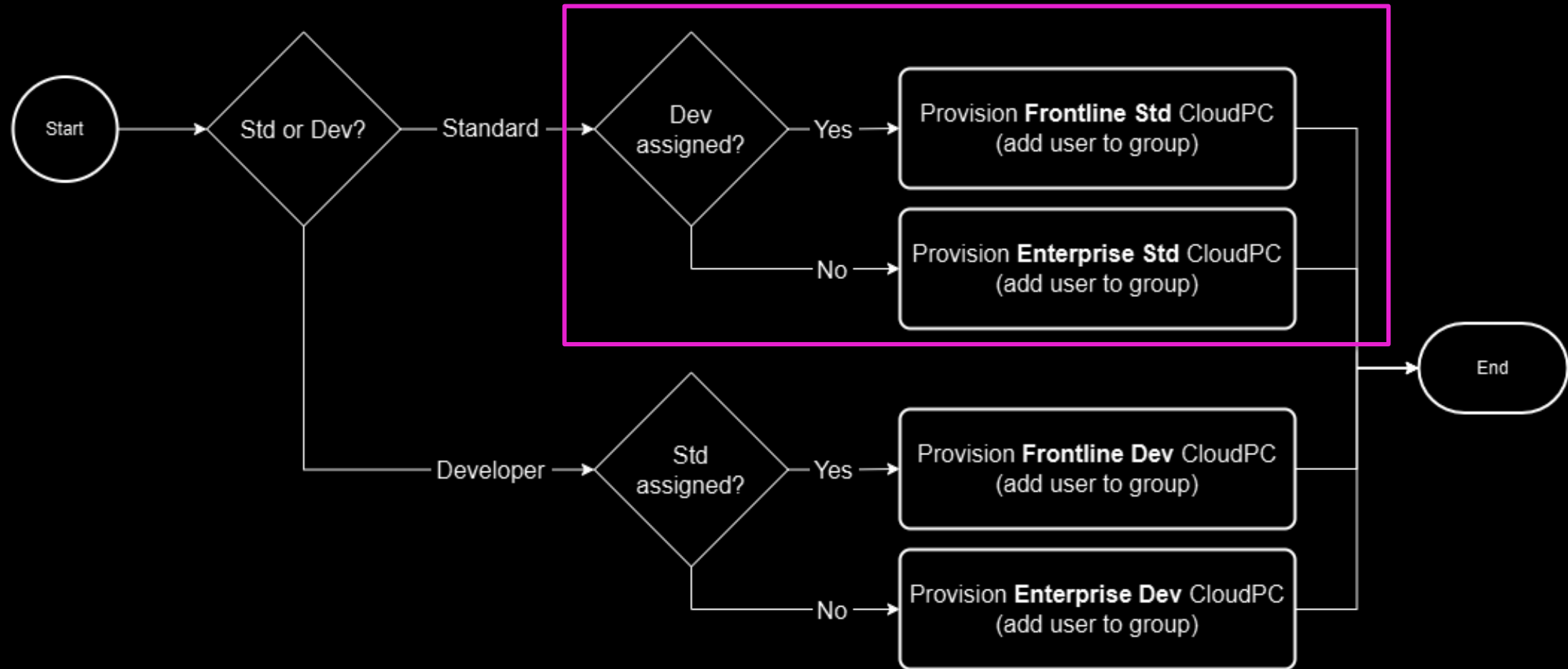
Request Windows 365 CloudPC



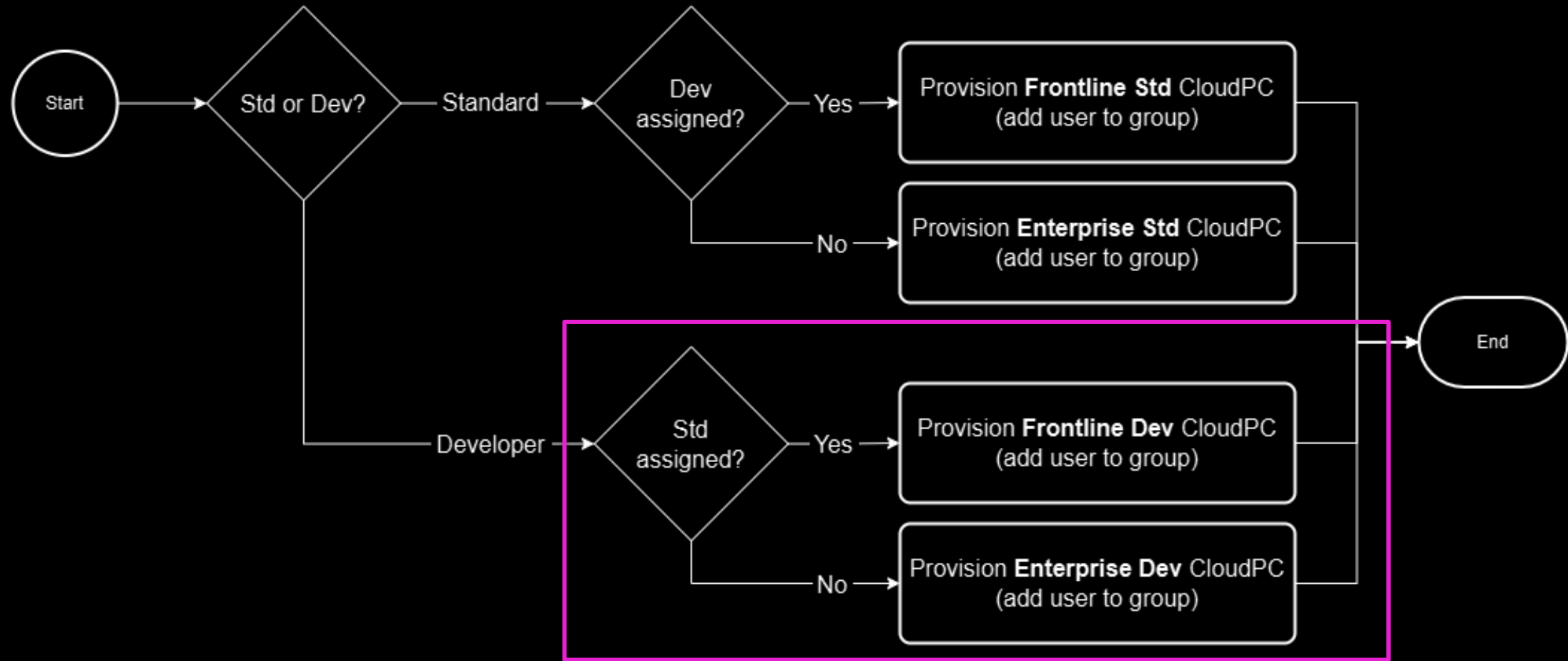
Request Windows 365 CloudPC



Request Windows 365 CloudPC



Request Windows 365 CloudPC



Exercise 2

Create a Workflow

(based on the previous Processflow)

Process description:

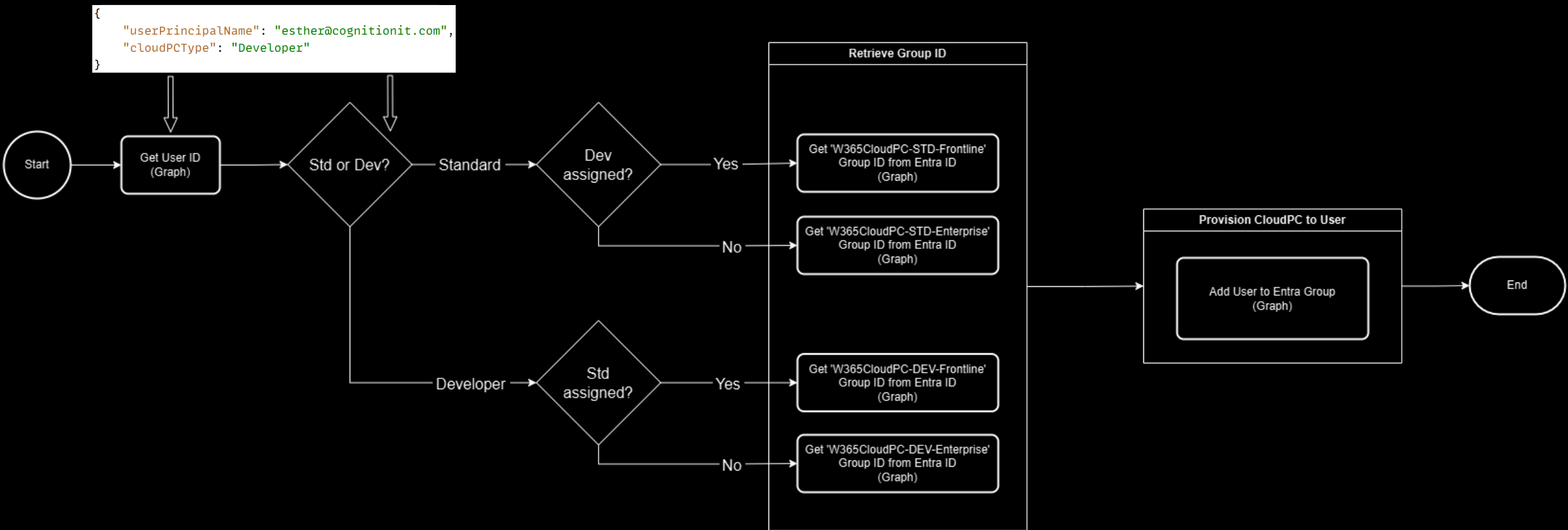
- User can request either a Standard or a Developer Windows 365 CloudPC
- There are two type of CloudPC licenses: Frontline and Enterprise
- The first requested CloudPC will always get an Enterprise license assigned
- If a CloudPC (standard or dev) is already assigned, a Frontline license will be assigned

Available groups:

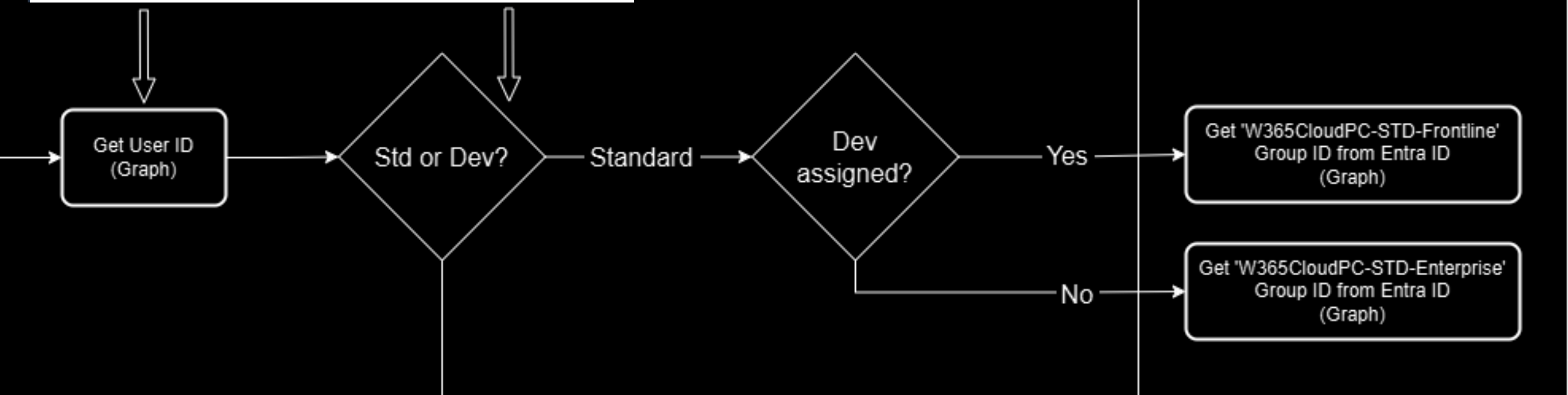
- W365CloudPC-STD-Enterprise
- W365CloudPC-STD-Frontline
- W365CloudPC-DEV-Enterprise
- W365CloudPC-DEV-Frontline

```
{  
  "userPrincipalName": "esther@cognitionit.com",  
  "cloudPcType": "Developer"  
}
```

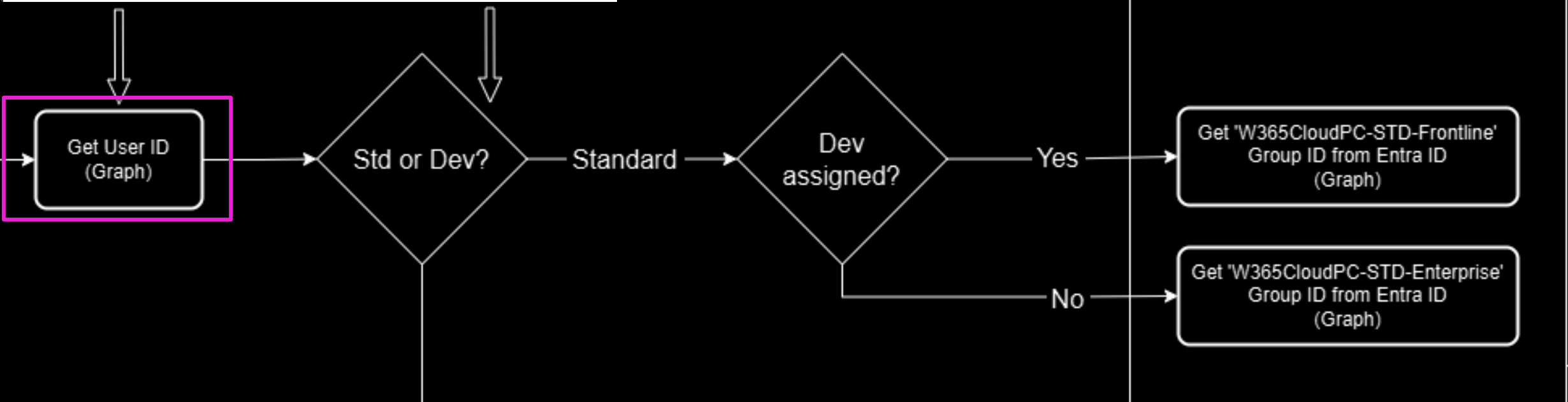
Request Windows 365 CloudPC



```
{  
  "userPrincipalName": "esther@cognitionit.com",  
  "cloudPCType": "Developer"  
}
```




```
{  
  "userPrincipalName": "esther@cognitionit.com",  
  "cloudPCType": "Developer"  
}
```

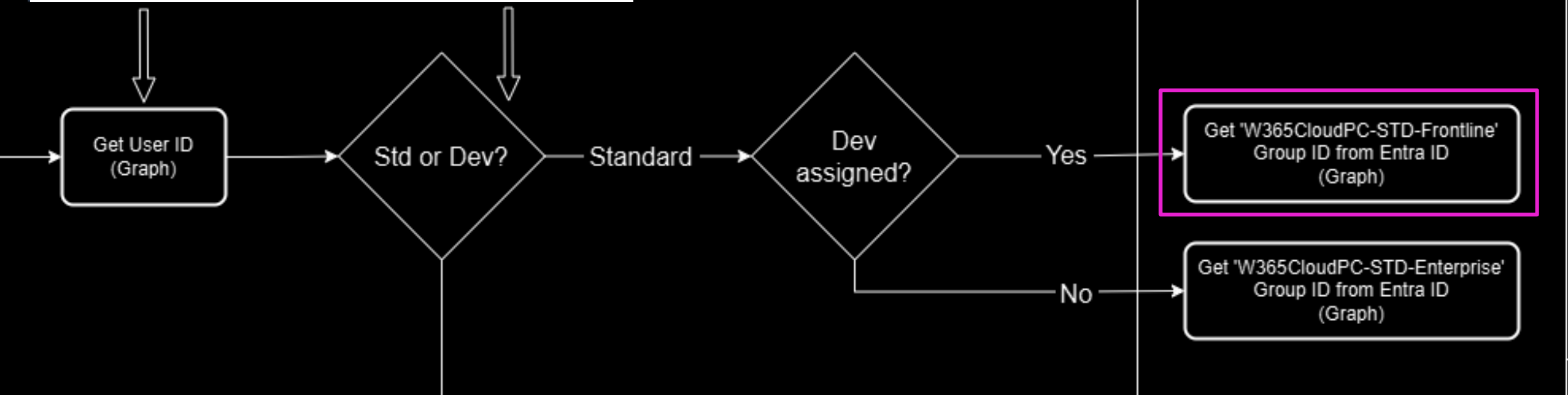


GET

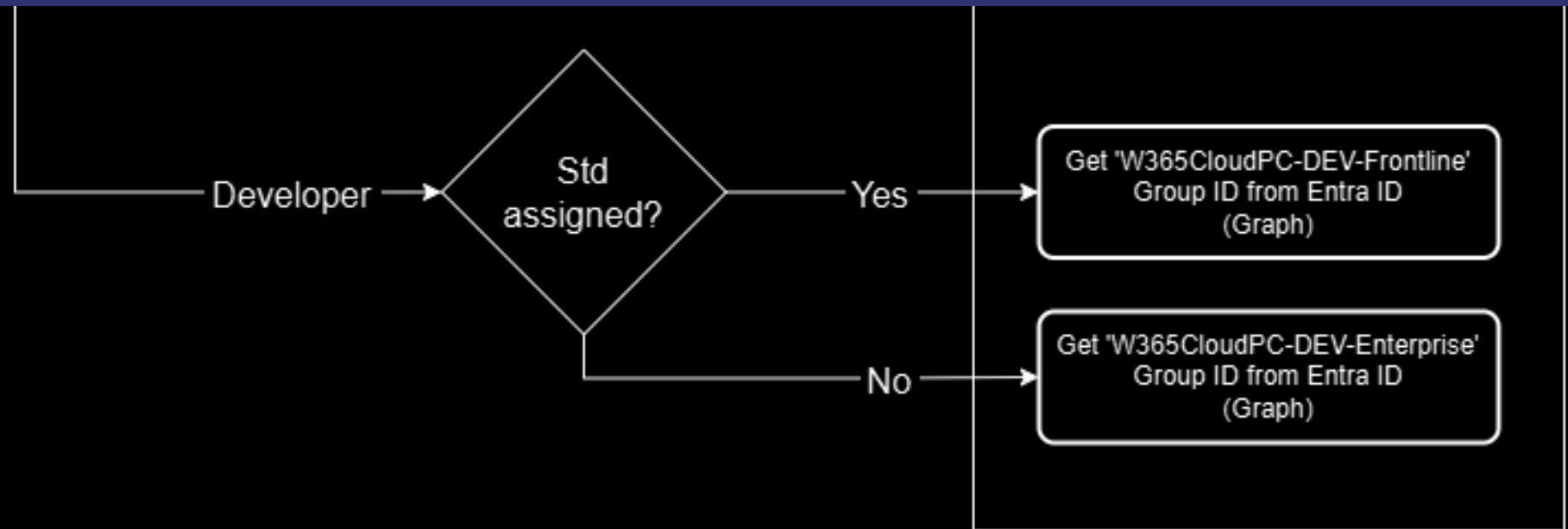


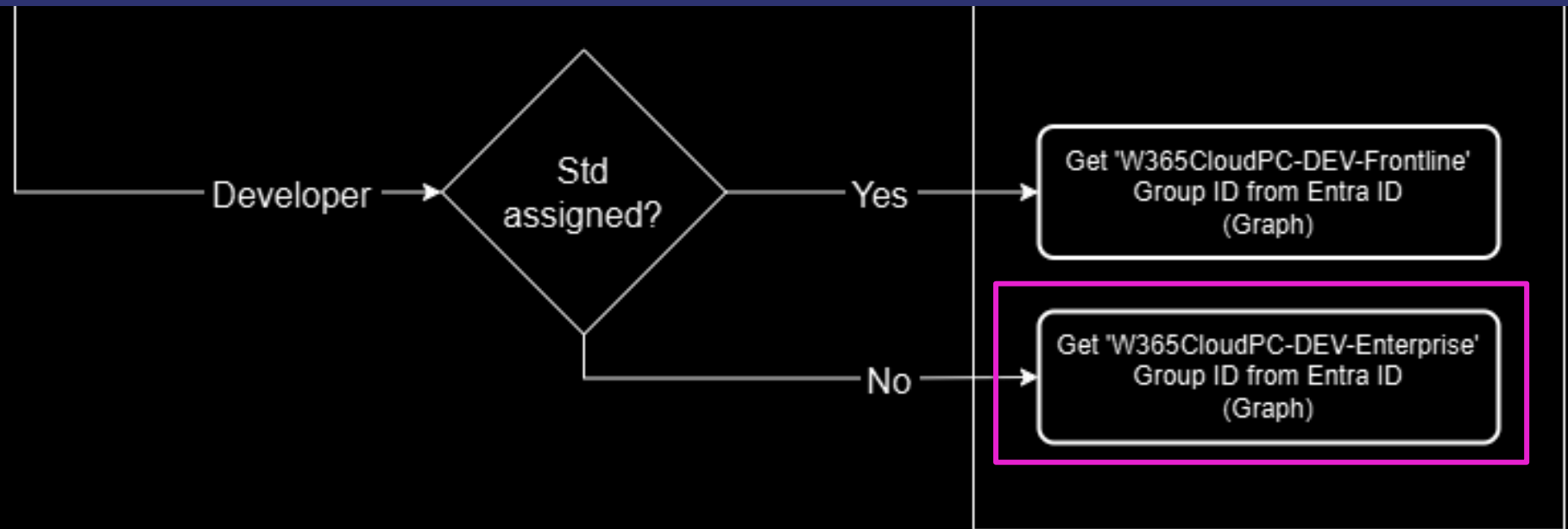
[https://graph.microsoft.com/v1.0/users?\\$filter=startswith\(displayName, 'test01'\)](https://graph.microsoft.com/v1.0/users?$filter=startswith(displayName, 'test01'))

```
{  
  "userPrincipalName": "esther@cognitionit.com",  
  "cloudPCType": "Developer"  
}
```



GET

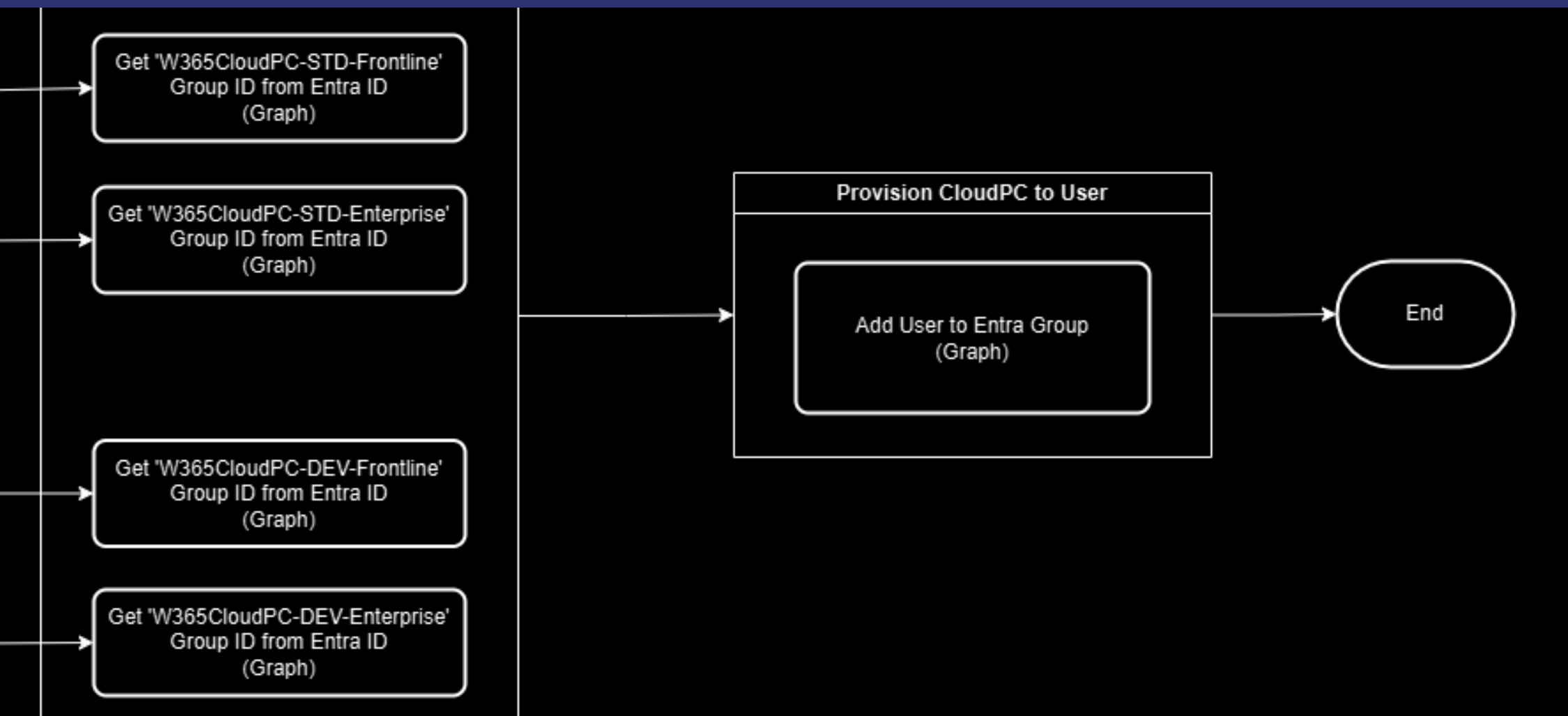


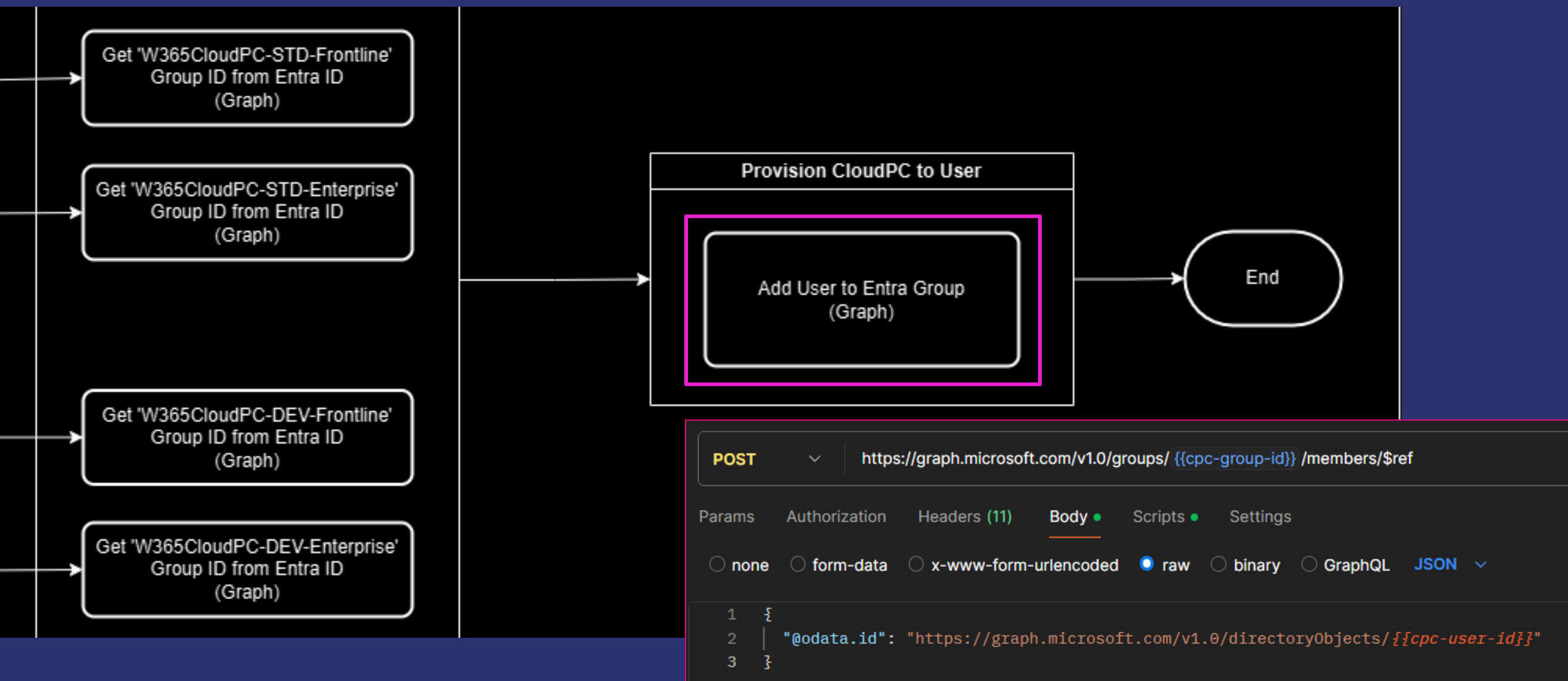


GET



`https://graph.microsoft.com/v1.0/groups?$filter=startswith(displayName, 'W365CloudPC-DEV-Enterprise')`







Windows App

Preview



Home



Devices



All

Cloud PC

ws-avd-demo

Frontline

CPC-W365-Frontline-Pro... - test01

2vCPU | 8GB | 256GB

✓ Ready to connect |

Connect



Azure Virtual Desktop

SessionDesktop

ws-avd-demo

Connect



Settings



Feedback

Exercise 3

Remove a W365 CloudPC

(bonus)

Process description:

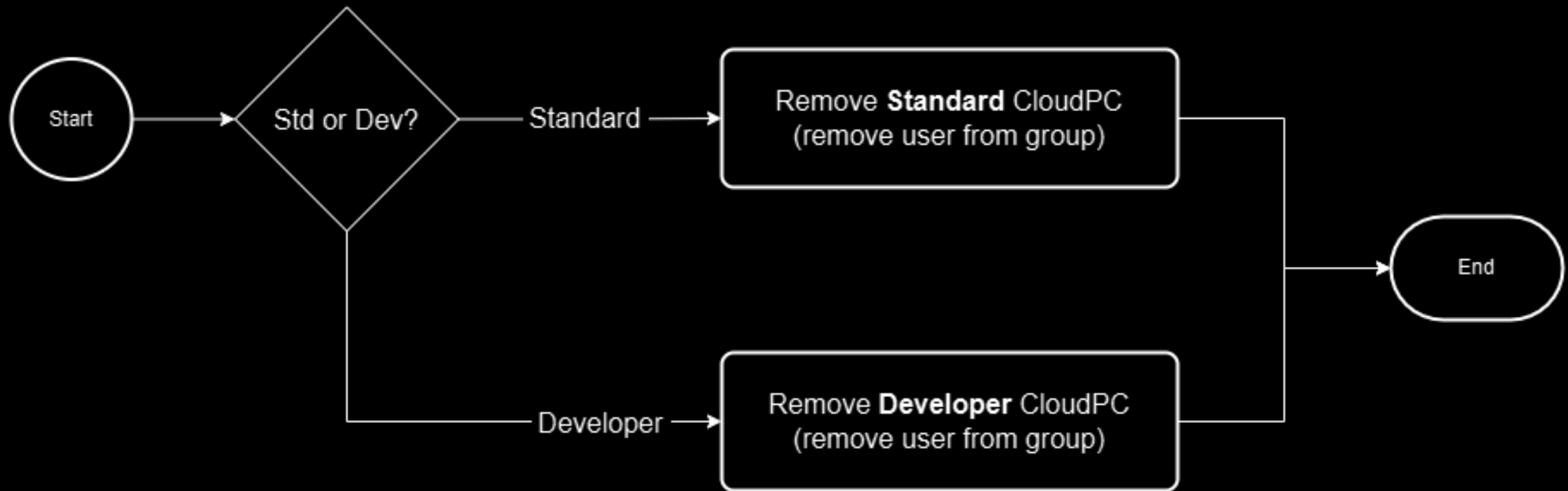
- Admin wants to remove either a Standard or Developer W365 CloudPC for a user
- There are two type of CloudPC licenses: Frontline and Enterprise

Available groups:

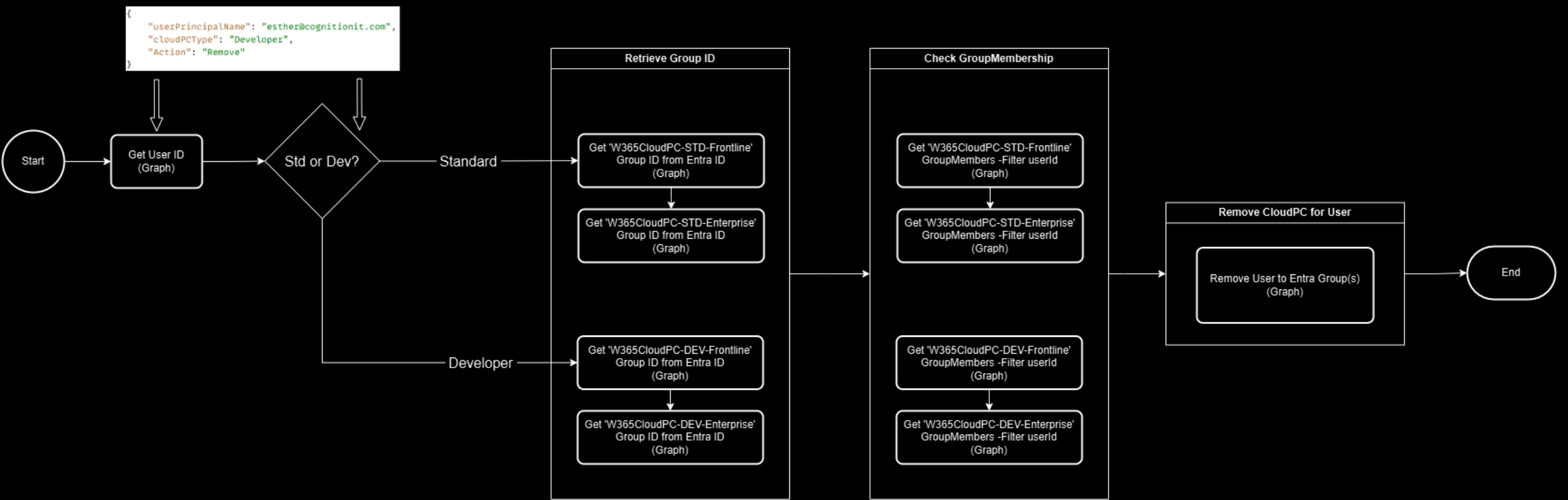
- W365CloudPC-STD-Enterprise
- W365CloudPC-STD-Frontline
- W365CloudPC-DEV-Enterprise
- W365CloudPC-DEV-Frontline

```
{  
  "userPrincipalName": "esther@cognitionit.com",  
  "cloudPCType": "Developer",  
  "Action": "Remove"  
}
```

Remove Windows 365 CloudPC

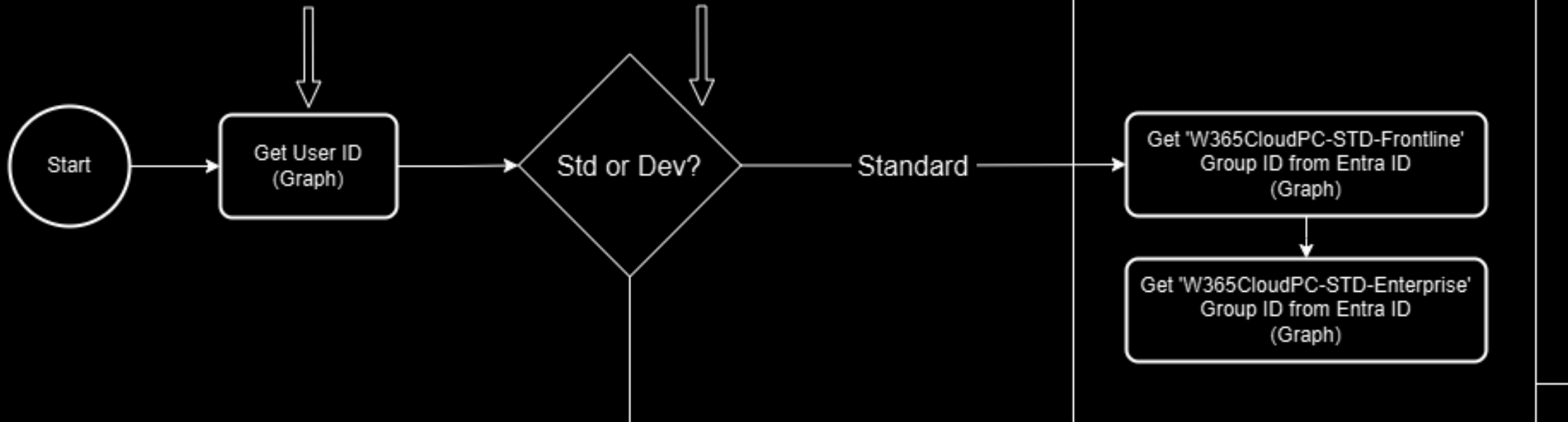


Remove Windows 365 CloudPC



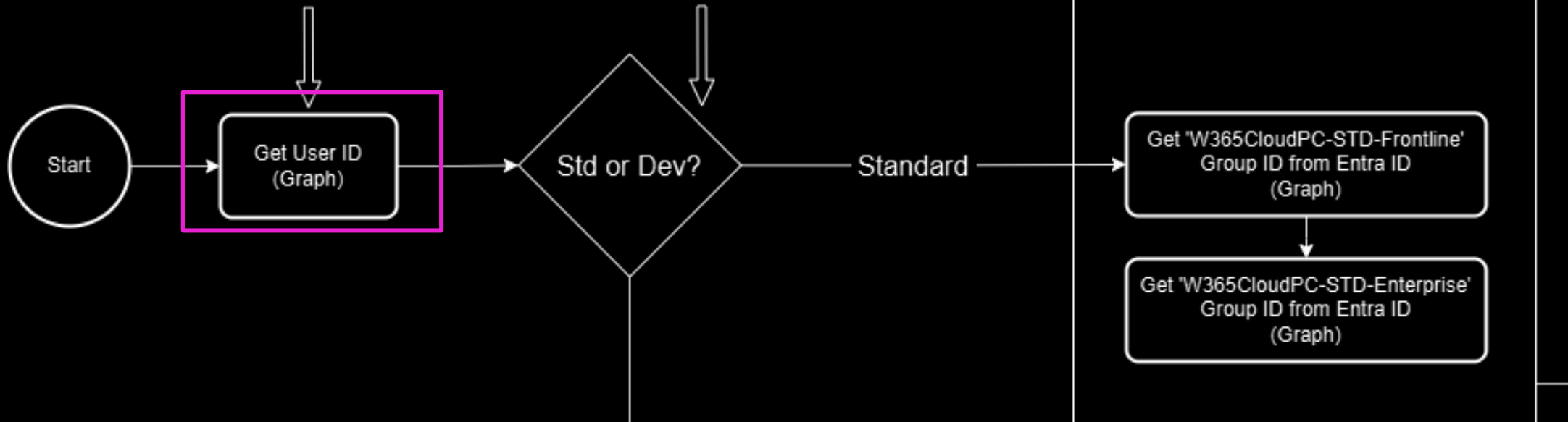
Remove Windows 365 CloudPC

```
{  
  "userPrincipalName": "esther@cognitionit.com",  
  "cloudPCType": "Developer",  
  "Action": "Remove"  
}
```



Remove Windows 365 CloudPC

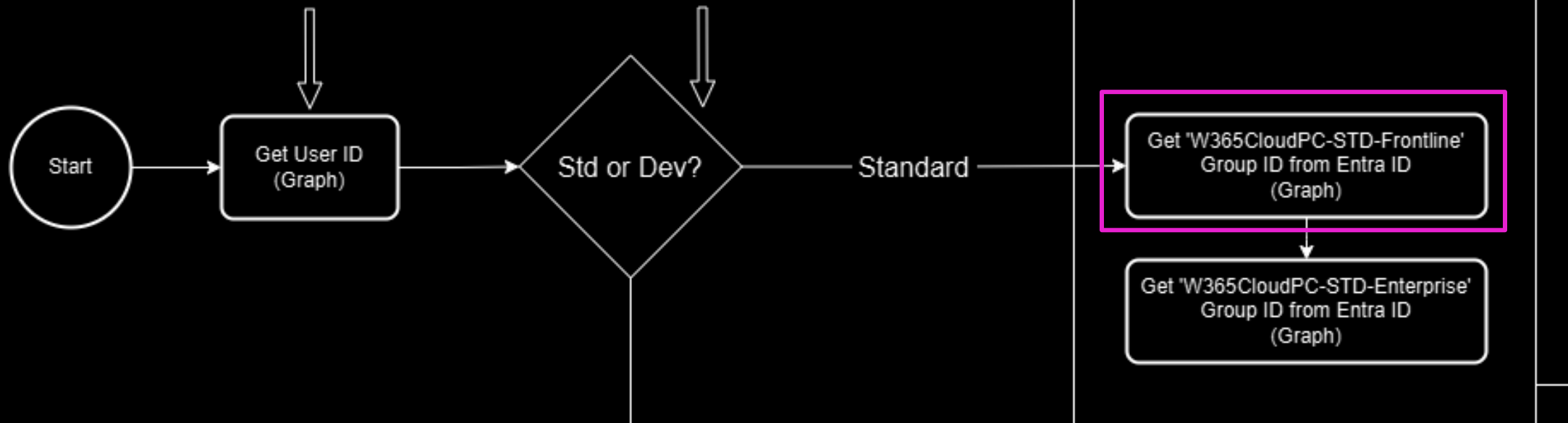
```
{  
  "userPrincipalName": "esther@cognitionit.com",  
  "cloudPCType": "Developer",  
  "Action": "Remove"  
}
```



GET

Remove Windows 365 CloudPC

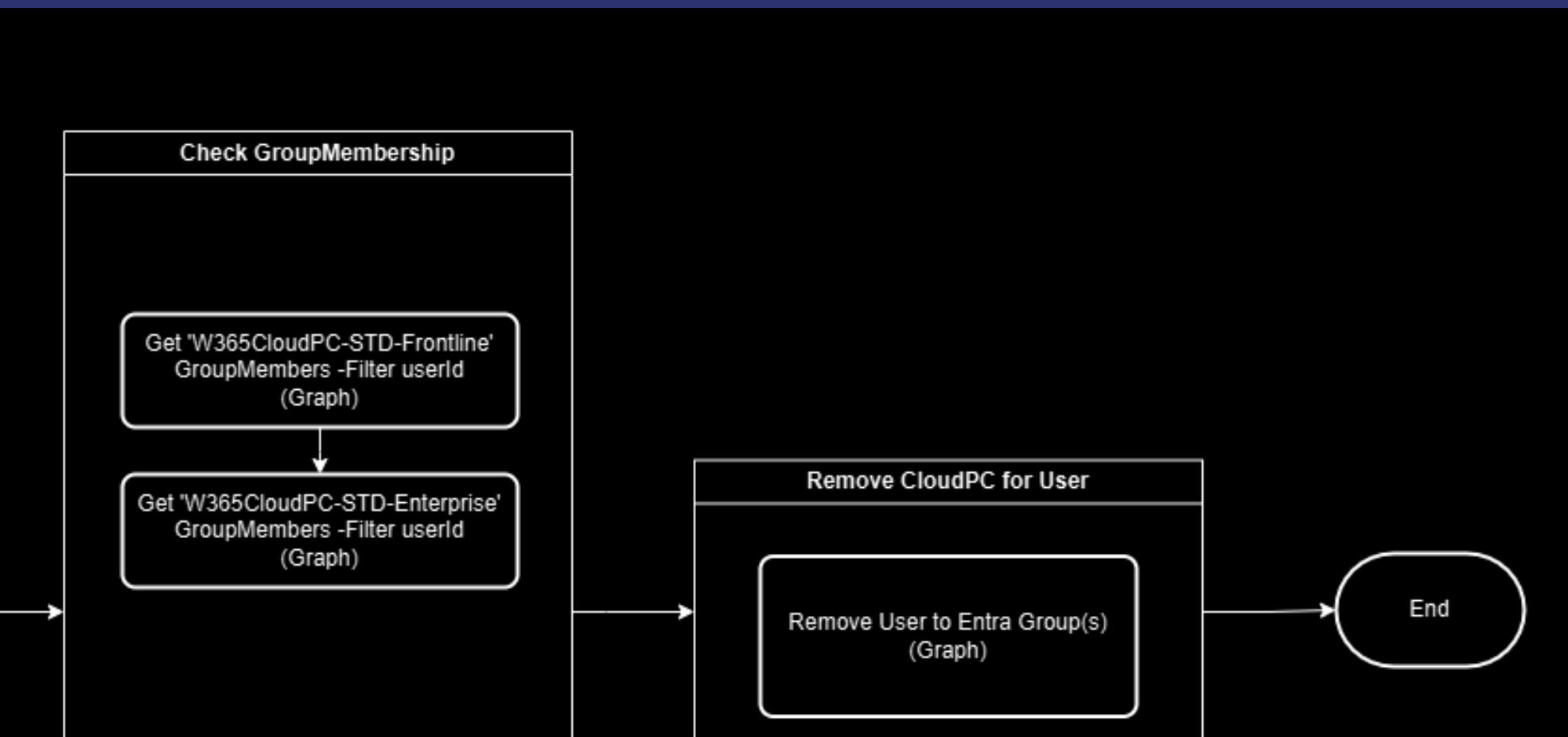
```
{  
  "userPrincipalName": "esther@cognitionit.com",  
  "cloudPCType": "Developer",  
  "Action": "Remove"  
}
```

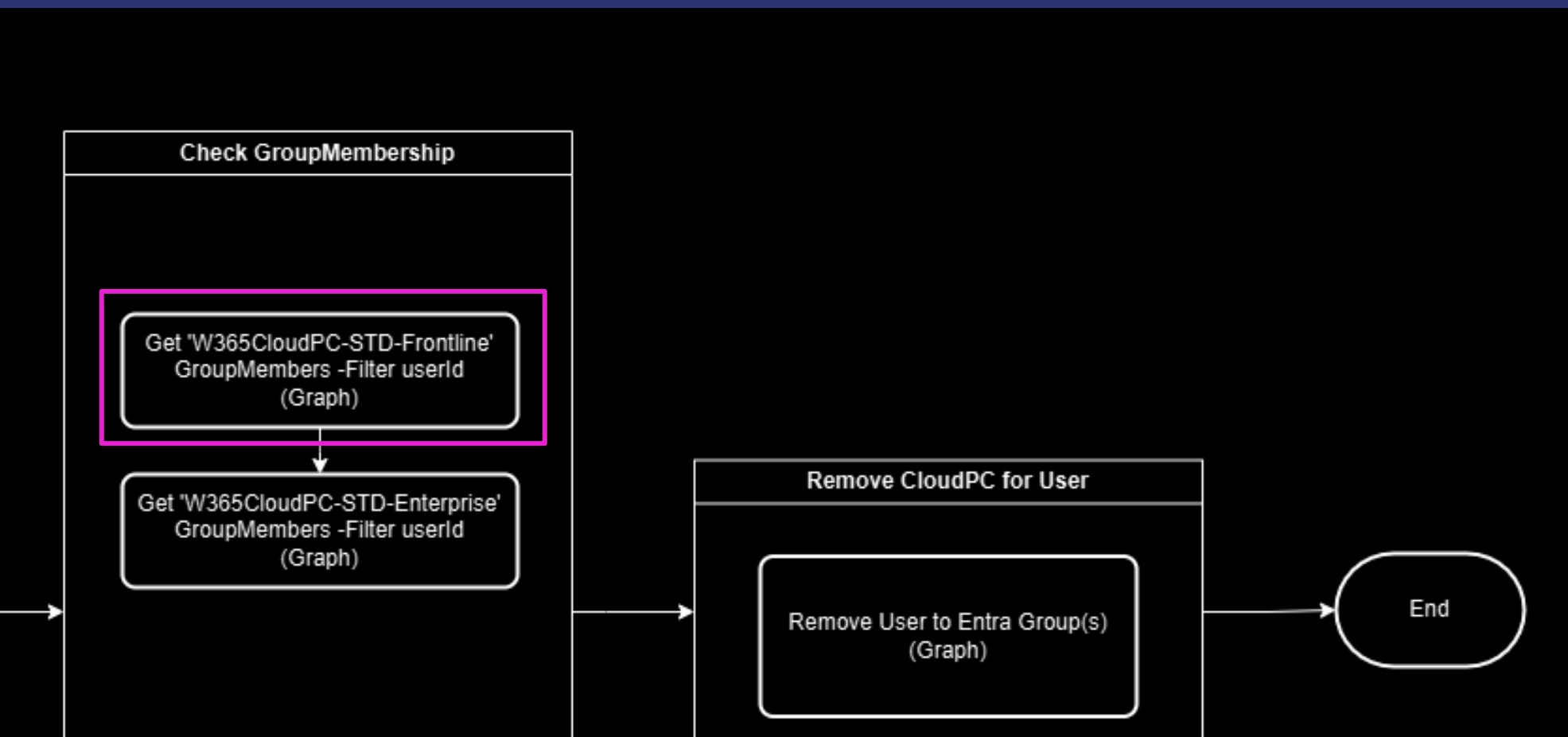


GET



[https://graph.microsoft.com/v1.0/groups?\\$filter=startswith\(displayName, 'W365CloudPC-STD-Frontline'\)](https://graph.microsoft.com/v1.0/groups?$filter=startswith(displayName, 'W365CloudPC-STD-Frontline'))





GET



`https://graph.microsoft.com/v1.0/groups/ {{group-id}} /members?$filter=startswith(userPrincipalName, 'test')`



I love feedback!

THANK YOU

Are there any questions?



<https://github.com/cloud-devops-ninja/myPresentations/tree/main/Alyx/ChangeAgentDay>